



Industry News

■ ***Verso emerges from Chapter 11, wipes out \$2.4 billion of debt*** (Jul 15th)

Verso Corp. announced Friday it has emerged from Chapter 11 bankruptcy protection as a much stronger company with significantly reduced debt and a unified capital structure. The Memphis, Tennessee based company employs 560 people at its Androscoggin Mill in Jay. There will be no changes in operations at the mill as a direct result of Verso's restructuring and emergence from bankruptcy.

— *Franklin Sun Journal*

■ ***U.S. Senate calls for tough softwood lumber agreement with Canada*** (Jul 19th)

The U.S. Lumber Coalition applauds a letter from 25 U.S. Senators for the ongoing efforts to negotiate an effective, sustainable solution to the longstanding challenge presented by unfairly traded softwood lumber from Canada. The Senate letter underlines that a strong lumber industry is essential to the U.S. economy, and securing fair trade in lumber is of critical importance to domestic lumber manufacturers and their workers, as well as tree farmers and landowners.

— *Woodworking Network*

Industry Overview

Forestland Operations

As anyone in the Northeast knows, the entire summer was uncharacteristically devoid of rain. In fact, when most people hear the word 'drought', they likely think of California in the past few years. However, many people don't know the Northeast has been experiencing the worst drought in more than a decade, and as a result agriculture throughout New England has had all eyes on the weather.

The consistent dry weather has meant that summer logging operations have continued unabated after our similarly dry spring. As a result, weather has not been an obstacle in the implementation of our harvesting plans or summer road building. Unlike last year, our contractors could spend their time on new efforts rather than repairing work damaged by excessive spring runoff. All told, forest operations have been generally trouble-free for the last six months, with the unmistakable and quite notable exception of the current timber markets, which we will touch upon below. Typically this time of year, our region would see two major impediments to forest operations: nighttime freezing & thawing, and the autumn rains. This year to date, we've had neither. As a result, despite the dusty roads, even the latter part of the summer was spent at as full a throttle as our regional markets would allow.

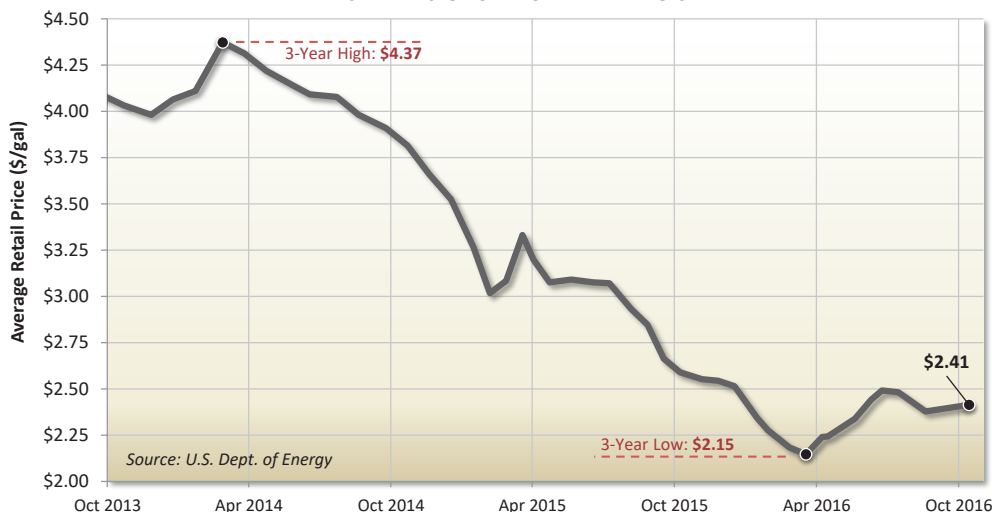


Fall's colors settle in over a newly built road in northern Maine.

The cost of diesel fuel remains fairly low, slightly above our regional 3-year low point (see chart on next page). This is relief considering that the overall average distance to market for our forest products has increased substantially over the last 18 months. Tightness in the timber markets results in fewer options, which often means travelling further in order to find a willing buyer. Lower diesel prices (and that of other petroleum based products) has helped ease the impact of increased distance on landowners.

