

A Research Paper by



The Regional Economy of Penobscot and Piscataquis Counties, Maine and a Potential National Park and Recreation Area



See also companion report:
*A Comparative Analysis of the Economies of Peer Counties with National Parks and Recreation Areas
to Penobscot and Piscataquis Counties, Maine*

Winter 2013

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ABOUT THIS REPORT

Headwaters Economics produced this report at the request of Elliotsville Plantation Inc., which owns and manages the private land that could be donated to the National Park Service for the purpose of creating a National Park and associated recreation area to the east of Baxter State Park.

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ABOUT HEADWATERS ECONOMICS

Headwaters Economics is an independent, nonprofit research group that assists the public and elected officials in making informed choices about land management and community development decisions.

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I. EXECUTIVE SUMMARY

This paper describes the economy of the region where Elliotsville Plantation, Inc. is considering a donation of land to create a National Park and recreation area, along with an endowment for maintenance in the Katahdin Region of Maine. The lands in question are on the eastern edge of Baxter State Park along the East Branch of the Penobscot River. We performed this analysis under the assumption that there would be up to 150,000 acres of land donated to the National Park Service, of which 75,000 acres would be in a National Park (NP) and 75,000 acres would be in a National Recreation Area (NRA). In this paper, we discuss the potential costs and benefits, and the possible economic impact of these land designations.

The economy of the study region, defined as Penobscot and Piscataquis counties, has shifted dramatically in recent decades. Forest products industry jobs have declined steadily and at the same time, a modern services economy, including higher-wage sectors like health care, and professional and technical services, has become the dominant form of economic activity. In addition, non-labor sources of income—closely related to growing investment income and an aging population—are the largest sources of personal income in the region. These trends are consistent with the direction of Maine’s economy and that of the nation.

There are significant differences between communities in the two-county region, with much of the growth centered in the younger, more educated, and vibrant Bangor area, while in some smaller, rural communities the population is aging, unemployment rates are high, and the economy is not growing.

There is little evidence that creation of a National Park and recreation area would harm the local forest products industry, or that there would be significant changes in local and state taxes collected. Instead, the NP/NRA has the potential to create new, high-quality experiences that benefit from the National Park Service brand, while protecting a unique flora and fauna, rivers, streams, lakes and ponds, and scenic vistas.

As an economic development strategy, a NP/NRA has the potential to stimulate tourism and attract new migrants, including a younger population. A companion to this report, *A Comparative Analysis of the Economies of Peer Counties with National Parks and Recreation Areas to Penobscot and Piscataquis Counties, Maine*, shows the economic performance of 16 related NP and NRA units around the country. The report shows that for National Parks similar to the one being discussed, spending by visitors in the local economy resulted, on average, in 839 local private sector jobs. These park units also directly employed, on average, 216 National Park Service workers, such as park rangers, interpretive guides, scientists, and maintenance workers, as well as contractors. The combined average private and public sector employment related to these parks was 1,055 jobs.

A tourism promotion strategy could advertise the NP/NRA as part of a regional network of recreation lands, with Acadia National Park and its 2.5 million visitors as the coastal anchor, all accessible via Bangor’s international airport and I-95. This combination of amenities and access to larger markets via transportation infrastructure, combined with a lower cost of living, could also serve to attract migrants, retirees, and entrepreneurs willing to relocate to gateway communities to the NP/NRA for quality of life reasons.

II. INTRODUCTION

This paper describes the economy of the region where Elliotsville Plantation, Inc. is considering a donation of land to create a National Park and a recreation area, along with an endowment for maintenance, in the Katahdin Region of Maine. The lands in question are on the eastern edge of Baxter State Park along the East Branch of the Penobscot River. We performed this analysis under the assumption that there would be up to 150,000 acres of land donated to the National Park Service, of which 75,000 acres would be in a National Park (NP) and 75,000 acres would be in a National Recreation Area (NRA).

The purpose of this report is to set the stage for a discussion of the possible economic impact of creating a National Park and National Recreation Area (NP/NRA). We first describe the region's economy, and then explore whether the region would benefit economically from these new land designations.

The companion report, *A Comparative Analysis of the Economies of Peer Counties with National Parks and Recreation Areas to Penobscot and Piscataquis Counties, Maine*, provides a review of peer areas around the country, describing the economic performance of similar areas that have NP/NRAs. This companion report explores how a National Parks and National Recreation Areas strategy has worked for other communities.

In this report, we describe a two-county region comprised of Penobscot and Piscataquis counties and also show, where the data allow, differences between counties and communities. This is an area that is in transition, like much of rural Maine. The challenge of this transition was summarized in a 2007 report on Maine's economy:

The state's traditional natural resource-based and manufacturing industries have for some time been in long-term economic decline and transition. While those changes are similar to other rural regions of New England and the United States, they represent a formidable challenge in Maine because Maine's well-being has long been rooted in a largely rural-industrial economy. As Maine makes a shift to a more urban post-industrial economy, the question of what will become of the regions at the heart of the state's economy and self-image becomes more urgent.¹

The overall picture of the two-county region is a mixed story of gradual growth and transition from a resource-based economy to one increasingly dependent on service industries. This is consistent with Maine's economy and that of the nation, but with much of the growth centered around Bangor and the southern half of Penobscot County. There are signs of hope, such as a rapid rise in the health care industry and the presence of other relatively high-wage service sectors, including engineering, software design, and architecture. Also positive is the fact that in Penobscot County most of the population growth is from in-migration. The area is attractive and overall the economy is growing, but some communities lag behind and poverty levels remain high.

How might new public land designations affect the future of the region? The potential benefits of a new NP/NRA are best understood in the context of the following questions:

- What is the region's competitive advantage in today's globally competitive service-based economy? And, how can the timber industry remain an essential part of the mix of a more diversified economy?
- Can recreation, scenic, and environmental amenities help lure higher-wage service workers to live in gateway communities like Millinocket?

-
- While “amenity migration” is not a new phenomenon in Maine, can the proposed new NP/NRA successfully compete with or complement coastal Maine?
 - Can the region promote a new brand of high-quality tourism?
 - How will the region compete to capture the rapid growth related to retiring Baby Boomers?

The following sections describe the methods and data used, and the socioeconomic trends in the Penobscot-Piscataquis county region, as well as in selected communities. We then offer a contrast between north and south Penobscot County, and explore the benefits and costs of a potential National Park and National Recreation Area. In the Discussion section, we revisit these questions posed here. We place this discussion in the context of rural development challenges and opportunities as described by a number of prominent Maine economists.

National Parks and National Recreation Areas

National Parks

In 1916 President Woodrow Wilson signed the National Park Service Organic Act into law and created the National Park Service within the U.S. Department of Interior. The Organic Act charged the newly created National Park Service “to conserve the scenery and the natural and historic objects and wildlife therein, and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations.” This dual mandate—conservation and recreation—continues today as the guiding principle for the nation’s National Parks. Within the scope of this mandate, each National Park has unique characteristics and tailored management. Off-road motorized recreation is generally not allowed, though some National Parks allow snowmobiling. Hunting is not permitted except in Alaska. Fishing is allowed. Timber harvesting is not permitted in National Parks.

For more information on National Parks, see: <http://www.nps.gov/index.htm>.

National Recreation Areas

National Recreation Areas evolved in the early 1960s as a type of federal protected area that focused initially on large reservoirs and water-based recreation. In 1963 President John F. Kennedy issued Executive Branch policy establishing broad criteria for establishing National Recreation Areas and today the primary purpose of NRAs remains outdoor recreation. Other uses are allowed but must be compatible with fulfilling the recreation mission. A range of federal agencies, not just the National Park Service, can manage NRAs. The exact uses permitted vary across NRAs and are specifically detailed in the legislation creating each NRA. National Recreation Areas are less restrictive than National Parks, and often permit a variety of off-road vehicles as well as hunting. Timber harvesting is not permitted in NRAs.

For information on National Recreation Areas, see:
http://www.cr.nps.gov/history/online_books/anps/anps_5g.htm.

III. METHODS

Geography

The study “region” is defined as a two-county area: Penobscot and Piscataquis counties. For the purpose of this report we also describe conditions in a number of communities that may be affected by the proposed new National Park and National Recreation Area: Millinocket, East Millinocket, Patten, and Bangor in Penobscot County; and Dover-Foxcroft in Piscataquis County. We highlight these because they are illustrative of the differences between communities, and between county and community-level statistics. In addition, we contrast the northern and southern halves of Penobscot County to illustrate the differences between the metropolitan and non-metropolitan (rural) portions of the county.

Data

This report draws on published statistics from a variety of sources. The principal demographic and economic data sources include: U.S. Department of Commerce, U.S. Census Bureau, U.S. Department of Labor, the Maine Center for Workforce Research and Information, and others. All data sources are documented in the References section at the end of this report. For more details on community, county and regional data, see the Economic Profile System, which was developed by Headwaters Economics in conjunction with the U.S. Forest Service and Bureau of Land Management and is available at: <http://headwaterseconomics.org/tools/eps-hdt>. All dollar figures in this report are adjusted for inflation—that is, shown in real dollars (2011\$ in most cases). Wherever possible we place data in context and offer comparisons between communities and counties; and between counties, the state of Maine, and the U.S.

Some data, such as long-term trends in employment and personal income by industry, unemployment rates, and the growth of non-labor income sources (such as retirement and investment) are only available at the county level. For this reason, some large-scale trends in the region’s economy are described only for Penobscot and Piscataquis counties, or sometimes as the two counties combined (the region). Other data, such as population and poverty statistics, are available at the community level, using the Census Bureau’s American Community Survey (ACS).

The ACS is a nationwide survey conducted every year by the Census Bureau that provides current demographic, social, economic, and housing information about communities on an annual basis. Data used in this report are based on 5-year ACS estimates. For brevity, table and figure titles show the latest year of the 5-year period (2010). Footnotes are provided to clarify that the data represent average characteristics over a 5-year period. Because ACS is based on a survey, it is subject to error, and the Bureau reports all coefficients of variation by data point. Whenever data were used that have a high margin of error, we note this in the report.

ACS data have the highest accuracy at the largest geographic scale. State-level data are more accurate than county-level data, and county-level data are more accurate than sub-county level data, which in turn are more accurate than community-level data. For this reason, we used Census County Divisions (CCD) level data for Millinocket, East Millinocket, Patten, Bangor, and Dover-Foxcroft, and not data from Census Designated Place (CDP), which is a geographic unit so small that most data have high margins of error. We also used CCDs when contrasting the northern and southern halves of Penobscot County.

IV. LONG-TERM ECONOMIC TRENDS

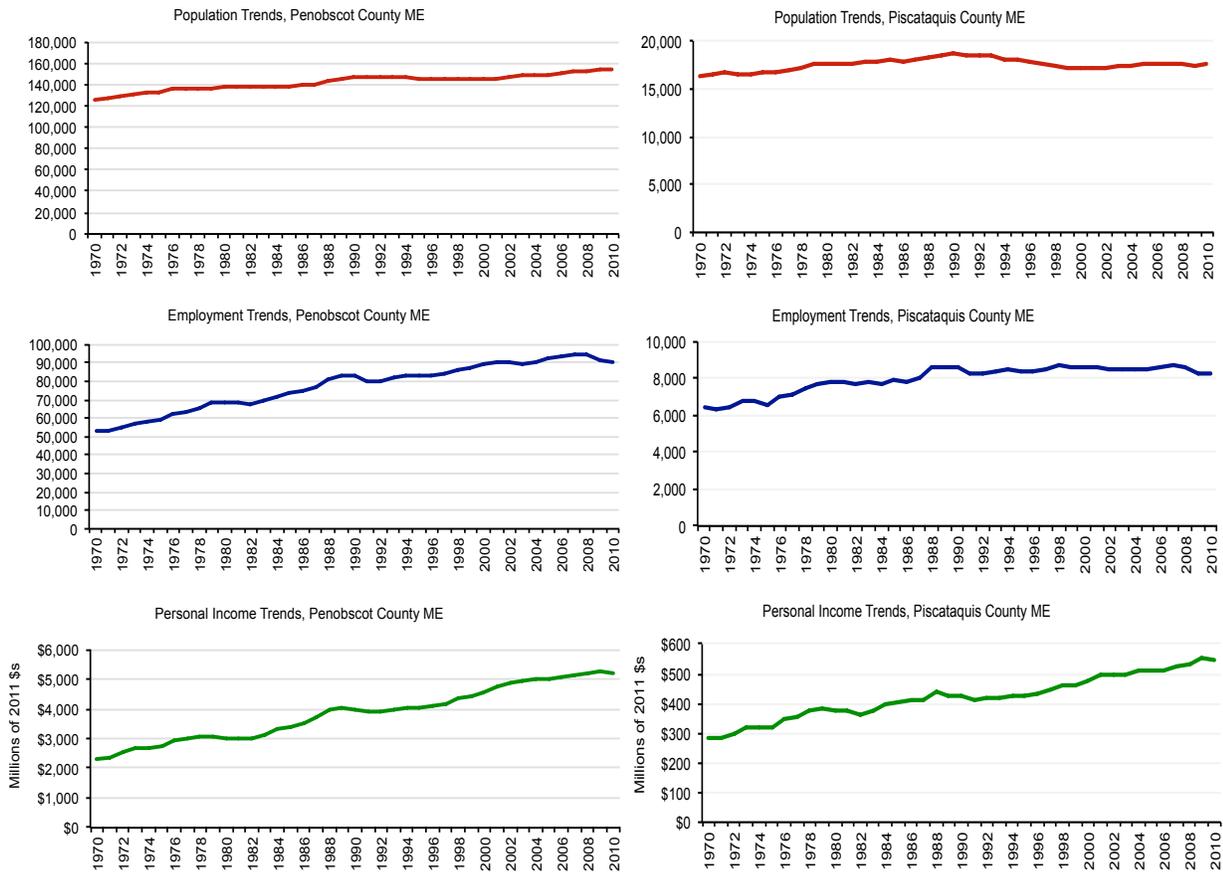
Population, Employment, and Personal Income

Total Population, Employment, & Real Personal Income Trends, 2-County Region, 1970-2010

	1970	1980	1990	2000	2010	Change 2000-2010
Population	142,130	154,863	165,736	162,182	171,383	9,201
Employment (full and part-time jobs)	59,507	76,693	91,493	98,135	98,717	582
Personal Income (thousands of 2011\$s)	2,591,246	3,389,454	4,362,052	5,045,352	5,753,335	707,984

The table above combines data for Penobscot and Piscataquis counties into one region. The region’s population grew throughout the 1970s and 1980s, declined in the 1990s, and grew again in the 2000s. Figures below show the long-term trends for both counties. Much of the rise and decline in population occurred in Piscataquis County. From 1990 to 2000, for example, Piscataquis County lost 1,311 people, a seven percent decline, while the population in Penobscot County during that time lost less than 465 people, a decline of less than one percent.² (As we show later in this report, there are large differences between communities, and between the northern and southern halves of Penobscot County).

By the 2000s, employment and personal income rose in Penobscot County, while employment remained flat in Piscataquis County despite a rise in personal income. Later in this report, we explore in more detail the relatively faster rate of growth of real personal income relative to employment. An aging population, in-migration (in some areas), and the growth of age-related, investment, and other “non-labor” income sources explain much of this discrepancy.



Penobscot County, and the Bangor area specifically, dominate the region. In 2010, the population of Piscataquis County was 17,545, while that of Penobscot County was 153,838, and 86 percent of that population was in the greater Bangor metropolitan area (defined in more detail later in this report).