NUMBER 2 DIESEL FUEL PRICES - NEW ENGLAND

3 YEAR HISTORICAL MONTHLY AVERAGES



Forest Product Markets

P&C DEMAND INDICATORS

Representing our opinion of market demand for timber products in the Northeastern U.S.

CURRENT OUTLOOK

Sawlogs

Spruce & Fir	<div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div></div>	STEADY
Pine Logs	<div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div></div>	STEADY
Hardwood Logs	<div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div></div>	UP

Pulpwood

Hardwood	<div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div></div>	UP
Spruce & Fir	<div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div></div>	STEADY
Pine & Hemlock	<div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div></div>	UP
Biomass	<div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div></div>	UP

The overall picture in the forest products markets have changed very little since last quarter. Most sawn products have been relatively steady, and most low-grade materials have remained a challenge to move. Since it is imprudent, if not impossible, to produce only high-grade sawstock out of a mixed-species, natural growth forest such as we have in the northeast, landowners in the region have been left with few options for marketing pulpwood. In some cases we have been unable to profitably sell all the pulpwood we cut in the woods, or have been forced to meter our deliveries to match mill quotas.

Timber harvesting is a highly planned endeavour -- one year before the harvest begins, landowners invest time and capital in developing the access, identifying the volumes and species composition of the harvest, and determining the proper silviculture. Often foresters are forced to look ahead to the mix and species that should be cut, predicting what the market will prefer. This job used to be a little easier because our regional markets were more stable and demand could be anticipated. With more volatile markets, what looks like a good opportunity today may develop into a difficult one tomorrow - and vice versa. It takes a well oiled communication system between the consuming mills and producers in order for this to maintain itself as an efficient system.

Pulpwood Products

In a nutshell, the supply of pulpwood being produced by the regional logging force greatly exceeds the demand from our pulp & paper manufacturers, particularly in areas a great distance from a mill. Because of mill closures throughout the central and northern Maine region, there are fewer locations to deliver pulpwood despite the fact that production levels have remained high at the remaining facilities. Partly in thanks to the favorable dry weather, raw material inventories at pulp mills have been persistently high through the quarter.



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With its bankruptcy concluded, Verso stock begins trading again (Jul 19th)

Verso Corp.'s stock was trading once again Tuesday on the New York Stock Exchange following the paper company's emergence from Chapter 11 bankruptcy. The Memphis-based papermaker had been delisted from the exchange in September after its stock price fell far below the required \$1 average over a 30-day trading period. The stock opened at \$12.23 a share, and its value rose briefly as high as \$13.59 before settling to around \$12 for most of the day.

— PressHerald.com

Asian beetle threatens Adirondack forests that produce iconic baseball bats (Aug 1st)

An invasive beetle that was accidentally imported to the US from Asia continues to spread in New York State. The Emerald Ash Borer has already destroyed millions of trees and now threatens groves of white ash in the southern Adirondacks and the Mohawk Valley, which produce some of the most iconic baseball bats in the country.

— North Country Public Radio

Sappi approves \$25M investment at Somerset Mill in Skowhegan (Aug 4th)

Sappi North America is moving forward with a \$25 million capital project to update the woodyard at its Somerset Mill in Skowhegan, Maine. Sappi North America president and CEO, Mark Gardner said "These upgrades will improve our product, raise our bottom line and continue to build up on our sustainable practices." The project will begin in October and will be completed in late November 2017.

— MaineBiz.biz

To manage their wood piles, mills have nearly all wood suppliers restricted on strict quota-based delivery limits.

It wasn't long ago – before the swift and sudden mill closures -- when these facilities were reaching out 250-300 miles to fulfil their timber needs, well beyond their traditional sourcing radius. Absent the robust completion for the wood, pulp mills can now comfortably achieve most of their fiber sourcing much closer to the mill, and at a much lower cost. Considering input costs of a pulp mill drive a significant component of the margin, we would assume that the financial footing of the remaining pulp mills has become more solid.

Not only have wood buyers' job of sourcing pulpwood become easier with the availability of the material, buyers can afford to be picky about the quality and age of the fiber they do receive. We have seen a general tightening of tolerances over the past several quarters related to fiber quality and adherence to specifications. This means that loggers and foresters have been much more careful about the wood that is being delivered to mills, making sure that timber meets its destination's specifications before it leaves the forest. We have also seen more attention recently to forest certifications by our regional pulp mills. We used to be able to demand a price premium for certification, but it is now almost a requirement to obtain market share.