From 2000 to 2011, in-migration contributed 70 percent of population growth for Penobscot County, while in Piscataquis County all of the increase in population was from natural growth (births exceeding deaths).³

Population Change by Community

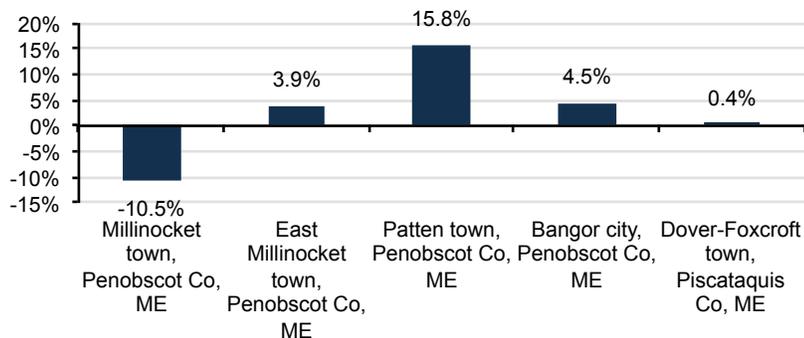
Not shown in aggregate figures for the two-county area are the differences between individual communities. The table and figure below show population change from 2000 to 2010 for a number of towns and cities in the two-county area (technically, the “communities” listed are Census County Divisions that go by those names).⁴ For comparison, Maine’s population grew by 4.1 percent during this time.

In spite of overall aggregate growth in the region, some communities continue either to lose population or grow slowly.

Population, 2000-2010*

	Millinocket town, Penobscot Co, ME	East Millinocket town, Penobscot Co, ME	Patten town, Penobscot Co, ME	Bangor city, Penobscot Co, ME	Dover-Foxcroft town, Piscataquis Co, ME
Population (2010*)	4,655	1,900	1,286	32,899	4,227
Population (2000)	5,203	1,828	1,111	31,473	4,211
Population Change (2000-2010*)	-548	72	175	1,426	16
Population Percent Change (2000-2010*)	-10.5%	3.9%	15.8%	4.5%	0.4%

Percent Change in Population, 2000-2010*



* The 2010 data in this table are calculated by ACS using annual surveys conducted during 2006-2010 and are representative of average characteristics during this period.

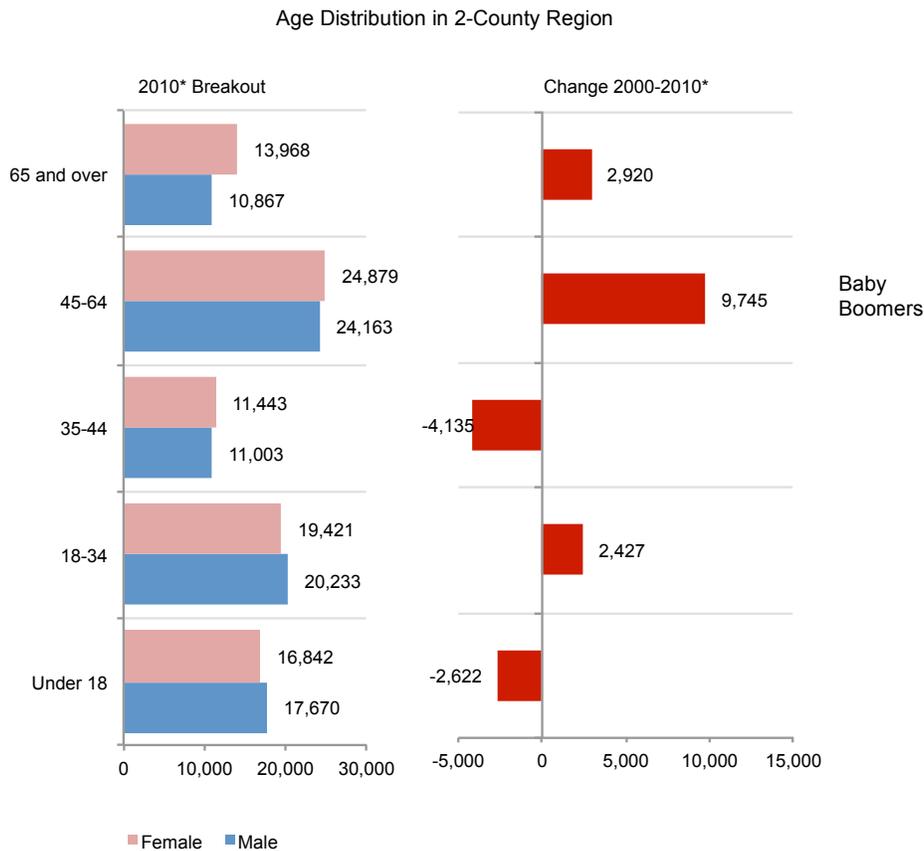
The largest decline in population (-10.5% from 2000 to 2010) is occurring in Millinocket. Other communities in the region, such as East Millinocket and Dover-Foxcroft are growing slightly, while Patten is growing rapidly, but has a small overall population, adding only 175 new people in the last decade. The five towns in aggregate have added 1,141 net new people since 2000, with Bangor alone adding 1,426 net new people. In other words, more than 100 percent of net new growth is attributable to the Bangor area.

Most striking is the long-term population decline when current population figures are compared to 1990 Census estimates. Between 1990 and 2010, Millinocket lost 2,324 people (from 6,979 people in 1990), East Millinocket lost 260 people (from 2,168 in 1990), Bangor lost 1,691 (from 34,590 in 1990), and Dover-Foxcroft lost 442 people (from 4,669 in 1990). Meanwhile, Patten gained 30 people from 1990 to 2010 (from 1,256 people in 1990).⁵

Population Change by Age

The figure below shows the changing age-class composition of the population for the aggregate two-county region. From 2000 to 2010, the region added 8,335 net new people. The young adults (age 18-34) added 2,427, most of them likely in the Bangor area. The region’s fastest growth was in the Baby Boomer generation (age 46-64), adding 9,745 new people.

From 2000 to 2010, the median age in Piscataquis County rose from 42.1 to 47, while in Penobscot County it rose from 37.2 to 39.4 (the median age in Maine in 2010 was 42 years).⁶



* The 2010 data in this figure are calculated by ACS using annual surveys conducted during 2006-2010 and are representative of average characteristics during this period.

While young adults and Baby Boomers are growing in numbers region-wide, there are significant differences between communities.

The figure to the right shows the age distribution for Bangor. From 2000 to 2010, Bangor added 1,426 net new people, with the vast majority of the growth in the Baby Boomer generation, followed by young adults and those over the age of 65.

The Bangor area is relatively young. The median age in 2010 was 37.7 (compared to 47 for the region and 42 for Maine). It rose only slightly from a median age of 36.1 in 2000.

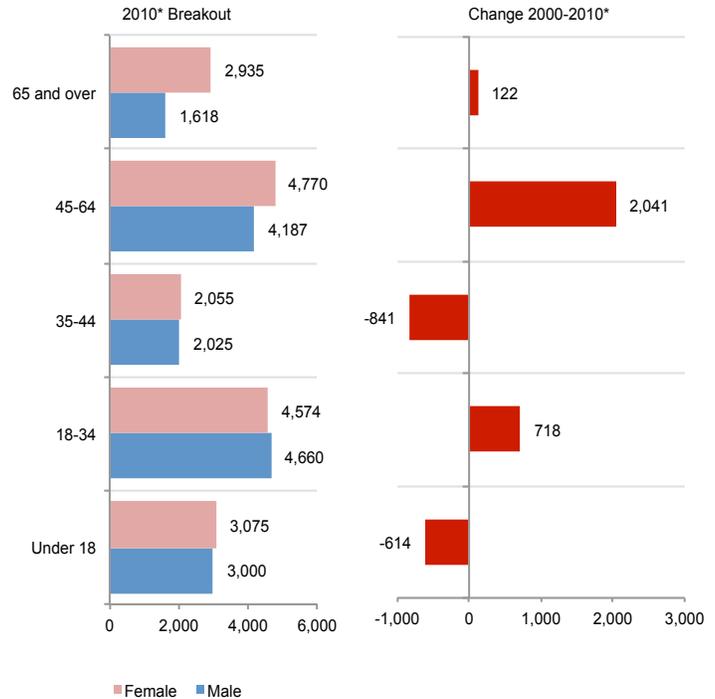
By comparison, the town of Millinocket (bottom figure) is relatively old and getting older.

The figure to the right shows the changing age distribution in the town of Millinocket, from 2000 to 2010. This community is losing the young and gaining those in retirement age.

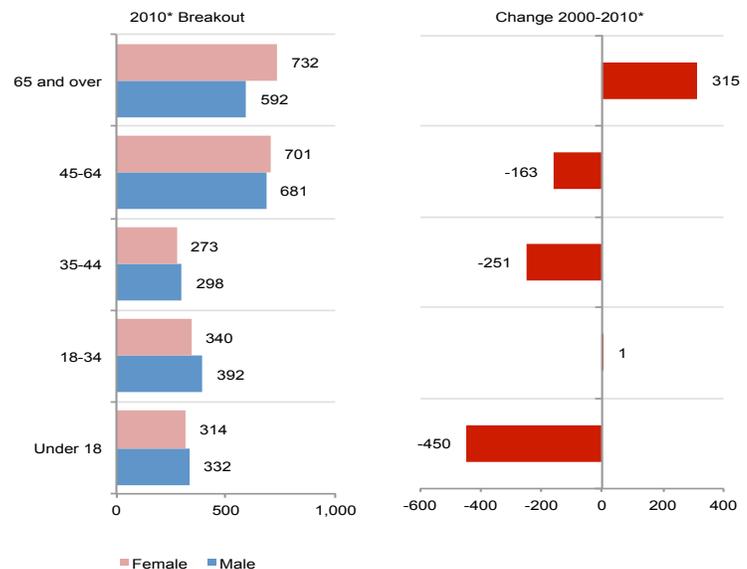
From 2000 to 2010, the median age in the town of Millinocket rose from 44.5 to 50.5 years, and the only age category of growth was in population 65 years and older.

These two figures illustrate that while region-wide there is significant growth in the young adult group and Baby Boomers (an age group that includes working-age adults), this is not the same for some communities like Millinocket.

Age Distribution in Bangor



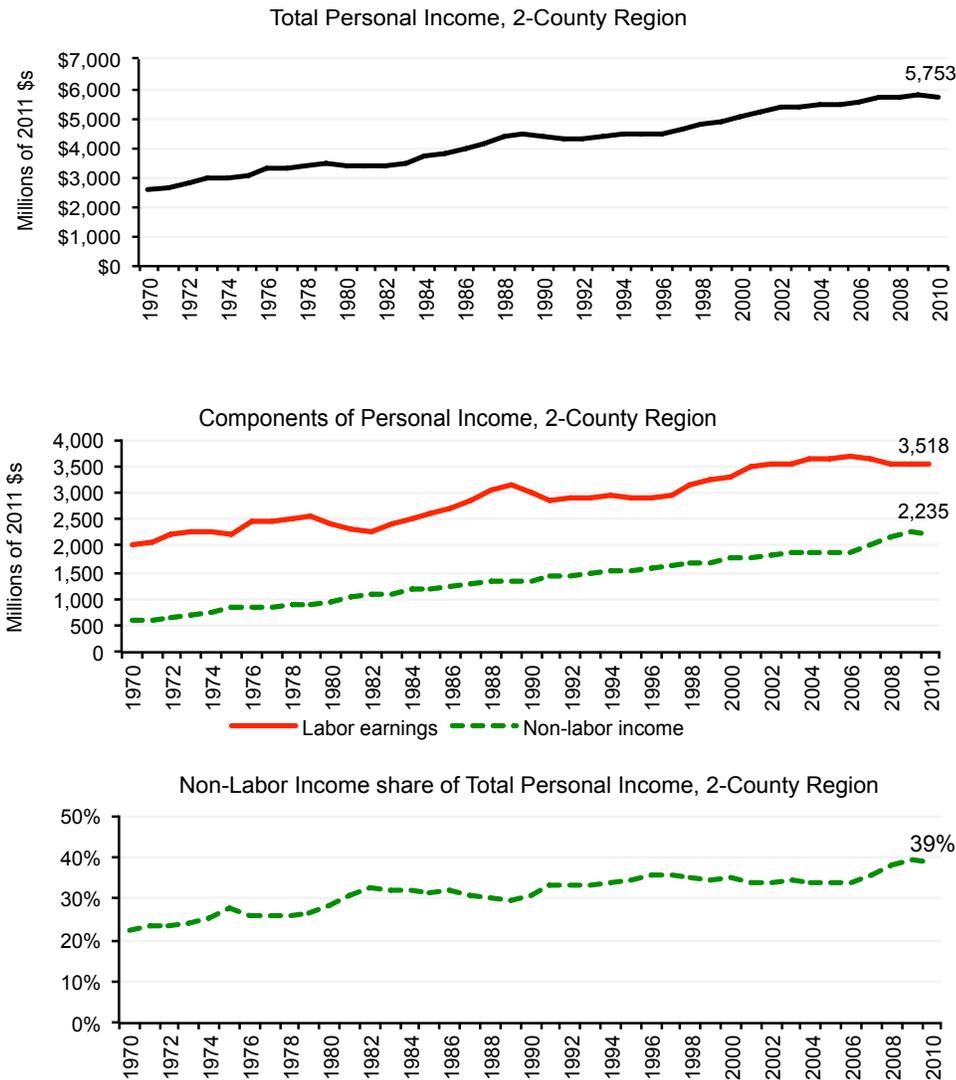
Age Distribution in Millinocket



Elements of Personal Income Growth: Labor and Non-Labor Income

In order to understand how a new National Park and National Recreation Area may fit into the regional economy, it is important to understand the elements of recent economic growth. The first figure below shows that, after a rise and decline in the late 1980s, real total personal income in the region has grown steadily, particularly throughout the 2000s, followed by a slight decline corresponding with the recent recession, which started in 2007. From 2000 to 2010, total personal income in the region grew by 14 percent (a rise of \$707.9 million, in real terms). Of the new income, 33 percent was from labor earnings (a rise of \$233 million), while 67 percent was from non-labor sources (a rise of \$474.9 million).

Non-labor income sources consist of two categories: transfer payments (e.g., retirement); and dividends, interest and rent (i.e., money earned from investments). Non-labor income (indicated in dotted green lines in the figures below) constituted 39 percent of all personal income in the region in 2010. (Non-labor also includes income maintenance payments, which represented 8% of total personal income in the region in 2010).⁷ From 2000 to 2010, 67 percent of all net growth in total personal income was from non-labor sources. These non-labor sources of income can add diversity and stability to the region, and also can help stimulate other sectors of the economy (for example, retirees and people with investment income buy health care services, have homes built, and buy at local stores).



Percent of Total Households Receiving Earnings, by Source, 2010

	Millinocket town, Penobscot Co, ME	East Millinocket town, Penobscot Co, ME	Patten town, Penobscot Co, ME	Bangor city, Penobscot Co, ME	Dover-Foxcroft town, Piscataquis Co, ME
Labor earnings	54.2%	65.1%	67.2%	74.8%	80.0%
Social Security (SS)	50.5%	43.1%	43.2%	29.7%	31.0%
Retirement income	26.6%	23.0%	18.7%	17.0%	24.2%

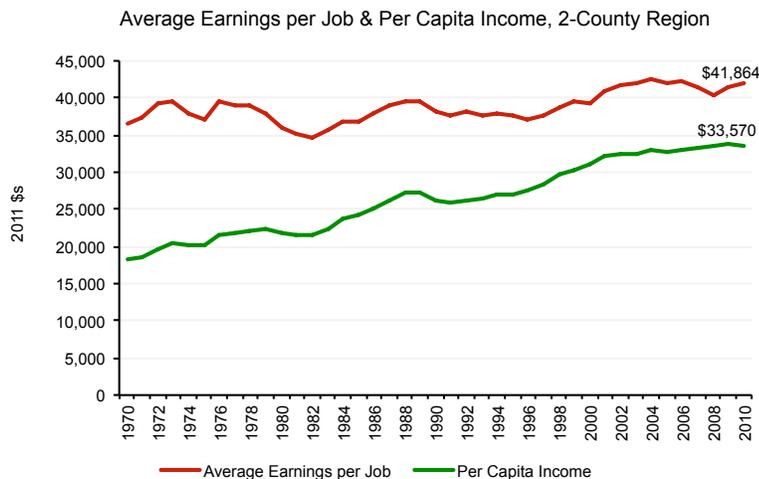
Note: figures in the table in orange indicate a margin of error between 14-40 percent for this variable in the American Community Survey.

The table above illustrates the presence of “non-labor” income sources for various communities, measured in terms of the percent of households in communities that receive Social Security and Retirement benefits, as measured by the Bureau of the Census. More than half of households in Millinocket receive Social Security income, compared to about one-third of families in Bangor. The Bureau estimates that about 26 percent of households in Millinocket receive retirement payments, compared to 17 percent in Bangor. These figures illustrate the fact that Millinocket is older, with many families relying on retirement and pensions.⁸

Retirement income consists of income received by families from: (1) retirement pensions and survivor benefits from a former employer; labor union; or federal, state, or local government; or the U.S. military; (2) disability income from companies or unions; federal, state, or local government; or the U.S. military; (3) periodic receipts from annuities and insurance; and (4) regular income from IRA and Keogh plans. Social Security refers to households that receive income that includes Social Security pensions and survivor benefits, permanent disability insurance payments made by the Social Security Administration before deductions for medical insurance, and railroad retirement insurance. It does not include Medicare reimbursement.

The Effect of Non-Labor Income Sources on Other Economic Indicators

As mentioned earlier, one of the possible reasons for the rapid rise in personal income, in spite of flat, declining, or slow-growing employment trends, is the rapid rise of non-labor income sources. The same trend can be seen in terms of per capita income, which is rising faster than average real earnings per job because this measure also includes non-labor sources.⁹ Not only does this serve as a warning against using per capita income as the sole measure of economic performance, it also underscores the rising importance of non-labor income sources in the region’s economy, and the relatively slow growth of labor income.



A Closer Look at Non-Labor Income

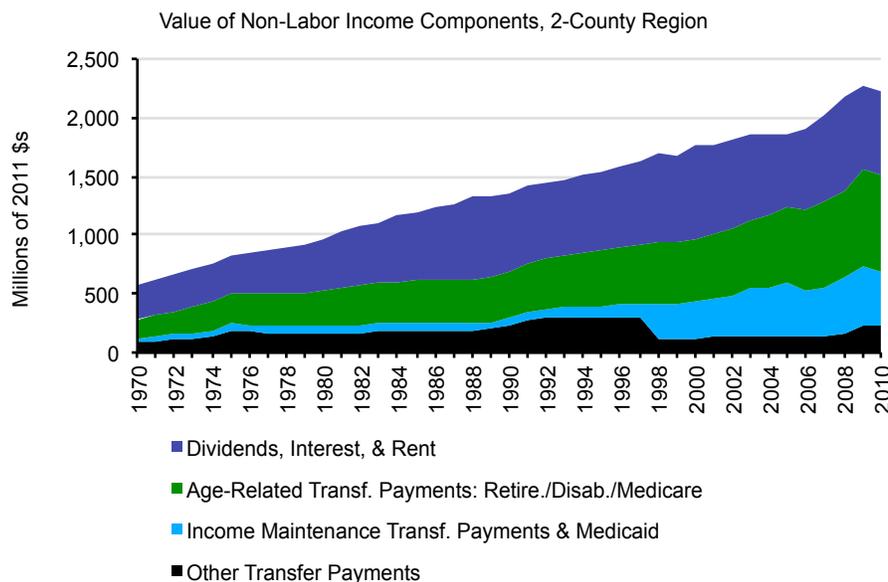
Non-labor income consists of dividends, interest and rent, and transfer payments. The table below shows the contribution of the different sub-categories of non-labor income for the two counties, the region (both counties aggregated), and the state.

In 2010, non-labor income was 39 percent of total personal income in the region, consisting of \$2.2 billion dollars. Of that, 32.3 percent (\$723 million, rounded) was from dividends, interest, and rent (also referred to as money earned from investments). This is the dark blue section in the figure below. The remainder, 67.7 percent (\$1.5 billion, rounded) was from transfer payments. The table delineates the components of Transfer Payments, and the figure reports the change in age-related transfer payments (green section), income maintenance payments (light blue section), and other (black section).¹⁰

The figure shows several important trends: first, a long-term rise in investment and age-related income, both of which can serve as important stimulants to other sectors of the economy, such as health care; and second, a concurrent rapid rise since the late 1990s of income maintenance benefits.¹¹

Percent of Total Non-Labor Income

	Piscataquis County, ME	Penobscot County, ME	Maine	County Region
Dividends, Interest, Rent	30.5%	32.6%	40.4%	32.3%
Total Transfer Payments	69.5%	67.4%	59.6%	67.7%
Government payments to individuals	68.2%	65.9%	58.3%	66.1%
Retirement & disability insurance benefits	25.2%	21.4%	20.2%	21.9%
Medical payments	28.6%	28.6%	25.5%	28.6%
Medicare	16.0%	14.9%	13.5%	15.0%
Medicaid	12.2%	13.3%	11.6%	13.1%
Military	0.3%	0.3%	0.3%	0.3%
Income maintenance benefits	7.2%	7.9%	6.3%	7.8%
Unemployment insurance benefits	2.5%	2.6%	2.3%	2.6%
Veterans benefit payments	3.9%	3.2%	2.5%	3.3%
All other gov't payments to individuals	0.5%	1.9%	1.2%	1.8%
Payments to nonprofit institutions	0.8%	0.9%	0.8%	0.9%
Business payments to individuals	0.3%	0.4%	0.3%	0.4%



By 2010, investment income (dividends, interest and rent) was 40 percent of all transfer payments and 13 percent of total personal income in the two-county region. The same year, age-related income (retirement and Medicare) was 37 percent of all transfer payments and 14 percent of total personal income. Income maintenance benefits, including Medicaid, were 21 percent of all non-labor income payments, and 8 percent of total personal income.

To put these numbers into perspective, in 2010 investment income in the region was twice the income earned from people working in the manufacturing sector, while age-related income was 2.3 times larger.¹²

The rapid and steady growth of non-labor income in the region can be explained by a number of factors that differ from one community to another:

- In communities that are growing and diversifying (e.g., Bangor), the growth of non-labor sources may be an indication of retirees and people with investment income moving to the area for a combination of available health care, affordable housing, and recreational, scenic, and cultural amenities.
- In communities with a growing retirement population and a shrinking labor force (e.g., Millinocket), the relative prominence of non-labor sources becomes more obvious and suggests that, by itself, non-labor income may not be a positive sign of growth and instead may simply mean that there is little else happening in the local economy.
- It is part of a national demographic trend as the Baby Boomers enter retirement age and move their residence for quality of life reasons. (Recall that from 2000 to 2011, in-migration contributed 70 percent of population growth for Penobscot County.)

As we discuss later in this report, the demographic trends behind the rapid rise in non-labor income have important implications for the possible impact of a new National Park and National Recreation Area. As demographer Bill Frey explains;

The phrase ‘demography is destiny’ was never more appropriate than when used to characterize the impending ‘age-wave’ tsunami that is about to hit America’s older population.

[It] is safe to predict that their consumer patterns, family choices and social and economic needs will differ sharply from senior proclivities of the past. After all, as this unique, postwar generation has plowed its way through the nation’s school systems, labor market, housing market and stock market, it has always broken the mold, determined to transform institutions, both public and private, in its path. Thus, there is no reason to expect that this generation will not shatter precedents with the same reckless abandon, as its members march, in large numbers, to seniorhood. This is especially the case when it comes to understanding how and where they will live; and their migration patterns—past, present and future, will be linked to their geographic spatial preferences and proclivities.¹³

The importance of amenities in attracting this demographic was reinforced by a recent 2009 study entitled *Baby Boom Migration and Its Impact on Rural America*, published by the Economic Research Service of the U.S. Department of Agriculture. It concluded:

Whether adjacent to big cities or less accessible, counties with desirable physical attributes—pleasant climates, mountains, beaches, lakes—are likely to increase their already high share of baby boomer migration.¹⁴

Employment Trends by Industry

The prospects of a new National Park and National Recreation Area are more easily understood in the context of how the region's employment base has changed in the last four decades.

The figures on the next page show the change in the structure of the region's economy in terms of employment in 1970, 1980, 1990, 2000, and 2010. In 1980 (when the economy was structured similar to 1970) the so-called "goods-producing"¹⁵ sectors (farming, mining, construction and manufacturing, which includes the majority of the forest products industry) represented 31 percent of all jobs in Penobscot and Piscataquis counties, while service-related industries (health care, finance, insurance, real estate, etc.) accounted for 50 percent of total jobs. The remaining 19 percent were in government. By 2000, services accounted for 64 percent of total jobs, and non-service sectors ("goods-producing") accounted for 20 percent. By 2010, services had grown to 69 percent of total, and non-services represented 14 percent of total jobs.¹⁶

The most striking trend during the last decades has been both the relative and absolute shrinking of the manufacturing sector, which contains the bulk of the forest products. In the two-county region, this sector shrank from 25 percent of total in 1970 (15,000 jobs) to 23 percent in 1980 (17,933 jobs), to 12 percent in 2000 (12,200 jobs), and 6 percent in 2010 (5,500 jobs).

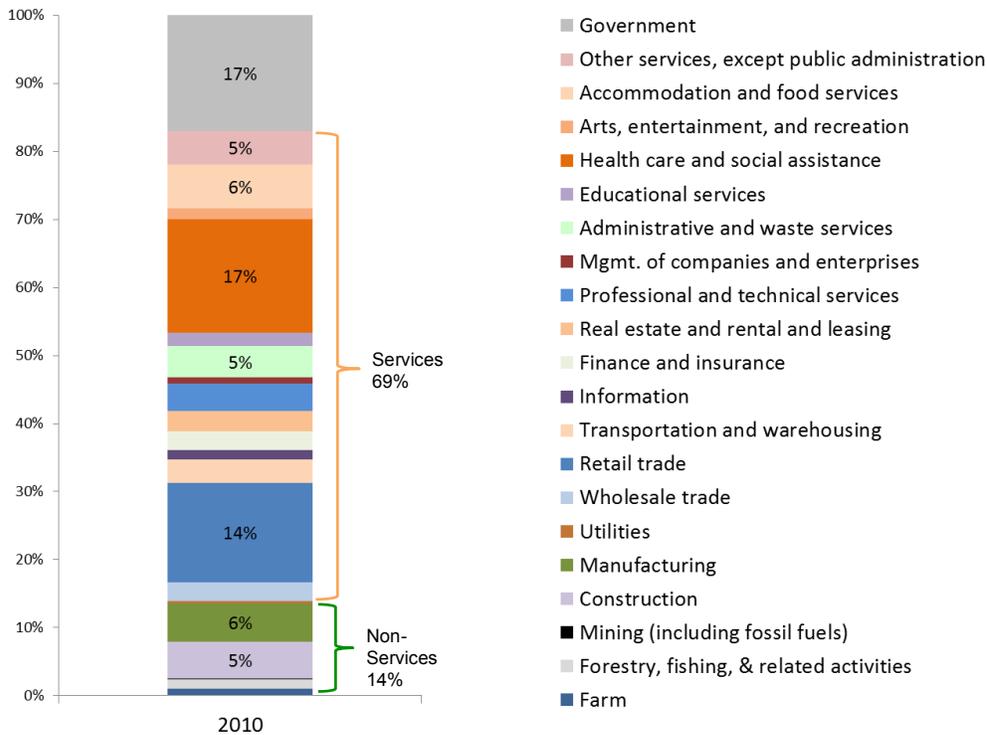
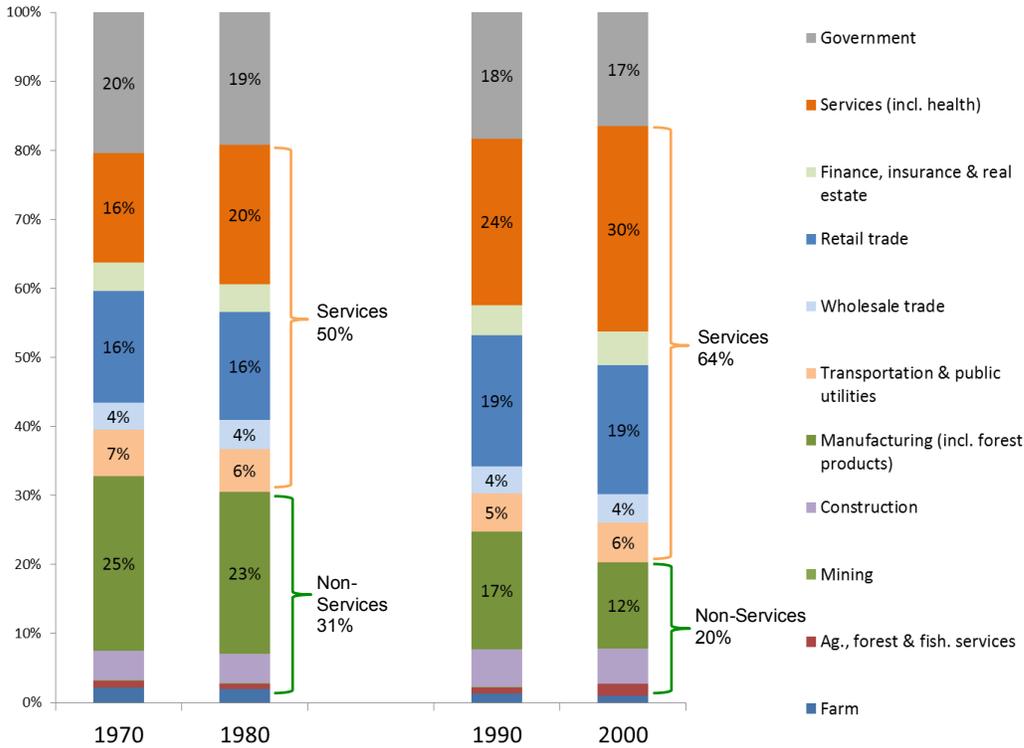
Trends in manufacturing are representative of trends in the forest products industry. The U.S. Department of Commerce provides details on the types of manufacturing jobs only in terms of personal income earned in these sectors, but it is reasonable to assume that the ratio of personal income earned in wood products compared to all manufacturing is similar in terms of employment. In 1970, the wood products sector "lumber and wood products manufacturing" and "paper and allied products manufacturing" represented 49 percent of all manufacturing in Penobscot County and 43 percent of all manufacturing in Piscataquis County. This ratio has not changed much over time. By 2010, 40 percent of all manufacturing in Penobscot County was in wood products, while 50 percent of all manufacturing in Piscataquis County was in wood products.¹⁷

The economy of the region has changed in a way that mirrors national trends, away from dependence on resource industries and towards higher reliance on services. From 1990 to 2010, more than 100 percent of net new jobs in the U.S. economy were created in the service sectors (38.5 million new service jobs), while non-service sectors lost 6.5 million jobs. The same trend has occurred in Maine. From 1990 to 2010, more than 100 percent of net new jobs were in services: Maine gained 99,690 net new jobs, of which 148,735 were in services, while non-service sectors lost 47,131 jobs. In rural Maine (i.e., non-metropolitan) the trend has been the same. During the same period, 24,629 net new jobs were created, of which 43,589 were in services, while non-service sectors lost 25,428 jobs.¹⁸

University of Southern Maine economist Charles Colgan points out that "by 2000 the Maine economy was largely indistinguishable from the U.S. economy in its structure." He also points out that this shift is reflected in the geography of Maine's economy, with "two Maines"—north and south.¹⁹

For an example of the north/south dichotomy, we explore later in this report the difference between the south end of Penobscot County, which includes the Bangor metropolitan area, and the more rural and relatively impoverished northern half of the county. Colgan reminds us that the "two Maines" could also be described as urban versus rural Maine, with many of the recent changes in the economy benefitting urban areas disproportionately. This has important implications for understanding the effect of new protected public land designations because they may benefit some parts of the region more than others, or else the timing of the benefits may be such that some communities are positioned to reap benefits sooner than others.