In recent weeks, the situation has been compounded by several unscheduled outages at pulp mills due to manufacturing problems, in addition to normal scheduled outages. Normally, at this time of year, a mechanical outage would not cause significant anxiety among wood suppliers, with the specter of the autumn rains in everyone's minds. However, with their pulpwood inventories swelled, mills experiencing mechanical outages also cut off deliveries and use this as yet another way to help manage their supply chain.

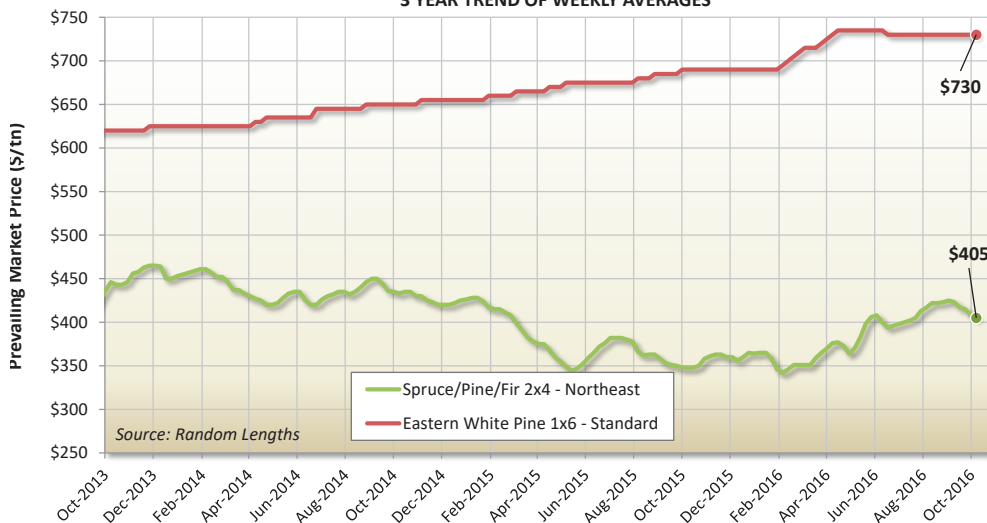
Sawn Products

Softwood

Most of our softwood markets report stable and moderate demand, and generally smooth operations. Finished lumber prices -- fueled by overall optimism and growth in the U.S. housing market and strong export demand -- have been trending slightly up, according to Random Lengths. The Random Lengths Composite Index, a broad measurement of lumber prices, has been seeing growth throughout 2016 and today stands a clear 20% higher than this time last year.

PRICE TRENDS IN SOFTWOOD LUMBER

3 YEAR TREND OF WEEKLY AVERAGES



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■ **Small woodlot owners a powerful force for future of Maine's forests** (Aug 5th)

According to the Maine Department of Agriculture, Conservation and Forestry, nearly 90 percent of Maine - 17 million acres - is forested, and 5 million of those acres are owned by small woodland owners in parcels ranging from 10 to 1,000 acres. Mills get a significant portion of wood from private, smaller woodlots.

— Bangor Daily News

■ **Obama signs order creating North Woods national monument** (Aug 24th)

President Obama signed into law the creation of the Katahdin Woods and Waters National Monument, beginning a new chapter in the history of a region in Maine that had been dominated by the forest products industry for more than a century. The executive order assigns the 87,563 acres formerly owned by Roxanne Quimby to the U.S. Department of the Interior and the National Park Service.

— Bangor Daily News

■ **New national monument established in Maine's North Woods, but debate rages on** (Aug 24th)

While supporters hope it will lure more tourists and create jobs, opponents warned it could further destabilize a forest products industry struggling to rebound from the closure of the Millinocket and East Millinocket paper mills. Many others have mixed views, seeing significant jobs potential, but not in the industry that was once the backbone of the region.

— Pressherald.com

Demand for the raw material -- softwood high-grade sawlogs -- seems to bear this out, as our regional sawmills have been calling for consistent deliveries throughout the quarter, despite inventories being flush across the board.