Jobs in 2-County Region by Industrial Sector (1970-2000 organized by SIC; 2010 organized by NAICS)



Before 2001, U.S. Department of Commerce used the Standard Industrial Classification (SIC) system to describe employment and income by industry. After that date, they began using the North American Industrial Classification System (NAICS), which offers a more detailed look at the various sectors of the economy and provides a finer level of disaggregation for “service-related” industries. Note: Manufacturing includes wood products and paper manufacturing.

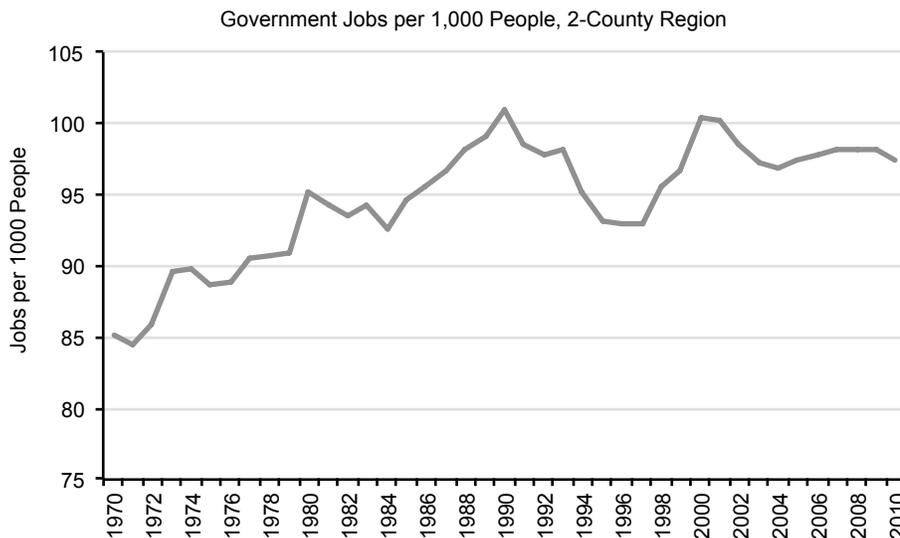
The Role of Government Jobs

The two-county region has a relatively higher dependence on government jobs, which have remained at approximately 17-20 percent of total employment in the last 40 years. By comparison, in 2010, government employment was around 14 percent of total in Maine and the U.S. Most of the government jobs in the region (88%) are in state and local government.²⁰

In spite of the overall shrinking relative number of government jobs (from 20% of total in 1970 to 17% in 2010), the size of government can best be described in relation to the size of the population, as shown in the figure below.

From 1970 to 1990, government jobs grew rapidly in relation to the region's population, and have recently constituted approximately 95-100 jobs in government for every 1,000 residents in the region. In 2010, there were 98 government jobs per 1,000 people in the two-county region. This is higher than the state, where in 2010 there were 84 government jobs per 1,000 people (down from 92 per 1,000 in 1990).

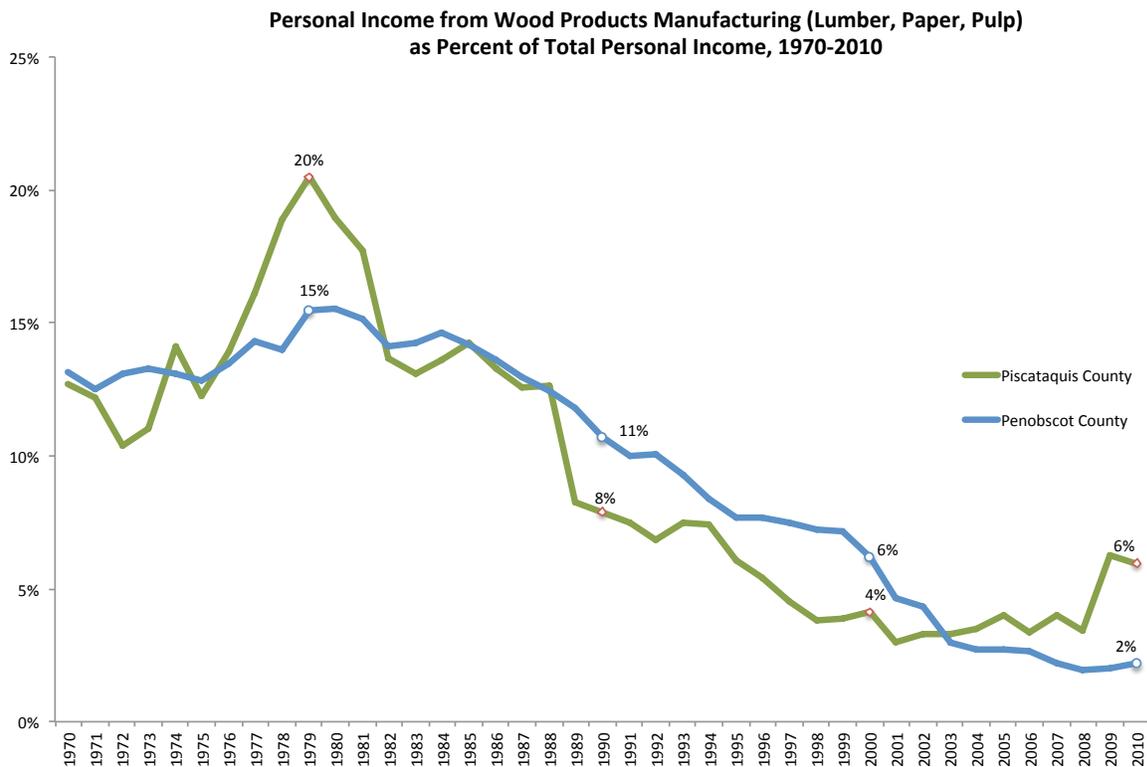
The companion report, *A Comparative Analysis of the Economies of Peer Counties to Penobscot and Piscataquis Counties, Maine with National Parks and National Recreation Areas*, shows that in similarly situated NP/NRAs around the country, one of the benefits of new public land designations is the creation of federal jobs with the National Park Service. As we show later in this report, federal government jobs in the region are relatively high-wage (average \$53,564 for the two-county region).



The Timber Industry

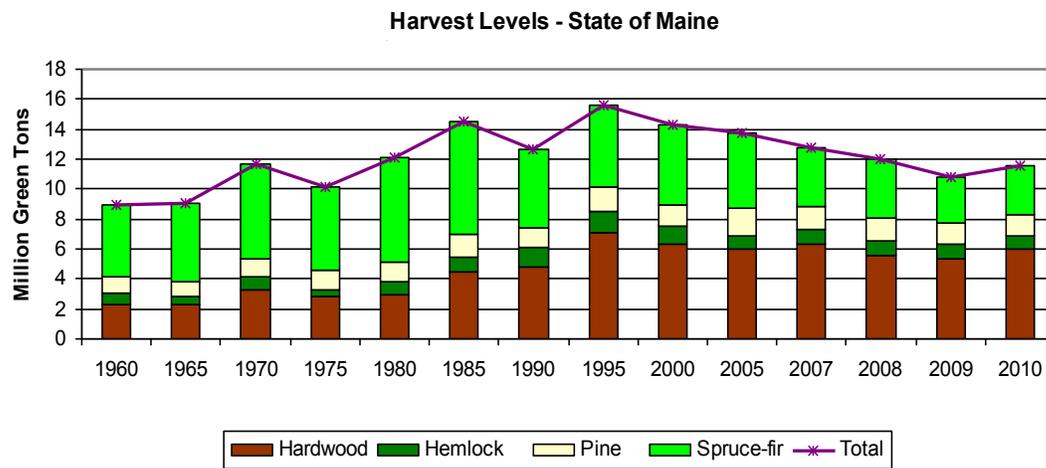
One of the most striking changes in the region's economy since 1970 is the relative decline of economic activity in the forest products industry. The figure below shows the long-term decline of the relative role of the timber industry in the two counties of the region, measured in terms of personal income earned from people employed in lumber and wood products manufacturing, and paper and allied products manufacturing. For the sake of understanding the region's economy, the forest products manufacturing sector is a sufficient indicator of long-term trends in the industry relative to the rest of the economy.

In 2010, income earned in these sectors was two percent of total personal income in Penobscot County and six percent of total in Piscataquis County. Region-wide, personal income earned in wood products and paper manufacturing declined from 16 percent in 1979, to 3 percent in 2010.²¹



The figure above uses manufacturing as illustrative of general trends in the forest products industry and is not a complete count of all personal income from this industry. For example, if forestry and logging are counted, in 2010, personal income earned in these sectors in the two-county region accounted for another one percent of total personal income.²² Adding wood products transportation would also increase the numbers slightly. In terms of employment, in 2010 wood products-related employment was 4 percent and 12 percent of total in Penobscot and Piscataquis counties, respectively. From 1998 to 2010, the two-county region lost 1,157 jobs in the wood products industry.²³

The timber industry in the two-county region is most easily understood in the context of long-term trends in Maine's timber industry. The figure below shows that timber harvests peaked in 1995, declined until 2009, and more recently are beginning to rise.²⁴



The rise of harvests until 1995 were due to a number of factors that include:²⁵

- A housing boom for most of that period and a concurrent expansion of spruce-fir and pine mills.
- The spruce-budworm epidemic that spread throughout Maine in previous decades, affecting millions of acres, and forcing or encouraging accelerated harvests from 1975 to 1985.
- Incentives by the State of Maine for new “biomass to energy” facilities that were built in the 1980s and 1990s.
- Wholesale divestiture of timberlands by forest products firms whose land and timber assets were undervalued on balance sheets. (This was the only way to “mark the assets to market” and stockholders clamored for this to happen).
- The rise of the institutional timber investment industry, which facilitated the sale of large tracts of timberland that were previously held by large industrial landowners and are now owned by Timber Investment Management Organizations (TIMOs), Real Estate Investment Trusts (REITs), and hedge funds. The new owners had incentives to harvest lands more aggressively and monetize “higher-and-better use” (HBU) lands than previous owners.

A number of additional factors help explain challenges facing timber workers, and help explain the decline of harvests after 1995. These include:

- The recession and the bursting of the housing bubble, which affected softwood sawmills. There were hundreds of small hardwood and softwood sawmills before 2000, and now there are about 30-50 small sawmills and less than a dozen large ones.
- Mechanization of logging operations and mills that has allowed harvesting and wood processing with fewer workers.
- Declining harvests on timberlands that had been heavily cut in prior decades.
- Wood prices became high enough in 2004/2005 that a number of mills went out of business.
- International competition, imports (20% of wood consumed in Maine in 2010 was imported),²⁶ and relatively cheap shipment costs have made hardwood mills in Maine less competitive. Many surviving mills have diversified into niche markets.

-
- A declining commercial timberland base as land is converted to non-forest uses. Owners seeking recreational and residential uses have taken smaller amounts of land out of production. These so-called “HBU sales” have been sought by many of the new owners in the investment sector who seek to monetize non-timber values from alternative land uses. This is driven by the demand for alternative uses of forestland and by the divestiture of timberland by integrated forest product companies (i.e., a decoupling of timberland from production facilities).
 - Lower demand for newsprint as we transition toward electronic media.
 - Old, poorly capitalized pulp and paper mills throughout Maine, several of which have closed permanently or shuttered major portions of their production capacity.

The effect of the reorganization of the wood products industry into TIMOs and REITs was recently summarized in the *Maine Policy Review*:

Such ownerships, while often focused on management and income from timber harvesting, have very different investment horizons than the vertically integrated forest landowner. Where the vertically integrated company owned land to feed mill investments that were expected to last 50 years or more, the new ownerships expect to own land for perhaps 10 to 15 years, capturing as much value as possible in that period of time and then turning the land over to a new owner, at, it is hoped, an appreciated price.²⁷

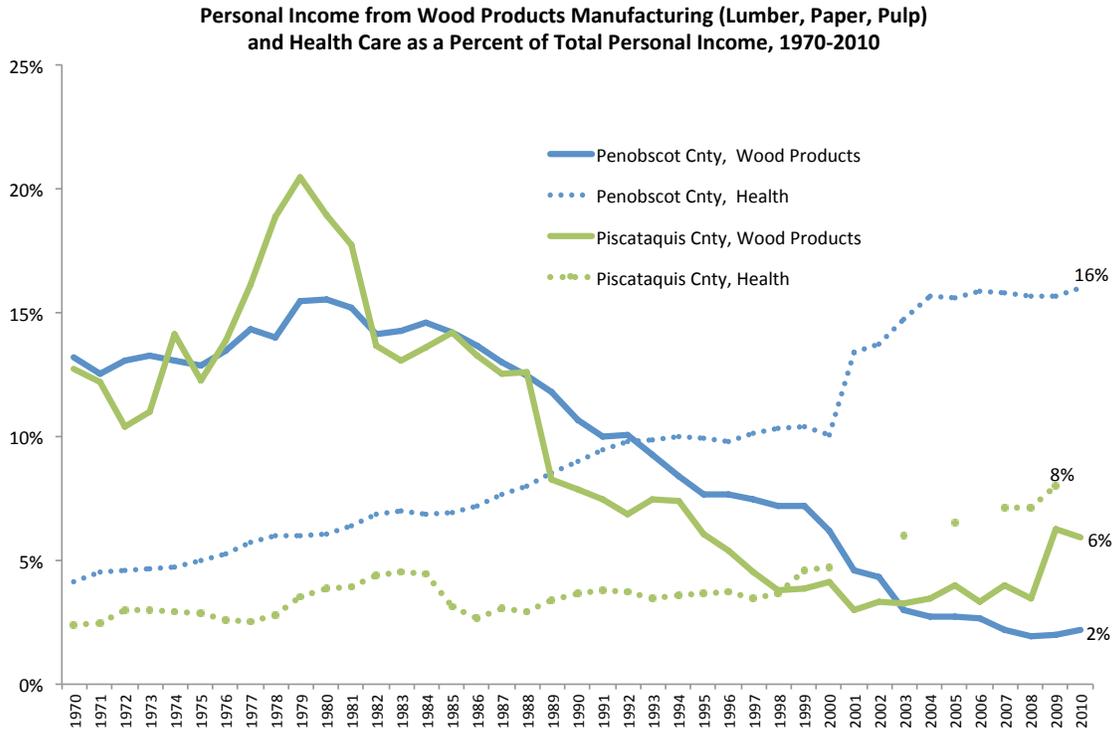
The result has been a significant reorganization of land ownership. From 1990 to 2005, the share of industry ownership fell from 60 percent to 15 percent (1.8 million acres were owned by industry, of which 1.2 million are owned by one Canadian company). In the meantime, investment firms increased their share tenfold, to more than 4.7 million acres.²⁸ As the authors of the *Maine Policy Review* point out:

The effect of these changes has been a paradigm shift. Whereas vertically integrated forest companies owned land almost solely to provide a steady supply of raw materials to their mills, non-industrial owners view forest products as only one of a myriad of choices to monetize their asset.²⁹

The combination of these forces led to a long-term decline in the relative size of the timber industry in Maine and in the local economy.

The Timber Industry in Perspective

To put the relative decline in perspective, the figure below compares personal income earned in wood products manufacturing in Penobscot and Piscataquis counties to personal income earned in the health care sector.³⁰



The figure is illustrative of the long-term shift in the region’s economy from a resource-based economy to one based on services. By 2010, the personal income earned in health care grew to 16 percent of total in Penobscot County, compared to 2 percent for wood products, and to approximately 8 percent of total in Piscataquis County, compared to 6 percent for wood products. By 2010, personal income earned in the health care sector in the region was 1.5 times the size of all personal income earned in the wood products industry.³¹

The Tourism Industry

Outdoor recreation is big business in Maine. The Outdoor Industry Association estimated that in 2006 the outdoor recreation economy supported 48,000 jobs in Maine, generated \$210 million in annual state tax revenue, and produced almost \$3 billion in retail sales and services, accounting for 7 percent of gross state product.³² The Maine North East State Foresters Association estimates that in 2005, forest-based recreation contributed more than 12,000 jobs and \$0.14 billion in payroll in Maine (for relative scale, in that same year they estimated that the forest-based manufacturing industry in Maine employed 19,614 people with an annual payroll of \$0.75 billion).³³

The proposed new National Park and National Recreation Area would be additions to an area that has a long-term history in outdoor recreation, a number of outstanding outdoor recreation opportunities, and a well-developed hospitality industry that includes hotels and motels, restaurants, guide and outfitting services, retail stores, cultural attractions, and more.

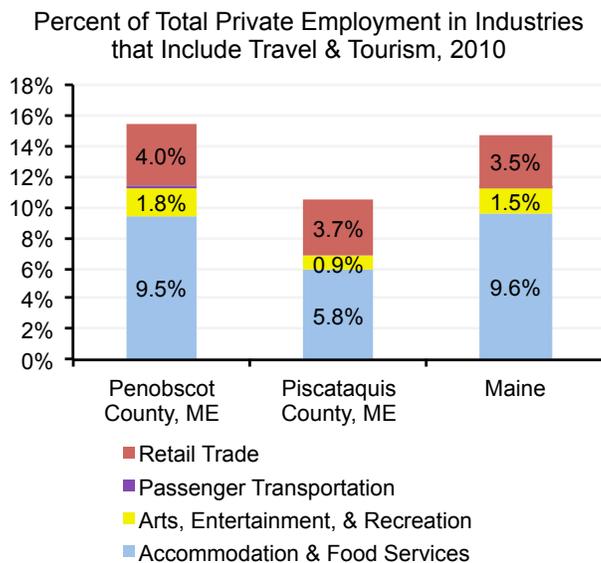
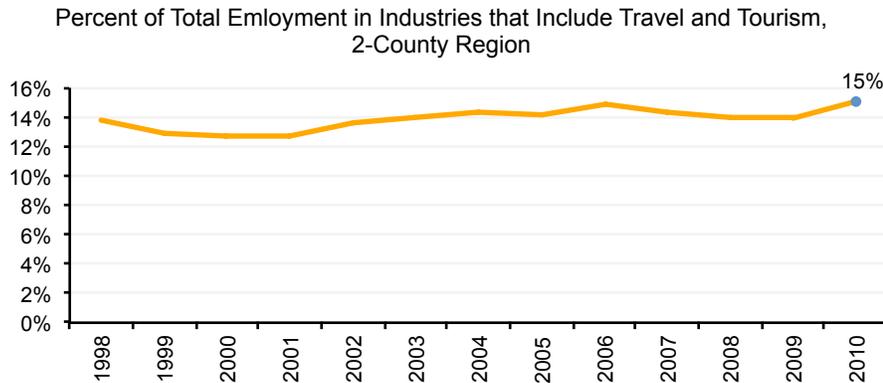
The Maine Office of Tourism refers to this area as the “Maine Highlands-Bangor-Katahdin-Moosehead Lake” region. It includes, among others, the Allagash Wilderness Waterway State Park, the 200,000-acre Baxter State Park, Lily Bay State Park, Debsconeag Lakes Wilderness Area, Peaks-Kenny State Park, Moosehead Lake, Mount Katahdin, the Appalachian Trail, the West Branch of the Penobscot River, and the Interconnected Trail System (ITS) snowmobile network. The Office of Tourism web site lists the following number of tourism-related businesses in the region that are within a 10-mile radius of Millinocket: accommodation and camping facilities (23 establishments); restaurants (10); shopping (6); outdoor recreation, sports and adventure (15); nature (9); sightseeing (5); and amusement parks (2). There are also four visitor information centers.³⁴

The tourism centerpiece of the region is Baxter State Park, which is managed primarily for camping and backcountry experiences. In 2008, the Maine State Planning Office estimated that visitors to Baxter State Park generated \$6.9 million in economic activity, resulting in 87 full-time jobs (not counting park employees) and \$2 million in household earnings. In 2008, there were 109,285 visitors, and in 2010, there were 115,763 visitors.³⁵

Tourism-Related Sectors in the Two-County Region

The size of the tourism and recreation sectors in Penobscot and Piscataquis counties is difficult to estimate because there is no single industrial classification for travel and tourism under the North American Industrial Classification System (NAICS). However, there are sectors in the local economy that, at least in part, provide goods and services to visitors to a local economy. These include components of retail trade; passenger transportation; art, entertainment and recreation; amusement and recreation; museums, parks, and historical sites; and eating and drinking establishments. These can serve as a proxy for tourism-related jobs in order to illustrate long-term trends and relative size.³⁶

The figures below show that, in 2010, travel and tourism-related industries constituted 15 percent of total jobs in the two-county region, unchanged in the last decade. These sectors also constituted 15 percent of all jobs in Maine. The bulk of the tourism-related jobs are in accommodation and food service, and in retail trade.³⁷



It is difficult to predict reliably the exact economic impact, in terms of dollars spent and jobs created, from the proposed new National Park and National Recreation Area. However, it is possible to review what the impact has been in other NP/NRAs around the country. The companion report, *A Comparative Analysis of the Economies of Peer Counties with National Parks and Recreation Areas to Penobscot and Piscataquis Counties, Maine*, describes the economic performance of 16 similar areas around the country that have NP/NRAs. It found that visitor spending and park employment at National Park and NRA peers created an average of more than 1,000 private and public sector jobs.

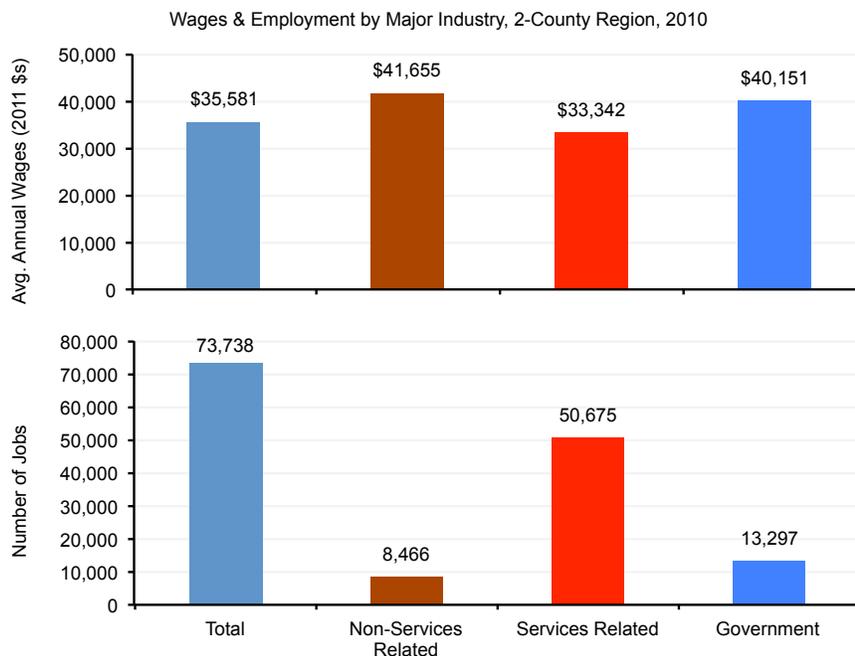
Wages

The shift to a service-based economy does not necessarily mean a shift to low-wage jobs. In Penobscot County in 2011, the average annual wages in wood products manufacturing was \$32,289, with 331 people employed, while the average annual wage in paper manufacturing was \$56,589, with 841 people employed. In contrast, “health and social assistance” in the county employed 13,636, with an average annual wage of \$43,920, on par with the mean wage in the wood products manufacturing industry.³⁸

During the same time, the average annual wages in wood products manufacturing in Piscataquis County were \$38,561 per year, with 152 people employed, while health and social assistance employed 956 people at an average annual wage of \$26,534. The difference in health care wage between the two counties is likely because the majority of the high-wage jobs in this sector occur in the Bangor area.

In 2011, there were 1,324 wood and paper manufacturing jobs in the two-county region, compared to 16,463 jobs in health care.³⁹ As Penobscot County illustrates, it is possible for those jobs to be relatively high-wage, though they may not exist in all communities.

On average, service industries (health, education, engineering, architecture, tourism and others) in the two-county region pay lower wages but employ more people (6 times as many) than the non-service industries (agriculture, construction, mining, and manufacturing).



Some high-wage service occupations exist. For example, in 2011 in Penobscot County (many likely in Bangor) 1,903 work in “professional and technical” occupations (including architects and engineers), earning more than \$46,000 per year. Another 1,000 work in information services (such as publishing and telecommunications), earning more than \$42,000 per year, and 311 work in computer systems design earning \$52,000 per year.⁴⁰

Together with the aforementioned relatively high wages in the health care sector, it is clear that some elements of a high-wage service economy already exist in the area (see table on page 24).

Government Wages

In 2010, government jobs represented 17 percent of total employment in the two-county region (compared to 14% in Maine and U.S.). Government jobs in the region pay on average \$38,000 per year, which is higher than the average wage for all sectors of \$32,000, but lower than manufacturing wages, at \$39,344. As shown in the table on the next page, the highest paying type of government job is in the federal government: \$61,297 in Penobscot County and \$45,831 per year in Piscataquis County (average \$53,564 for the region).⁴¹

Tourism Wages

As mentioned earlier, there is no single industrial classification code for tourism, but there are sectors that provide goods and services to visitors and these can serve as proxies for tourism. Travel and tourism-related industries constitute 14 percent of all jobs in the two-county region. The average annual wages in these sectors is \$15,881 in Penobscot County and \$19,004 in Piscataquis County in 2010 (an average of \$17,442 for the region).⁴² This estimate includes part-time and seasonal workers. For some people working in tourism, such as the owners of a lodge, and fishing and hunting guides, the wages may be substantially higher.

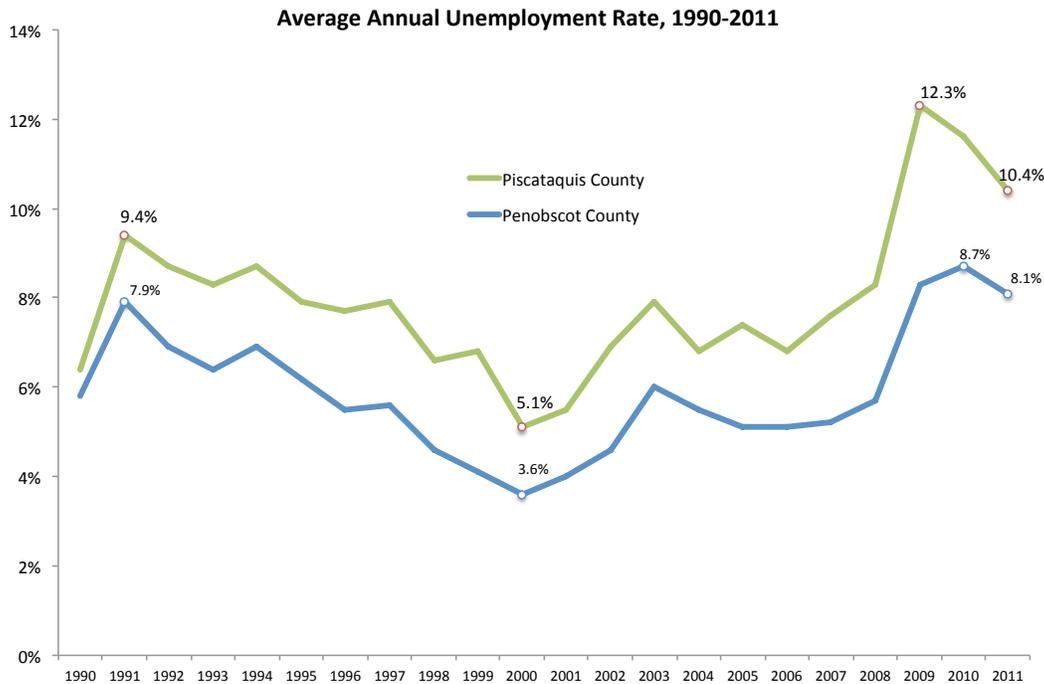
Average Annual Wages by Sector, 2011

2011	Penobscot County		Piscataquis County	
	Employment	Average Annual Wages	Employment	Average Annual Wages
Total - Private & Government	68,242	\$35,413	5,551	\$29,462
Total - Private	55,265	\$34,521	4,179	\$27,219
Goods-Producing	6,933	\$42,684	1,340	\$33,600
Natural Resources and Mining	828	\$40,585	98	\$40,390
Agriculture, Forestry, Fishing and Hunting	818	\$40,580	86	\$40,322
Mining, Quarrying, and Oil and Gas Extraction				
Construction	2,498	\$40,160	150	\$27,912
Manufacturing	3,607	\$44,914	1,093	\$33,774
Wood product manufacturing	331	\$32,289	152	\$38,561
Paper manufacturing	841	\$56,589		
Service-Providing	48,332	\$33,350	2,839	\$24,208
Trade, Transportation, and Utilities	16,376	\$28,991	951	\$25,633
Wholesale Trade	2,400	\$43,293	19	\$42,823
Retail Trade	11,334	\$23,606	839	\$23,019
Transportation and Warehousing	2,390	\$35,789	66	\$34,255
Utilities	251	\$70,632	28	\$71,790
Information	1,096	\$42,451	35	\$47,426
Finance and Insurance	1,628	\$47,923	76	\$28,270
Real Estate and Rental and Leasing	606	\$30,029	35	\$20,478
Professional and Technical Services	1,903	\$46,234	59	\$37,226
Management of Companies and Enterprises	811	\$53,200		
Administrative and Waste Services	3,319	\$28,443	206	\$23,213
Educational Services	1,038	\$29,847		
Health Care and Social Assistance	13,636	\$43,920	956	\$26,534
Arts, Entertainment, and Recreation	784	\$19,686	23	\$12,776
Accommodation and Food Services	5,346	\$14,443	363	\$13,159
Other Services, Except Public Administration	1,791	\$25,903	135	\$18,052
Total Government	12,977	\$39,209	1,372	\$36,297
Federal	1,292	\$61,297	53	\$45,831
State	5,076	\$39,905	8	\$38,466
Local	6,609	\$34,359	1,311	\$35,900

Note: employment figures from the Quarterly Census of Employment and Wages (QCEW) may differ from those reported by the Bureau of Economic Analysis (BEA) of the U.S. Department of Commerce because unlike BEA, QCEW figures do not include the self-employed. Blank spaces are as reported by QCEW.