Despite the relative calm, the stability of the softwood lumber industry is about to be cast into doubt with the expiration of the 2006 Softwood Lumber Agreement. This agreement, which



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In Focus: Inhabitants of the Past

As foresters, we occasionally come across some surprising things in the woods. Just when we think we may be in an area that few if any humans have been in before, we find evidence of not only past visitors, but past inhabitants, and sometimes whole communities. It is not unusual to find stone walls and old fences traversing through mature stands of timber, once built as farmers cleared land to plant crops and build communities.

So what happened that caused these areas to revert to forests? For one, during the Civil War many Maine soldiers went south to fight in the war and found better farmland in places such as Pennsylvania and Ohio. Another reason past communities were abandoned was the reliance by the inhabitants on an industry that became obsolete. T39 MD, in Maine's unorganized territories, was once home to a thriving small community where the main employer was a leather tannery. Hemlock trees were plentiful in the area and its bark was a major component in the leather tanning process. A different method was found to tan leather and this community disappeared almost overnight. Old foundations, wells, a cemetery, a foundry and other structures can be found on this site.

Epidemics were also a cause for the disappearance of communities. For example, whole families were wiped out by a diphtheria and whooping cough epidemic in the early 1860's, evidenced by cemeteries like the one we found in the woods in Wellington, Maine. When a sizeable number of community members died in a short period of time, the entire town was often abandoned. Our foresters once found a cemetery in the woods while conducting a timber cruise that contained approximately a dozen graves of Maine residents that died in Louisiana during the War of 1812. It must have been an arduous trip to get their bodies back to Maine from Louisiana in 1812!

It is extremely interesting, and sometimes a little spooky, to come across signs of previous civilizations in an area we think has never been settled. It pays to keep your eyes open in the woods; you never know what you'll find.



Grave marker of family members that died in a Diphtheria epidemic of 1862.

governed trade of lumber between the United States and Canada, expired last October with an agreed upon "stand still" period in which no trade grievances could be filed. A particular sore spot for U.S. lumber manufacturers is the allegation that most Canadian logs are sourced cheaply from Canada's public lands, thereby subsidizing Canadian production to a degree that creates an environment of unfair competition. Both governments have indicated a commitment to develop a new agreement, however the negotiations to date have yielded little progress. Most experts believe that U.S. industry trade groups will be filing grievances shortly after the end of the standstill period, which is likely to add some uncertainty to both the lumber market and the market for spruce & fir sawlogs.

Here in the northeast, loggers and landowners have enjoyed a longstanding interdependent relationship with Canadian sawmills just north of the border in Québec. Because of their location, many of these border mills necessarily acquire a significant portion of their logs on the open market from U.S. landowners, not from Canadian public lands; this fact ultimately led to a special exemption for these mills in the 2006 Agreement. While it is impossible to predict what will happen during the negotiation progress, we believe that maintaining this historical exemption is critical to a healthy spruce-fir log market in the northeast. A thriving softwood lumber market will become increasingly important as the supply from spruce budworm affected forests in both the U.S. and Canada gets pushed onto the marketplace. This was a big summer for our local white pine sawmills; we produced & sold more white pine logs than in recent memory. Pine mills have been running well, and their products have been selling at pace. As a result, this segment of the market has had uncomfortably low inventories across the board coming into the fall. We expect both pricing and demand for white pine sawlogs to be stable.

■ **Lumber Trade War Brewing as Hope of New Canada-U.S. Deal Fades** (Aug 25th)

A trade dispute between the U.S. and Canada over softwood lumber is escalating, raising the specter of higher tariffs as officials downplay the likelihood of reaching a deal before an October deadline. If the deadline is missed, the U.S. is expected to begin a process to enact new tariffs, which would be a barrier to Canadian producers.

— *Bloomberg.com*

■ **Baileyville pulp mill completes \$150M expansion into tissue market** (Aug 31st)

Woodland Pulp mill in Baileyville, Maine celebrated the formal opening of the St. Croix Tissue mill, adjacent to Woodland Pulp, on August 31st. The opening of the new facility and its two machines has created 80 new jobs at a manufacturing site that lost hundreds over the years as paper production in Maine has dwindled.

— *Bangor Daily News*

Hardwood

Sawmills' inventories of hardwood sawlogs at our regional facilities are currently full, bolstered in part due to the continued in-woods production of hardwood pulpwood and the fantastic logging conditions. Summer is an important season for grade hardwood mills to manage their inventory levels as warmer temperatures and humidity can promote staining, which deteriorates the quality of the lumber.