Unemployment Rates

Throughout the 1990s the unemployment rate in Penobscot and Piscataquis counties dropped, reaching a low of 3.6 percent and 5.1 percent, respectively, in 2000. After 2000, the unemployment rate in both counties of the region began to climb, reaching a peak of 12.3 percent for Piscataquis County in 2009 and 8.7 percent in Penobscot County in 2010. Recently unemployment rates have begun to decline. By 2011, the unemployment rate for Penobscot County dropped to 8.1 percent, while that of Piscataquis County declined to 10.4 percent, still relatively high compared to the state (7.5%) and nation (8.2%). Most recently, by June of 2012 (not shown in the figure below) the unemployment rate of Penobscot County remained at 8.1 percent, while that of Piscataquis County declined further to 9.5 percent.⁴³



The unemployment rates for some communities are much higher than the county average reported in the above figure (see table below). For example, in June of 2012, East Millinocket and Millinocket had unemployment rates of more than 16 percent, down from the previous year (28% and 20%, respectively), but still high. In 2012, the towns of Patten, Bangor, and Dover-Foxcroft retained relatively low unemployment rates, close to the state average.⁴⁴

Unemployment Rate (June)

Town	2011	2012
Millinocket	20%	17%
East Millinocket	28%	16%
Patten	13%	7%
Bangor	7%	8%
Dover-Foxcroft	9%	9%
Maine	8%	7%

Other Indicators of Economic Performance

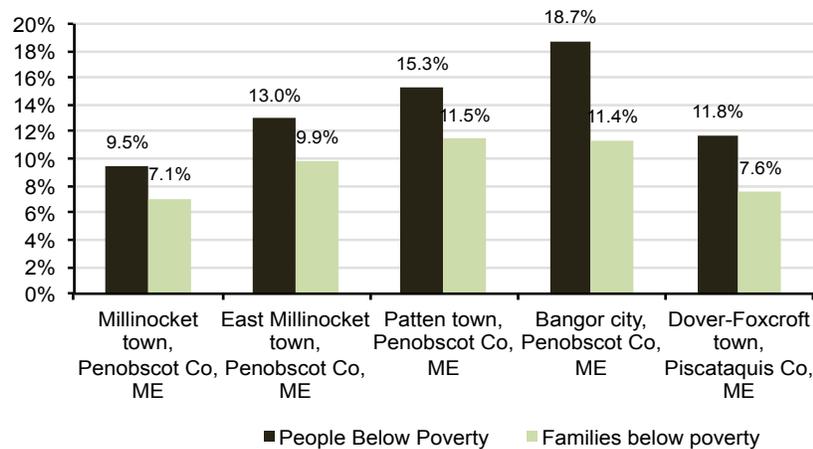
In 2010, both counties and individual communities had lower per capita income and median household income than the state. The lowest incomes were in East Millinocket and Patten, while the highest were in Bangor.⁴⁵

Household Income Distribution, 2010

	Piscataquis County, ME	Penobscot County, ME	Maine
Per Capita Income (2010 \$s)	\$19,870	\$22,977	\$25,385
Median Household Income (2010 \$s)	\$34,016	\$42,658	\$46,933

	Millinocket town, Penobscot Co, ME	East Millinocket town, Penobscot Co, ME	Patten town, Penobscot Co, ME	Bangor city, Penobscot Co, ME	Dover-Foxcroft town, Piscataquis Co, ME
Per Capita Income (2010 \$s)	\$20,414	\$19,835	\$19,825	\$24,179	\$20,830
Median Household Inc. (2010 \$s)	\$35,931	\$34,046	\$34,844	\$37,467	\$42,695

Individuals and Families Below Poverty, 2010*



* The data in this figure are calculated by ACS using annual surveys conducted during 2006-2010 and are representative of average characteristics during this period.

Even though Bangor has the highest average per capita and household income, it also has the highest percent of people below poverty, at 18.7 percent in 2010. In contrast, Maine has 12.6 percent of individuals and 8.4 percent of families below poverty, and for the U.S. the figures are 13.8 percent and 10.1 percent, respectively. In 2010, Millinocket and Dover-Foxcroft both had poverty levels below the state average.

One statistic of economic hardship is the percent of families that receive food stamps (or SNAP payments).⁴⁶ The proportion of families receiving these payments in the communities is as follows: 13.5 percent of families in Millinocket, 17.2 percent in East Millinocket, 14.5 percent in Patten, 12.3 percent in Dover-Foxcroft and, notably, 18.4 percent in Bangor. By comparison, the percent of families in Maine and the U.S. receiving these payments are 13.6 and 9.3 percent, respectively.

V. SOUTH VERSUS NORTH PENOBSCOT COUNTY

Countywide statistics in Penobscot County hide the differences between the rural north portion of the county and the Bangor metropolitan region to the south. As we discuss later, these differences may mean that some regions of the county may be better situated to benefit from a National Park and National Recreation Area than others.

While many published government statistics are not available at the sub-county level (particularly long-term trends in employment and personal income by sector and source), it is possible to use the American Community Survey to differentiate between the northern and southern portions of the county in terms of demographic and poverty statistics.⁴⁷

Key Measures of Economic Performance, North vs. South Penobscot County

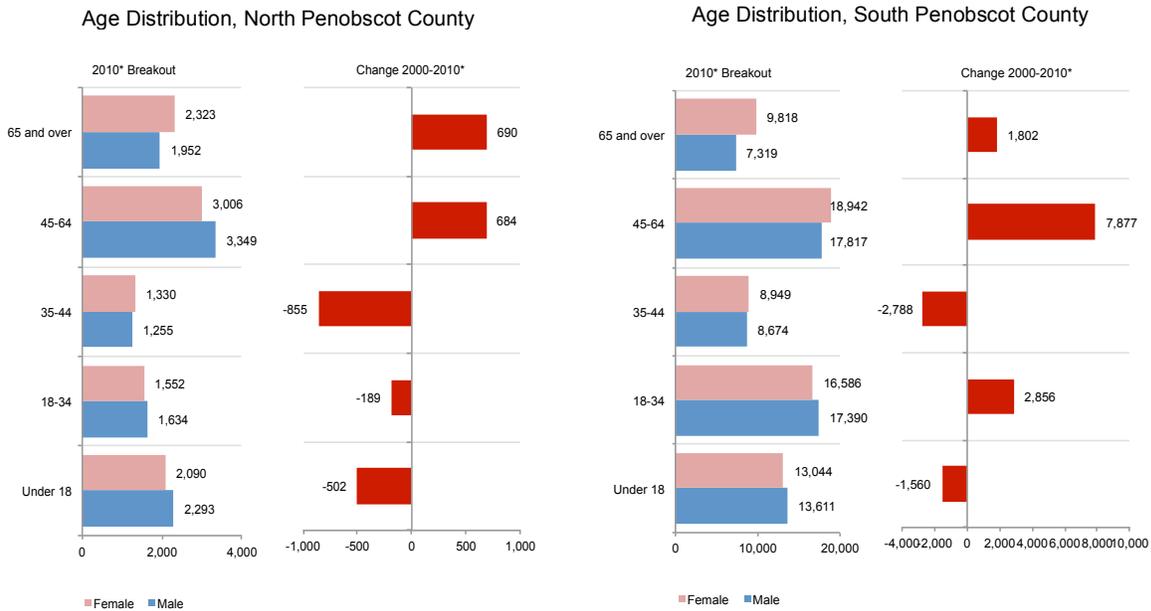
	North Penobscot County	South Penobscot County
Population (2010*)	20,784	132,150
Population (2000)	20,956	123,963
Population Change (2000-2010*)	-172	8,187
Population Percent Change (2000-2010*)	-1%	7%
% People Below Poverty	19%	15%
% Families below poverty	15%	9%
% of Households Receiving Earnings, by Source, 2010:		
Labor earnings	64%	77%
Social Security (SS)	43%	29%
Retirement income	21%	17%
Supplemental Security Income (SSI)	6%	6%
Cash public assistance income	8%	6%
Food Stamp/SNAP	19%	15%
% with Bachelors degree or higher	12%	25%

The data show a clear distinction between north and south Penobscot County. The south has six times as many people and is growing, while the north is sparsely populated and losing population. The north also has more individuals and families living below the poverty level.⁴⁸

In the south a higher percentage of families derive their income from labor, while in the north a higher percentage derive income from Social Security and Retirement. This is consistent with a relatively older population in the north. As the age-distribution figures on next page show, north Penobscot county is losing its younger population.

The north also has a higher percentage of families who receive assistance payments (Supplemental Social Security, Cash public assistance income, and Food Stamps). Compared to the north, the southern end of the county is also more educated: 25 percent of the adult population has a Bachelors degree or higher, compared to 12 percent in the north.

The figures below show that north Penobscot County is aging, with 21 percent over the age of 65, and no net gain in age groups below 45 years old between 2000 and 2010. In contrast, the south half of the county has 13 percent of the population over the age of 65, and is gaining both young adults and Baby Boomers.



* The data in this figure are calculated by ACS using annual surveys conducted during 2006-2010 and are representative of average characteristics during this period.



The previous sections described the demographic and economic trends in the two-county region where creation of a National Park and National Recreation Area is being considered. Region-wide, there has been a significant shift in the structure of the economy, away from high dependence on the forest products industry and towards a reliance on service-based sectors. The latter include relatively high-wage components such as health care and professional and technical services, as well as lower-wage jobs in retail trade, and food and accommodation services, among others. Throughout the previous decades, the travel and tourism sectors and government employment have remained a steady component of the economy.

Although there is overall growth at the county and regional levels, there are significant differences between communities, particularly between the more rural, aging, and relatively impoverished north, and the younger, more prosperous south. In some communities, the unemployment rate remains persistently high.

In the next section, we explore the possible benefits of new land designations and compare these to potential opportunity costs in terms of timber jobs, recreational opportunities, and tax collections. We follow with a discussion of the prospects for using an NP/NRA as an economic development strategy.

VI. THE POTENTIAL OPPORTUNITY COSTS AND BENEFITS OF A NEW NATIONAL PARK AND NATIONAL RECREATION AREA

Establishment of a National Park and National Recreation Area has the potential to diversify the economy and stimulate growth. The first rule of economic development should be similar to the Hippocratic oath traditionally taken by doctors, which is first to cause no harm. Accordingly, in this section, we analyze the opportunity cost of these possible new designations in terms of potential impacts on the timber industry and local and state taxes. We also note the possible impacts on existing tourism and recreation. We contrast these possible costs to the potential benefits.

The Timber Opportunity Cost of a New National Park and National Recreation Area

If the 150,000 acres of private land for the proposed NP/NRA were available for timber harvesting, then the proposed new designations could be seen as an opportunity cost to the timber industry (i.e., by not harvesting the land, timber jobs would not be created).

To estimate the number of timber jobs that would not be created if the land were not harvested, we contacted Maine timber experts at the James W. Sewall Company of Old Town, who currently manage most of the proposed land on behalf of Elliotsville Plantation, Inc. Their calculations indicate that the land in question is 80 percent forested (120,000 acres), capable of producing, at most 120,000 tons per year of green fiber (for perspective, Maine's forest products industry consumed 15.4 million green ton equivalents in 2010).⁴⁹

Timber Jobs: Harvesting 120,000 tons per year of green fiber on a sustainable basis would employ up to 15 people working in the woods (loggers, operators of harvesters, skidders, delimiters, etc.), plus another six supporting jobs (dump truck operator, excavator, grade operator, etc.) over a 40-45 week period. This means that if the land were available for timber harvesting, at most 21 workers would be needed to bring 120,000 tons of wood per year to the forest processing sector (the mills).⁵⁰ These would most likely be local jobs.

Mill Jobs: The wood harvested would travel to mills throughout the state and it is unlikely any new mill jobs would be created because the additional 120,000 tons of wood represents less than one percent of Maine's annual timber utilization (15.4 million green ton equivalents in 2010).⁵¹

Indirect Jobs: Additional jobs would be created when the 21 local woods workers spend money in their communities, creating a multiplier effect. According to a 2007 *Forest Facts* publication of the Maine Forest Products Council, for every one person employed in "logging and forest management" there are an additional 1.39 jobs in other sectors of the economy. Using this ratio, 21 direct jobs resulting from harvesting 120,000 tons per year would potentially yield an additional 29 jobs in other sectors, for a total of 50 jobs.⁵²

The Opportunity Cost to Existing Tourism and Recreation

Discussions with local citizens and with one of the economists who reviewed a draft of this report reveal a concern that a new National Park may potentially harm existing recreational opportunities. For some long-term residents a National Park (although not the adjoining National Recreation Area) could be seen as a restriction on activities (e.g., hunting) that they have traditionally enjoyed on the Elliotsville Plantation lands. As was shown earlier in this report, there are numerous other recreational opportunities in the "Maine Highlands-Bangor-Katahdin-Moosehead Lake" region where traditional uses, such as motorized recreation and hunting, are allowed. Depending on how a National Park were developed, it

could also create new amenities, such as paved scenic drives, visitor centers, retail shops, restaurants, and higher-end overnight accommodations (in contrast to the camping-centric Baxter State Park).

Changes in Tax Revenues

In this section, we analyze the potential effect of a new National Park and recreation area on local and state taxes. The new National Park is proposed to be 75,000 acres in size and the adjoining National Recreation Area is proposed at another 75,000 acres, for a maximum combined size of 150,000 acres. Both areas would be entirely within Penobscot County, so the analysis that follows considers the potential effect of a change in ownership, from private to federal, to taxes collected for Penobscot County and the state of Maine.

If the land were conveyed to the National Park Service, private property taxes would no longer accrue to local and state governments. Instead, the Department of Interior would make Payments in Lieu of Taxes (PILT) to the Penobscot County government. PILT is a per-acre payment authorized by Congress to compensate local governments for the non-taxable status of federal lands. PILT would be paid to the county each year once the NP/NRA were established.⁵³

Currently, all of the private land is located in the Unorganized Territories (UT) within Penobscot County. The Unorganized Territories “is that area of Maine having no local, incorporated municipal government. Duties related to providing services and property tax administration in the UT are shared among various State agencies and County government.”⁵⁴ Because PILT is generally paid to local governments, we assume for the purpose of this analysis that the Penobscot County government would receive the full PILT entitlement payment.⁵⁵ We make this assumption in order to understand the relative scale of PILT payments.

PILT payments are based on the acreage of land in the NP/NRA. In the first five years, Penobscot County would also receive a bonus payment equal to current property taxes paid for each acre added to the proposed National Park (but not for acres included in a proposed National Recreation Area).⁵⁶

If private land were conveyed to the National Park Service, PILT payments would significantly exceed current property taxes to the county. These changes are explained in the four following tables.

Changes in Taxes Collected on Private Land

The table below shows current tax payments from 150,000 acres of private lands East of Baxter State Park, including Elliotsville Plantation, Inc.’s land and other adjacent land. Payments from these lands total \$195,476 per year, at an average rate of \$1.30 per acre.⁵⁷

Current Property Tax Payments from Proposed National Park Acres

Potential Future Designations of Private Land	Total Acres of Private Land (Currently)	2012 Net Valuation	2012 Total Property Tax	Commercial Forest Excise Tax	Property Tax to County	Property Tax to State Education	Average Per Acre Tax
National Park	75,000	\$9,469,215	\$86,143	\$22,800	\$34,089	\$34,089	\$1.15
National Rec. Area	75,000	\$12,326,214	\$109,334	\$22,796	\$44,374	\$44,374	\$1.46
Total	150,000	\$21,795,429	\$195,476	\$45,596	\$78,464	\$78,464	\$1.30

Of the various taxes currently collected, only a portion goes to the Penobscot County government. The Commercial Forest Excise Tax goes to the state’s Department of Conservation. Property Tax to State Education goes to the State General Fund. Penobscot County currently receives \$78,464 per year in property taxes from the 150,000 acres.