This year, the extended warm summer conditions into October has left many hardwood mills with one foot on the brake. Most mills made it through the summer spoiling season by limiting deliveries when they could. Until we get to a point where cold weather sets in, we expect these buyers to be extremely restrictive.

Demand for timber mat logs has remained steady. Nearly all timber mat producers in the region have associated themselves with national timber mat distributors, and in turn this has developed stable markets and consistent demand.

Veneer & figured wood - the highest grade logs - has been solid as well. We have been able to move these logs to market throughout summer. Like hardwood lumber, these products are also very susceptible to staining, and so colder weather will likely increase the amount of market interest in veneer-grade material.

Biomass

While the biomass markets in the northeast have languished recently with the low prices of fossil fuel energy options, much is happening in the political arena surrounding biomass power generation. Congress, through efforts led by Sen. Susan Collins, has directed the EPA to develop a policy that reflects the carbon-neutrality and sustainability of biomass power. Opponents of this initiative have used provocative imagery of forests being clearcut on a mass scale to produce power, but have often failed to address the fact that biomass produced in the forests of the U.S. are generally the lowest value by-products of any given harvest. Absent a biomass market, this material would simply be cut and left to rot in the forest. Despite the low margins, biomass is economically significant in Maine - many loggers and landowners depend on a way to use this material in a sensible manner. We applaud Sen. Collins and the other sponsors of these amendments to the energy bill.

Final Thoughts

In mid-August, President Obama designated approximately 87,000 acres in central Maine as the Katahdin Woods & Waters National Monument. We were disappointed but not surprised at how the process unfolded, and while the National Park Service has been adamant about being open to the concerns of nearby landowners, it has been too soon to determine whether or not they will demonstrate their commitment to working with neighbors. Their heavy-handed approach during the Appalachian Trail eminent domain takings several decades, has left many landowners, including ourselves, skeptical. Our clients collectively share approximately 46 miles of border with the new National Monument; an ownership representing tens of thousands of acres. Moreover, many other landowners further afield could soon feel the effects of a new federal presence. All along, we have voiced our concerns about access issues, public safety on haul roads, and the shadow effects of increased regulation. In the months (and years) ahead, we will be working directly with the National Park Service to mitigate the impacts on loggers and adjacent landowners. We are hopeful they will be receptive.

Benjamin D. Carlisle
PRESIDENT



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■ ***Despite energy deal loss, huge wind farm is still on track in Aroostook*** (Sep 19th)

Plans for what would be the largest wind farm in the state proposed for Unorganized Territory of central Aroostook County are still on track. While the estimated 119 turbine Number Nine Wind Farm originally was slated to come online by 2017, after several setbacks, the company is working toward a goal of completion by 2020.

— *Bangor Daily News*

■ ***Justices back forestry officials in tax fight with timber company*** (Sep 27th)

Weyerhaeuser lost a case before the Vermont Supreme Court that justices said could cost the company more than \$1 million because loggers cut more timber than allowed under the state's current use program. The program grants tax breaks meant to discourage development of forests and farmland.

— *VTDigger.org*

Impact of the New National Monument on Private Timberland Values

by Sam Radcliffe, Vice President

On August 24 President Barack Obama created a new national monument in Maine, just days after conservationist Roxanne Quimby donated 87,654 acres to the federal government. The new Katahdin Woods & Waters National Monument (KWWNM) includes miles of frontage along the East Branch Penobscot River and abuts Baxter State Park, home to Mt. Katahdin, the highest peak in Maine. The new monument fulfills a longstanding dream of Quimby, who began buying the land in the

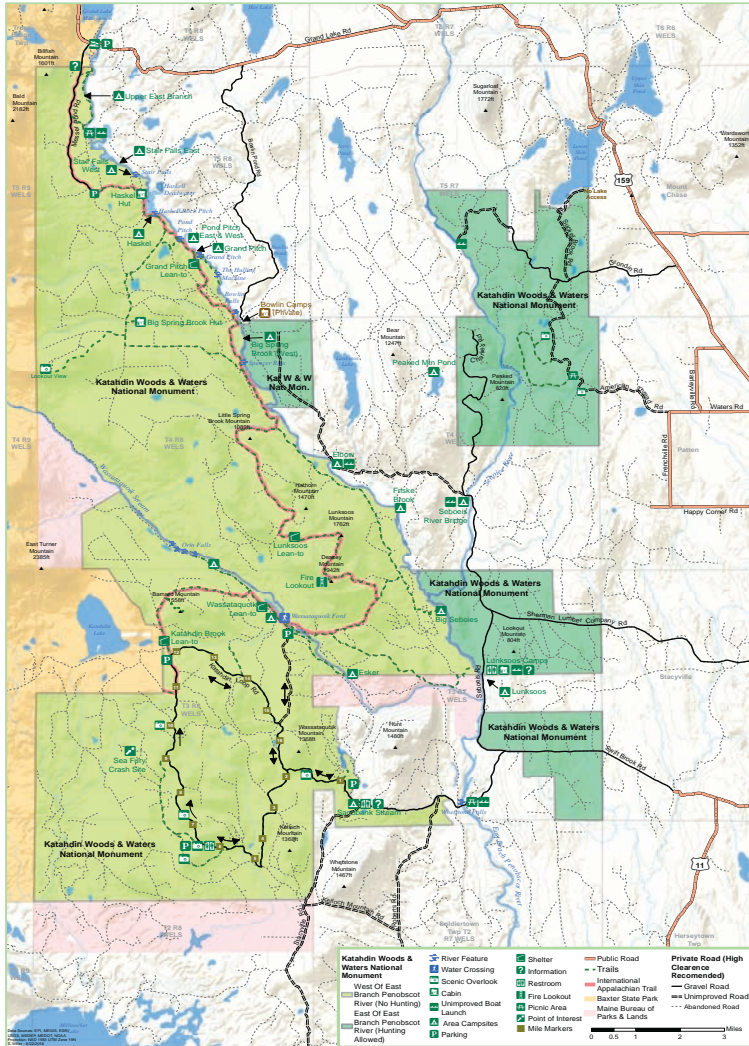
1990's. Her ultimate goal is to create a national park from the land. Numerous national parks, which require congressional designation, began life as national monuments which can be created by executive designation.

From the day the idea of a national park became public, it generated extreme interest and created both opponents and supporters, both groups highly vociferous. Opponents of the idea essentially fall into two camps: those who fear a loss of their historical access to Maine woodlands for recreational uses, and those who fear a federal presence will adversely affect the potential for resurgence of the traditional forest products industry. Both opponent groups are driven by a desire to preserve the state's longstanding tradition of private forest ownership. Less than 10 percent of Maine's forest land is in public ownership, ranking it 47th among the states, in company mostly with states in the Deep South.

Supporters of a national park argue that it would bring needed jobs and economic diversity to a region hard-hit by the contraction in the forest products industry. While much of the debate has focused on economics, there is also a contingent who value permanent conservation of the property's rich biological and scenic resources.

To my knowledge, one issue that never entered the debate was the impact of public land on private timberland values. In the valuation literature there

Katahdin Woods & Waters National Monument Recreation Map ✨



Source: National Park Service <https://www.nps.gov/kaww/planyourvisit/maps.htm>

have been many studies showing that proximity to open space, public parks, greenspaces, etc. has a positive impact on neighborhood value. Crompton¹ reviewed numerous studies from the 1970's through early 2000's and found that as a general rule, properties "abutting or fronting a passive park area" would experience a positive value impact of 20 percent. However, this impact was experienced only in a 500 to 600-foot band around the park. Beyond this relatively small zone the impact of the park became negligible.

He further found that the amount of value premium is related to the supply of similar natural amenities outside of the park. Where the supply is great, the premium is "likely to be small or non-existent". Regarding supply, he opined that "privately owned space may act as a partial substitute for public park space". Fausold and Lilleholm² found similar result results in the literature and concur that "the relationship between the market and enhancement values of open space depends upon land scarcity and the perceived risk of development. In rural areas where most land is open space and likely to remain so, both market and enhancement value will be low."