The table below shows that if 150,000 acres of private land were transferred to the National Park Service, Penobscot County would be eligible for PILT payments that would total \$370,500 per year, at an average rate of \$2.47 per acre.⁵⁸

Estimated PILT Payments to Penobscot County

Entitlement Acres	Full Entitlement Amount (Entitlement Acres * \$2.47 per acre)	Prior Year Payments	Population Threshold	Population Ceiling Payment	Alternative A Payment (Entitlement Amount - Prior Year Payment)	Alternative B "Floor" Payment (Entitlement Acres * \$0.34 per acre)	Estimated Payment to County (Greater of Alt. A and Alt. B)	Average Per Acre PILT Payment
150,000	\$370,500	\$0	50,000	\$3,324,500	\$370,500	\$51,000	\$370,500	\$2.47

In addition to the projected PILT payment, Penobscot County would receive a bonus payment for all National Park acres equal to current property taxes paid. These payments would be made for the first five years after the establishment of the park.⁵⁹

The table below shows that the county would receive an *additional* \$34,089 for each of the first five years. When combined with PILT, the county would receive a combined payment of \$404,589 for the first five years, at an average rate of \$2.70 per acre.

National Park Bonus Payment to Penobscot County

National Park Acres	Property Taxes Paid to County Government	National Park Bonus Payment (First 5 Years)	Combined Payment First 5 Years (PILT plus National Park Bonus)	Combined Average Per Acre Payment (PILT plus National Park Bonus)
75,000	34,089	\$34,089	\$404,589	\$2.70

After the five-year bonus period expires, the county would receive \$370,500 per year (this amount would increase with inflation but is subject to congressional appropriations). This is a 90 percent increase over the \$195,476 in taxes the county currently receives from these lands.

Changes in Annual Distribution by Tax Collecting Entity

While current property taxes from private land accrue to the state and local governments, PILT would only accrue to the Penobscot County government. The table below shows the three units of government that receive tax revenues, the types of taxes they collect and what these may be used for, and how a transfer of private lands to the National Park Service would affect each unit's annual tax collections.

Distribution of Current Property Tax Payments and Fiscal Change for Receiving Governments

Unit of Government Receiving Tax	Specific Tax	Purpose of Tax	Current Amount	Future PILT Payment (1st 5 years, incl. bonus)	Difference
Penobscot County	Property Tax to County	County Government Services	\$78,464	\$404,589	\$326,126
Department of Conservation	Commercial Forest Excise Tax	Fire Prevention in Unorganized Territories	\$45,596	\$0	-\$45,596
State General Fund	Property Tax to State Education	Education in Unorganized Territories	\$78,464	\$0	-\$78,464

In summary, there would be the following changes in distribution of taxes:

- *Penobscot County*: the county would see an increase of \$326,126 per year. The increase in revenue would amount to 1.9 percent of total revenue the county received in FY 2011 (\$16.995 million).⁶⁰
- *Department of Conservation*: the Commercial Forest Excise Tax is imposed on landowners of more than 500 acres of commercial forestland to partially offset the cost of forest fire protection expenditures by the Department of Conservation. These funds would not be replaced by PILT, meaning the Department of Conservation, under current Maine law, would see a decline of \$45,596. This would represent 1.4 percent of the current statewide Department of Conservation budget dedicated to forest fire protection services.⁶¹
- *State General Fund*: funding for education services in the Unorganized Territories could be affected by a transfer of land from a private owner to the federal government. Property taxes to state education would not be compensated by PILT, meaning that under current Maine law the state General Fund would see a decline of \$78,464. This would represent a 0.6 percent decrease in total state funding (\$12.74 million in FY2011) for educational services.⁶²

The Future of the PILT Program

PILT has been fully funded by Congress for the last six years, but the program has not been fully funded in the past. In order for Penobscot County to receive future payments at least equal to current property tax payments, PILT will have to be funded by Congress at least 53 percent of the full entitlement amount after the first five years of designation.

Potential Benefits of a New National Park and National Recreation Area

A new National Park and National Recreation Area could also bring benefits to the region. A succinct list of potential benefits includes:

1. Growth of population, employment, real personal income, diversification of the economy, and jobs resulting from National Park employment and expenditures by visitors.

The companion report, *A Comparative Analysis of the Economies of Peer Counties with National Parks and Recreation Areas to Penobscot and Piscataquis Counties, Maine*, provides a review of peer areas around the country, describing the economic performance of similar areas that have NP/NRAs.

To estimate jobs that could potentially be created by a new National Park and NRA, we evaluated National Park Service data for nine of the ten National Park peers, including four that also have NRAs nearby.⁶³ Spending by visitors in the local economy resulted, on average, in 839 local private sector jobs. These park units also directly employed, on average, 216 National Park Service workers and contractors. The combined average private and public sector employment related to these parks was 1,055 jobs.⁶⁴

Another way to estimate the potential jobs impact is to assume that a new National Park in the Katahdin Region would capture a percentage of the 2.5 million annual visitors to nearby Acadia National Park. If the new park captures 15 percent of the visitation to Acadia National Park (375,600 visitors) and visitor spending is typical of what it is in similar National Parks (\$56/day), the new park would potentially create 451 new private sector jobs.⁶⁵ The National Park Service also would create additional public sector jobs.

NP/NRAs are also associated with economic diversification. The companion report shows that the economic structure of the NP/NRA units showed rapid growth in relatively high-wage service industries such as health care and professional and technical services, in spite of losses in construction and manufacturing and other goods-producing sectors.

2. Increased taxes.

Expenditures by visitors to the NP/NRA would generate sales taxes, and new migrants who buy property will generate new property taxes.

3. Attraction of a younger population.

If the new land designations stimulated growth, gateway communities like Millinocket may be able to attract younger workers, as small business owners and workers in the tourism industry, and elsewhere, including fast-growing industries, such as health care.

4. New recreation opportunities for visitors and local residents on publicly owned land.

Hunting, fishing, snowmobiling and other activities traditionally enjoyed by area residents generally are allowed in National Recreation Areas. In addition, there are opportunities in a NP/NRA for a number of other activities, such as scenic driving, bird watching, hiking, camping, white water rafting, kayaking, canoeing, mountain biking, mountaineering, and cross country and backcountry skiing.

5. Protection of natural ecosystems.

The lands in question contain a wide diversity of flora and fauna, as well as rivers, streams, lakes and ponds. They provide habitat for wildlife, including moose and black bears, which are critical to the hunting economy. The lands could also help protect late successional forests, which are underrepresented in Maine.⁶⁶

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The following Discussion section offers a number of ways to think about how the region could potentially capitalize on new protected public land designations.

VII. DISCUSSION

In previous sections, we set the stage for a discussion of the possible economic impact of creating a National Park and National Recreation Area on lands East of Baxter State Park. We showed that the economy of the two-county region has been growing and diversifying, but with much of the activity centered around Bangor, and with towns like Millinocket in need of a new development strategy. In this section, we explore whether and how the region might benefit from a new NP/NRA. We place this discussion in the context of rural development challenges and opportunities as described by a number of prominent Maine economists.

National Parks and National Recreation Areas as an Economic Development Strategy

Whether a NP/NRA would stimulate the economy of the region as a whole, and potential gateway communities like Millinocket and Patten in particular, depends on a number of factors.

Economist David Vail of Bowdoin College points out that a number of important forces will make future rural economic development in Maine different from the past. Global competition has eroded profit margins for commodity producers. Fuel prices have risen, making transportation to remote rural areas more expensive. Rural areas suffer from relatively higher telecommunications and electricity costs. They also have experienced a shrinking tax base as industry and population decline, making public infrastructure more difficult to maintain.⁶⁷

With these challenges, what are the opportunities for capitalizing on new nature and recreation-oriented land designations?

There is no silver bullet for stimulating rural economies in Maine. The idea of a combined NP/NRA would need to be part of a larger rural economic development strategy that includes components like investment in education, and transportation and telecommunications infrastructure. In this broader context, any strategy for the region will benefit from addressing these questions:

- What is the region's competitive advantage in today's globally competitive service-based economy? How can the timber industry remain an essential part of the mix of a more diversified economy?
- Can recreation, scenic, and environmental amenities help lure higher-wage service workers to live in gateway communities like Millinocket?
- While "amenity migration" is not a new phenomenon in Maine, could a new NP/NRA successfully compete with or complement coastal Maine?
- Can the region promote a new brand of high-quality tourism?
- How will the region compete to capture the rapid growth related to retiring Baby Boomers?

University of Maine economist Lloyd Irland, who specializes in analyzing and describing trends in the timber sector, has pointed out that timber employment in the state hit its peak in the mid-1950s, and that today there is little Maine can do to counter the global forces that affect this industry. Yet, Irland does not believe that tourism, with or without a National Park, can replace lost timber jobs.⁶⁸ There is no doubt that he is correct that low-wage, seasonal tourism jobs cannot replace family-wage jobs in manufacturing. Fortunately, this is not the choice facing the region today. In the discussion that follows, we explore a

number of strategies that community leaders may wish to employ if they choose to make use of new protected public land designations.

Determine the Region's Competitive Advantage

The two-county region has for a long time had a competitive advantage in the timber industry; but, as Federal Reserve Bank economist Mark Drabenstott points out, “if you want to stay in the commodity business, globalization essentially gives you one imperative, and that is that you must be a low-cost producer.”⁶⁹ Maine economists Charles Colgan and Richard Barringer of the University of Southern Maine agree and note that “Maine will no longer be a low-cost producer of a wide array of commodity products that are sold in national and global markets on the basis of low price.” Rather, the future of Maine’s resource industries lies, according to the authors, in specialized products within distinct market niches.⁷⁰

The challenge for the region is how to add to the historic economic base of timber in a way that provides diversity and stability, and capitalizes on economic opportunities. These include growing, harvesting, and processing trees, but could also include in the mix other economic sectors that are closely tied to the changing nature of goods production, shifting consumer preferences, and large-scale demographic trends. For the region, tourism and services, especially health care, will be an important part of the new mix of industries. As this report has shown, these service sectors have for a long time been an important part of the region’s economy. In a 2007 report entitled *Health Care and Tourism: A Lead Sector Strategy for Rural Maine*, the authors concluded:

A review of rural development initiatives over the past three decades in Maine shows that there have been boosts to various parts of the rural economy, but there has not been a comprehensive or persistent rural development policy. Given the steadily growing importance of the service sector economy, such a strategy should lead with health care and tourism.⁷¹

As various authors in the report point out, tourism and health care, like the timber industry, are “export” sectors because they bring outside money to the local economy. In tourism, this is most obvious, but what may be less known is the degree to which the health care sector relies on outside dollars. Medicare payments provide a good example of “export dollars” because these come from the federal government.⁷² For perspective, in 2010 Medicare payments brought in \$335 million to the two-county region, equivalent to earnings by people employed in the manufacturing sector.⁷³

Yet, tourism and health care are not the only options. Also important is the attraction of people and businesses for quality of life reasons. In the same report, Charles Colgan and Richard Barringer offer ideas on what has worked, and what has not in Maine’s rural development policies.⁷⁴ Examples of ideas that have worked well include:

- Promote quality of place: A recent Brookings Institution report on Maine has pointed out, “quality of place is important to investors, residents, and visitors alike, and must be safeguarded.”⁷⁵
- Attract entrepreneurs: “... entrepreneurs both local and from away are assessing local comparative advantage, taking risks, building new companies, and making a mark in communities that offer their support. Successful or not, they need support and encouragement along the way.”⁷⁶

The region may be able to capitalize on a new NP/NRA—as part of a larger rural economic diversification strategy—by paying careful attention to the advice given by Maine economists and by closely following several important national trends. Among these are:

- Patterns of migration and the movement of entrepreneurs to areas with a high quality of life,
- The growth of service sectors,
- The development of niche marketing in tourism, and
- Demographic trends, such as the aging and retiring of the Baby Boomer generation, and the concurrent growth of the health care sector.

Attract Migrants and Higher-Wage Service Workers with Scenic and Recreational Amenities

One option for the region, and in particular for towns like Millinocket, is to attract amenity migrants. Amenity migration refers to the phenomenon of people moving to live and work in areas of high natural amenities.⁷⁷ Modern telecommunications and efficient delivery services such as FedEx and UPS have made it possible for some occupations, like architecture, engineering, and software development, to move to rural areas. Sometimes entire companies—so called “footloose” because they are location independent—can be enticed to move to an area in large part for quality of life reasons that include scenic, recreational, and cultural amenities. This trend is occurring throughout the U.S. and in other parts of the world, such as the European Alps, Norway, New Zealand, Argentina, and elsewhere.⁷⁸

A growing body of economic development literature has found that while protected public lands are positively associated with economic growth, environmental and recreational amenities by themselves are often not enough to ensure growth.⁷⁹ Also needed is a nearby airport with daily commercial service to larger population centers so that workers can more easily visit in-person with clients, suppliers, and colleagues.⁸⁰ Fortunately, Bangor International Airport can be reached in an hour and a half from Millinocket via Interstate Highway 95.

The challenge for the region will be to attract the “footloose” high-wage service workers to its rural areas, and a new NP/NRA may help attract this form of development. A National Park designation could “put the region on the map,” and by doing so signify that it is a special, protected place. This may attract amenity migrants, who in turn stimulate other sectors of the economy, such as construction, health care, retail trade and others. For communities like Millinocket, it would be important to have in place the qualities—transportation and telecommunications infrastructure, schools, health care facilities, community business attitude, affordable housing, quality of life, and recreational amenities—needed to attract these types of workers.

Even with nearby amenities, a new NP/NRA, and an airport relatively nearby, it is not clear whether this form of development would occur right away. As David Vail points out, there is some reason for skepticism that this may occur in the region:

There is a chicken and egg dilemma to attract mobile entrepreneurs and highly skilled young people to remote places. Prospective investors typically look for a pool of appropriately skilled workers and often a critical mass of related businesses before they commit to a new location. But skilled workers are reluctant to risk settling in – or returning to – rural locations that do not already offer quality jobs.⁸¹

Amenity migration is not a new phenomenon in Maine. According to Maine economists Charles Colgan and Richard Barringer, this form of amenity-based development is well established along coastal Maine and in Bangor, and could also occur as well in rural communities like Millinocket if they can position

themselves as a lower-cost alternative to the coast, where in-migration has significantly driven up land prices.⁸² This may be one of the competitive advantages of the region, but it may also take time to develop.

Capitalize on Demographic Trends

As the Baby Boomer generation enters retirement age, many will be looking for relatively affordable places to live, where there are also health care facilities and scenic and recreational amenities. Investment and retirement payments are already a significant part of the region's economy, and the health care industry, with relatively high wages, has grown steadily to become one of the most significant sectors of the economy. This trend may prove to be an advantage for rural communities in the region, if they can position themselves to capture the so-called "age-wave tsunami."

Kremmling, Colorado, serves as a good example. In 1991, the town's largest employer, the Louisiana Pacific wafer board plant, closed its doors permanently, affecting about one third of the economic base of the community. The town produced an action plan focused on "sustainable and diversified business development, which is also environmentally sound."⁸³ As part of the plan, the community helped develop a health care facility, which at first was aimed at an aging local population, and soon became a source for in-migration of retirees looking for a rural community with affordable health care. While not a replacement entirely for the lost mill, it is part of the community's efforts to diversify by capturing lucrative retirement dollars that lead to relatively high-wage health care positions.

The challenge for the rural portion of the Penobscot-Piscataquis region will be to attract the higher-wage components of the health care sector. As Charles Colgan and David Hartley have pointed out, the role of health care in rural Maine is a two-edged sword:

On one hand it has played an absolutely critical role in providing what job growth in the region has occurred. It is the disproportionately rapid growth in health care that has been the key to offsetting much of the declines in natural resource industries and manufacturing, which lie at the heart of the economic challenges facing rural Maine. This importance is magnified by the ability of health care to serve as an export industry (bringing income from outside the region) – and because of the future prospects of growth in this industry.