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Most of the aforementioned studies were conducted in an urban environment, but work in rural areas like the Katahdin region have found similar general results. Spencer Phillips³ examined the impact on land values of proximity to Green Mountain National Forest (Vermont) wilderness areas. He found that parcels located in towns that contain wilderness were priced 13 percent higher than in towns without wilderness. Like the urban studies, the price impact declined as the distance from the wilderness boundary increased. An updated analysis suggested even greater value impacts⁴.

In stark contrast to these studies, Snyder et al⁵ found a significant negative relationship between land prices and proximity to public land in Minnesota. They found that adjacency to public land caused a 15 percent decline in price. The authors admitted surprise at this relationship but posited “...there may be little incentive to buy property abutting [public land] due to possible negative externalities such as hunter trespass, off-highway vehicle damage, noise or vandalism.” Unlike the urban studies, the heavily forested location of this study⁶ is very similar to the Katahdin region, with an economy strongly based on timber and tourism.

A recent Clarkson University study⁷ in the Adirondack Park of upstate New York supports the Minnesota finding. It estimated the impact on private property values of proximity to “wilderness” where no motorized recreation is permitted and “wild forest” which allows the use of motorized vehicles. The “wild forest” designation most closely resembles permitted uses in the KWWNM, with property west of the river closed to hunting and snowmobiling (but open to other motorized uses) and the areas east of the river open to all recreational uses. The Clarkson study found a positive property value effect for proximity to wilderness but a negative effect for proximity to wild forest. The author states “this result is reasonable since allowing motorized vehicle use in wild forest lands may destroy wildlife habitat, degrade the region’s bio-integrity and produce undesirable effects like noise and pollution.”

Regarding the KWWNM, this body of research is not conclusive but is suggestive. It is likely that both positive and negative land value impacts will be caused by the KWWNM, with distribution to depend on individual property location and characteristics, i.e. micro considerations. The macro impacts of the reduced supply of private land on timber and land prices that one might hypothesize seem unlikely, because the fact is neither these lands nor the timber on them were in the market prior to their designation as a national monument, and the property represents only 0.5% of the total private forestland in Maine.

The positive impacts that numerous studies have attributed to adjacency will be somewhat limited, because the largest and most use-restricted portion of the monument is either abutted by other public land or is bounded by the East Branch Penobscot River. However, should the monument increase recreational visitor usage, there may be opportunities for development of recreational service businesses (camps, equipment rental, etc.) on nearby private land. There could also be opportunities for larger investors to make acquisitions in anticipation of conservation sales (easement or fee simple interests) to effectively enlarge the monument or fill in spatial gaps. Such sales often receive a price premium as compared to typical private market transactions.

Other property is likely to experience negative value consequences, as suggested by studies in both rural Minnesota and New York. Large timber producing properties in the region may suffer higher operating costs due to suboptimal and more crowded transportation networks, additional regulation, and greater public scrutiny of forestry operations. Smaller recreational property prices could suffer due to an increase in visitor traffic to a formerly quiet region, fear of trespass and vandalism by public forest visitors, etc.

In any case, cloudy expectations about the future affect today’s offers. Until the market itself sorts out the real impacts, there is likely to be a period during which clear-thinking and committed investors will have an advantage.

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1. Crompton, John L., 2005. The impact of parks on property values: empirical evidence from the past two decades in the United States. *Managing Leisure* 100:203-218 (October 2005)
 2. Fausold, Charles J. and Robert J. Lilieholm, 1999. The economic value of open space: a review and synthesis. *Environmental Management* 23(3):307-320.
 3. Phillips, Spencer, 2000. Windfalls for wilderness: land protection and land value in the Green Mountains. *USDA Forest Service Proceedings RMRS-P-15*, Vol. 2, 258-267.
 4. Phillips, Spencer, 2004. Windfalls for Wilderness: Land Protection and Land Value in the Green Mountains. Ph.D. Dissertation. Blacksburg, VA: Virginia Polytechnic Institute and State University.
 5. Snyder, Stephanie A., Michael A. Kilgore, Rachel Hudson and Jacob Donnay, 2007. “Determinants of Forest Land Prices in Northern Minnesota”, *Forest Science* 53(1):25-36
 6. St. Louis County, Minnesota
 7. Heintzelman, Martin D. and Chuan Tang, 2015. Towards the Measurement of the Value of Public Land Designations in the Adirondack Park. An Economics Research Report prepared for the Adirondack Council.



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