But at the same time, the higher value – and thus higher paid – parts of the health care system are increasingly concentrated in urban areas ...⁸⁴

Colgan and Hartley also point out that while a growing health care industry is tied to an aging population, this sector also offers one of the most promising opportunities for young people and may therefore help diversify the demographic makeup of rural communities.

Promote High Quality Tourism

The most obvious economic impact of a combination NP/NRA would be an increase in tourism-related jobs. Tourism-related jobs already exist in the region, making up 14 percent of all jobs, but at a low average annual wage of \$17,442. For a tourism strategy to be successful, the region also will have to stimulate higher wages by providing a diversity of higher quality experiences. In addition, the two-county region will need to attract to the north the millions of visitors that are already coming to coastal Maine.

Economist David Vail points out that for tourism to succeed in rural Maine there must be investment in world-class destinations that attract the "high-spending experiential tourists."⁸⁵ He argues that while a single new National Park in rural Maine cannot compete at the same level with a Rocky Mountain

National Park or Yellowstone National Park, a successful tourism strategy is possible if it is part of a larger regional tourism promotion strategy. He argues for a regional approach that could use Acadia National Park and its 2.5 million visitors as the anchor for the coastal end and a promotion of a regional network of recreation lands to the north, all accessible via Bangor’s international airport, I-95, and rail infrastructure.

Applying Vail's idea to the concept of this report, a new National Park and recreation area would form the northern end of recreation lands that include the Allagash Wilderness Waterway, the Appalachian Trail, the ITS snowmobile network, and Baxter State Park—a region where, to paraphrase David Vail, the whole is greater than the sum of its parts. As he points out, “If just five percent of Acadia’s visitors (100,000 people) were convinced to spend a few days in the Great Maine Woods, the economies of Penobscot, Piscataquis, and Somerset counties would get a major boost.”⁸⁶

As mentioned earlier in this report, if a new National Park located east of Baxter State Park were able to capture 15 percent of the visitation from Acadia National Park (375,600 visitors) and the spending were typical of what it is in similar park units (\$56/day), then a new park could potentially create 451 new private sector jobs.⁸⁷ The National Park Service would also create additional public sector jobs by hiring park rangers and others.

It is possible that a National Park would bring with it the prestige of the National Park Service, as well as universal “brand recognition,” and that this would help differentiate it from the mostly backcountry, camping-oriented Baxter State Park. Vail points out that the key to attracting the discriminating experiential tourists would be to develop a variety of high-end experiences and amenities. These include niche markets, such as women’s outdoor adventure trips, and the combining of several aspects of a successful visit that include cultural attractions, shopping, dining, and lodging. Many visitors to Yellowstone National Park, for instance, spend several days in the park and several outside, visiting gateway communities.

The economic importance of a National Park to the local economy is illustrated in the companion to this report, entitled *A Comparative Analysis of the Economies of Peer Counties with National Parks and Recreation Areas to Penobscot and Piscataquis Counties, Maine*. Areas with National Parks, or with a combination National Park and National Recreation Area, have shown higher rates of growth than areas with only a National Recreation Area. Importantly, the National Park and an NP/NRA combination have shown higher than the U.S. average rates of growth in population, real personal income, and employment, and also experienced a diversification of the economy, led by relatively higher-wage service industries (e.g., health care).

Nationwide, the tourism and recreation sectors play a substantial role in the economy, especially in rural communities. The Outdoor Industry Association (OIA) released a national study in 2012, *The Outdoor Recreation Economy*, which reviews the broad impact of outdoor recreation. It includes these highlights: 6.5 million American jobs, \$730 billion in outdoor recreation spending each year, \$49 billion in federal tax revenue, and \$289 billion in retail sales and services. In addition, the 2012 report notes that the outdoor recreation industry grew at roughly five percent annually during 2005-2011, when many other industries and sectors struggled with the recent recession. For 2006, OIA estimates that in Maine the outdoor recreation economy supported 48,000 jobs.⁸⁸

Promote Tourism Spin-Off Benefits

In addition to benefits from direct spending from visitors to the region, tourism can help the economy in several other ways:

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- Tourism can stimulate in-migration and business development that is not always directly related to tourism sectors. An increasing number of business owners are willing to relocate their business to areas with a high quality of life. They do this for personal reasons, but sometimes also for strategic reasons, promoting the area's amenities as a way to attract talented employees. Therefore, one of the benefits of tourism is that it offers people an opportunity to evaluate gateway communities as a possible relocation site. One study discovered that 2 out of 5 business owners in the northern portion of the Yellowstone region came there first as tourists, and then returned to live, bringing their businesses with them.⁸⁹ Or, as the Maine Office of Tourism phrases it on their web site: "Has the thought 'I could live here' ever crossed your mind while vacationing in Maine or visiting for business? You are not alone if it has."⁹⁰
 - Federal designations, such as a National Park and National Recreation Area, mean the creation of year-round, stable job opportunities in the relatively high-wage federal government sector. In the two-county region, federal jobs pay average wages of \$53,564 (\$61,297 in Penobscot County), much higher than the average regional wage of \$32,000. These jobs also often include medical and retirement benefits. To see the number of federal workers in NP/NRAs, see the companion to this report, *A Comparative Analysis of the Economies of Peer Counties with National Parks and Recreation Areas to Penobscot and Piscataquis Counties, Maine*, or use this on-line interactive tool: <http://headwaterseconomics.org/interactive/national-park-service-units>.

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In summary, what are the prospects of benefitting economically from a new NP/NRA? On the one hand, a new park and recreation area would most immediately benefit Bangor, which is already well on its way to becoming a destination for retirees, entrepreneurs, and relatively high-wage service workers. It has a diverse, vibrant, and growing economy, and is well connected via I-95 to markets with a commercial airport that has daily flights to larger metropolitan areas.

On the other hand, it is the other Maine—the northern, rural portion of the region—that has suffered the most from recent structural changes in Maine's economy, and where new job opportunities and economic development ideas are needed. Could a new NP/NRA located in the north benefit communities like Millinocket, Dover-Foxcroft, and Patten? Could these new designations set these communities on a path towards an economy that diversifies beyond timber and retirement payments? The answer may depend on whether this is seen as a tourism-only opportunity, or as something more significant.

New protected land designations are more likely to benefit gateway communities when combined with a rural development strategy that includes investments in education, transportation, and telecommunications, and that capitalizes on the assets and competitive advantages of the region. These advantages include a unique regional identity, spectacular scenery, a variety of outdoor recreation opportunities, and communities that are reasonably close to a major airport with access to larger metropolitan areas, and that represent lower-cost alternatives to highly developed coastal Maine. When combined with a strategy to capitalize on recent demographic and economic trends, the region could position itself as a desired destination for entrepreneurs seeking a higher quality of life; retirees and others with investment income seeking affordable housing and recreational and cultural amenities; and a growing service industry, led by the growth of health care.

Tourism would be part of this mix, and preferably, this sector would be aimed at discerning clients willing and able to pay above average for above average amenities, resulting in higher wages. This is more likely to happen if a National Park and recreation area were seen as part of a unique, high-quality, and well-promoted regional brand of recreation lands. This could be built alongside a timber industry that is increasingly specialized and diversified towards niche markets. Seen this way, it is possible to envision a more diverse and prosperous regional economy.

VIII. REFERENCES

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- ¹² In 2010, personal income earned from employment in manufacturing in the region was \$346,929,000. That same year Dividends, Interest and Rent was \$722,981,000 and age-related income (Retirement and Disability Insurance Benefits plus Medicare) was \$828,615,000. Data from: U.S. Department of Commerce. 2012. Bureau of Economic Analysis, Regional Economic Information System, Washington, D.C. Tables CA05 & CA05N
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- ¹⁵ It is common for agriculture, construction, mining, and manufacturing to collectively be called “goods-producing,” but this is not accurate because many of the service-related industries are also tied to the production of a product. For example, architects and engineers are counted as services, even though they are essential components of construction and manufacturing. For this reason we split sectors into “services” and “non-services.”
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according to the SIC system. We defined non-services as: Farm, Agricultural services, forestry, fishing & other, Mining (including fossil fuels), Construction, and Manufacturing (including forest products). Services-related were defined as: Transportation & public utilities; Wholesale trade; Retail trade; Finance; insurance & real estate; and Services (includes health, others). After 2001, employment figures are reported according to NAICS. We defined non-services as: Farm, Forestry, fishing, & related activities; Mining (including fossil fuels); Construction; and Manufacturing. Services-related were defined as: Utilities; Wholesale trade; Retail trade; Transportation and warehousing; Information; Finance and insurance; Real estate and rental and leasing; Professional and technical services; Management of companies and enterprises; Administrative and waste services; Educational services; Health care and social assistance; Arts, entertainment, and recreation; Accommodation and food services; and Other services, except public administration.

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²¹ Data from Bureau of Economic Analysis, Regional Economic Information System, Tables CA05 (organized by SIC, 1970-1999) and CA05N (organized by NAICS, 2000-2010). Wood products manufacturing was measured as two sub-sectors of manufacturing: Wood Products Manufacturing (NAICS 321) and Paper Manufacturing (NAICS 322).

²² According to the Bureau of Economic Analysis, Regional Economic Information System, Tables CA05, personal income earned in Forestry and Logging (NAICS 113) was one percent of total personal income in 2010, unchanged from one percent of total in 1984 (the earliest date for which data is available).

²³ In 2010, there were 2,704 forest products industry workers in Penobscot County, and 559 in Piscataquis County, according to the U.S. Department of Commerce. 2012. Census Bureau, County Business Patterns, Washington, D.C. The wood products industry is made up of the following NAICS codes: Growing and Harvesting: forestry and logging (113), support activities for forestry (1153); Sawmills and Paper Mills: sawmills and wood preservation (3211), pulp, paper, and paperboard mills (3221), veneer, plywood, and engineered wood product manufacturing (3212); Wood Products Manufacturing: other wood product manufacturing (3219); converted paper product manufacturing (3222); gum and wood chemical manufacturing (325191); wood television, radio, and sewing machine cabinet manufacturing (337129); and wood office furniture manufacturing (337211). Note: County Business Patterns counts only wage and salary workers. According to the Census Bureau, there were an estimated 302 and 116 self-employed timber workers in Penobscot County and Piscataquis County, respectively, in 2010. U.S. Department of Commerce. 2011. Census Bureau, Nonemployer Statistics, Washington, D.C.

²⁴ Timber harvest figures, based on the Maine Wood Processors Report, provided by James W. Sewall Company, Old Town, Maine. Sewall Company manages much of the land owned by Elliotsville Plantation, Inc. that is being proposed as a new National National Park and National Recreation Area.

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²⁹ LeVert et al., 2007. Pg. 31.

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region, so there is little chance of overestimating the size of health care by including this sector). Blank spaces for latter years in Piscataquis County represent data gaps.

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http://www.outdoorindustry.org/images/researchfiles/OIA_OutdoorRecEconomyReport2012.pdf?167 and <http://www.outdoorindustry.org/pdf/MaineRecEconomy.pdf>.

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⁴⁵ Income and poverty statistics are from U.S. Department of Commerce. 2012. Census Bureau, American Community Survey Office, Washington, D.C.

⁴⁶ “Food stamps” refers to households that receive coupons or cards that can be used to purchase food. This program was recently renamed the Supplemental Nutrition Assistance Program (SNAP). These figures are based on the American Community Survey and have a relatively high margin of error, between 14% and 40%.

⁴⁷ Penobscot County was split into north and south as follows: (1) all Census Subdivisions, beginning with Seboeis, Lincoln, and Burlington subdivisions, were added together to form the north; (2) all other subdivisions south of these three were added together to form the south. The south consists of the region delineated by the Bangor Metropolitan Statistical Area. Census Subdivision data was obtained from the Bureau of the Census, American Community Survey.

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⁵⁰ Calculations are from James W. Sewall Company. Estimate of job impacts from taking 150,000 acres out of production: “In general, Maine forestland produces one ton of fiber per acre per year. The land is conservatively estimated to be 80% forested (it may actually be 70% forested, according to Sewall Company). Projecting this percentage onto the entire 150,000 acres results in an estimated 120,000 acres of “forestland” producing 120,000 tons/year of green fiber. An average mechanical logging crew (mechanical side) can harvest 1,000 tons/week and would likely work 40-45 weeks per year on this property. A mechanical crew consists of a harvester, a skidder, and a delimeter with operators. Generally, two trucks would be required to transport the wood. This means that one mechanical side can deliver 40,000 tons per year, and three mechanical sides can deliver 120,000 tons per year. This adds up to 15 jobs in the woods. These three crews would share a mechanic and a crane operator. This level of activity would likely utilize a road crew of three, a dump truck operator, excavator, and grader operator, with an additional six supporting jobs in the woods. This is a total of 21 jobs to get 120,000 tons of wood to the mill each year on a sustainable basis.”

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⁵² Forest Facts. 2007. Maine Forest Products Council: <http://www.colby.edu/enviro/LandscapeConf/MFPC%20handbook.pdf>. According to MFPC, in 2002 there were 5,367 people directly employed in “Logging and Forest Management,” which generated an additional 3,870 jobs in other sectors (a ratio of 1:1.4). To verify whether this ratio is a reasonable estimate we also consulted a publication entitled Economic Contribution of Minnesota’s Forest Products Industry – 2011 Edition, by the Minnesota Department of Natural Resources and the University of Minnesota Duluth: <http://files.dnr.state.mn.us/forestry/um/economiccontributionMNforestproductsindustry2011.pdf>. The authors estimate that 3,273 people are directly employed in “Forestry and Logging” in Minnesota, generating 2,958 indirect and induced jobs in other sectors (a ratio of 1:1.12).

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⁵⁵ Eligibility for payment under the PILT program is reserved for local governments (usually counties) that provide services such as those related to public safety, environment, housing, social services, and transportation. Payment is made directly to the eligible local government unless the state government chooses to enact legislation (under guidelines prescribed in section 6907 of P.L. 97-258) to receive the payments and, in turn, pass the money on to other smaller governmental units located within the counties (Wisconsin is the only State currently employing this option). U.S. Department of the Interior, PILT Frequently Asked Questions. <http://www.doi.gov/pilt/faqs.cfm>.

⁵⁶ Section 6904 Payments are made for federal lands acquired after December 30, 1970, as additions to lands in the National Park System or National Forest Wilderness Areas. Section 6904 payments are computed by taking one percent of the fair market value of land acquired for addition to the National Forest or National Park systems and comparing the result to the amount of property taxes paid on the land in the year prior to Federal acquisition. The county payment is the lesser of the two. Section 6904 payments are made annually for a period of five years. The first payment begins in the Federal fiscal year following the fiscal year in which the land was acquired by the Federal Government, unless mandated otherwise by law. U.S. Department of the Interior, PILT Frequently Asked Questions. <http://www.doi.gov/pilt/faqs.cfm>.

⁵⁷ Figures in this table are from James W. Sewall Company. Numbers have been scaled for an assumed total 75,000 acres for a new National Park and 75,000 for a new National Recreation Area.

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Revenue from this tax is credited to the Unorganized Territory Educational and Services Fund which is used to reimburse the state and county governments for the cost of providing municipal services in the Unorganized Territory and to pay the county tax. The State provides General Fund appropriations in its biennial budget to the Education in the Unorganized Territories account for each fiscal year. The General Fund is reimbursed by the Unorganized Territory Educational and Services Fund at the end of the fiscal year for actual expenses incurred.”

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