Prentiss & Carlisle

update

3rd Quarter 2014

Industry News

- ***More Individuals Are Looking to Invest in Farmland and Timberland*** (Jul 18th)
  Land can be a good hedge against inflation because the income it derives and its value typically will rise if prices in the broad economy pick up. Land also is in demand because it doesn't rise and fall in step with the value of other assets, notably stocks.
  — *Wall Street Journal*

- ***Athens biomass plant to get $30 million investment*** (Jul 21st)
  In a deal that would trigger about $12 million in state tax credits, a Missouri-based investment firm, CCG Community Partners LLC, plans to put more than $30 million into Athens Energy, a biomass plant connected to the Maine Woods Pellet Co.
  — *Bangor Daily News*

- ***Mergers of papermakers may be OK'd despite antitrust concerns*** (Jul 24th)
  Verso Paper Corp plans to buy privately held rival NewPage Corp in the second half of 2014. Verso would have 54 percent of the U.S. capacity to make coated paper. The merger is an uphill battle, but with falling sales industry-wide and excess capacity means that the deal could be approved.
  — *Reuters*

Industry Overview

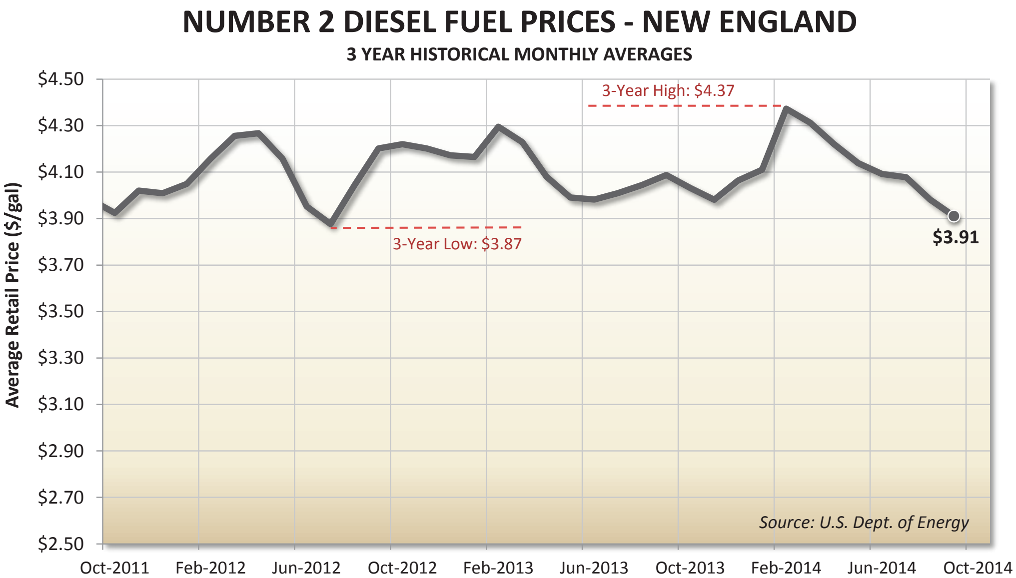
Forestland Operations

The early parts of the 3rd quarter in the Northeast were plagued by an atypically long stretch of our typical rainy weather. For a while there, we didn't think the rainy season would ever leave, and generally poor operating conditions left most summer forest operations in our regions off to a fairly slow start for the quarter. Thankfully, by mid-August, conditions had dried out and it was back to business in the woods. Late August and nearly all of September were dry, clear & mild – almost perfect summer operating conditions. Therefore most operators have been seeing good, long, and productive days.

P&C foresters Bob Chandler and Jeremy Miller visit a harvest site as part of our annual Forest Management audit with FSC auditor Dave Capen.

Because of the great weather in recent weeks, most operations had generally no problems meeting volume commitments to mills. This is something we monitor quite closely, and summer is an important period for mills and landowners alike. Weather will be foremost on everyone's mind as we consider the prospects for the fourth quarter.

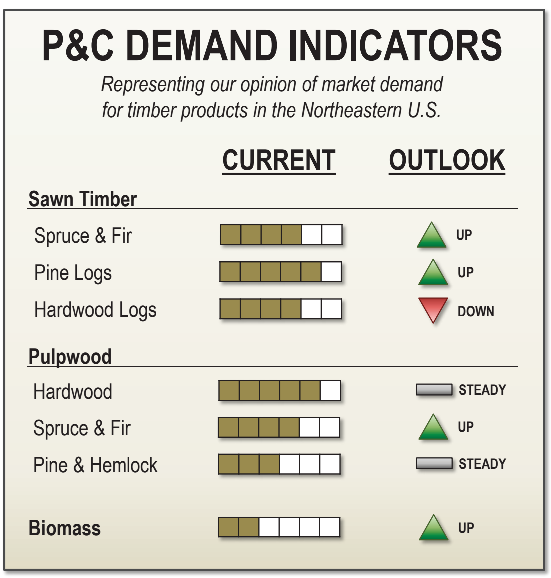
In addition to overseeing the ongoing operations, this is the time of year that our foresters are lining up their 2015 operating plans. This is all part of ensuring enough harvest capacity for winter – we try to get our contractors lined up early and discover any potential holes in our logging capacity. In addition, our foresters try to get in early to have some of the harvests in wetter areas flagged out and ready to go once the freeze hits.



Downward-trending diesel fuel prices for the past 8 months have been a welcome relief for everyone working in the woods. Because of the falling price indexes, we have made two downward adjustments to our contractor fuel premium (the price over and above our standard logging rates). This premium, which is designed to compensate loggers for their increased costs, had been at historically high levels for us.

Forest Product Markets

By and large, despite some recent national and regional headlines, we would characterize the current market situation as a "sellers market" for timber products. This is true across the entire spectrum of products we sell, and in almost every region we operate. We're fortunate in the Northeast to have a multitude of diverse markets in which to sell timber, and we have several options for every product our land grows.



That's not to say that it has been an easy quarter – all forest product producers have had to react extremely quickly to sudden shifts and changes in the marketplace. The most dramatic changes have been brought about by capacity reductions or shutdowns in the pulpwood markets (see discussion below). These shutdowns have some risk of impacting demand for pulpwood, although we have yet to see that happen. Conversely, we have seen increasing demand and capacity additions for sawtimber. Throughout the quarter, our delivery plans changed frequently as different markets demanded more or less wood.

update

3rd Quarter 2014

- ***Trees save lives, reduce respiratory problems*** (Jul 25th)
  In the first broad-scale estimate of air pollution removal by trees nationwide, scientists have calculated that trees are saving more than 850 human lives a year and preventing 670,000 incidences of acute respiratory symptoms.
  — *Science Daily*

- ***ReEnergy to restart Ashland biomass plant*** (Aug 5th)
  The 39-megawatt Ashland facility, which has been idled since March 2011, will be fully operational by December and will restore 25 direct jobs and an estimated 150 indirect jobs associated with the facility.
  — *Mainebiz*

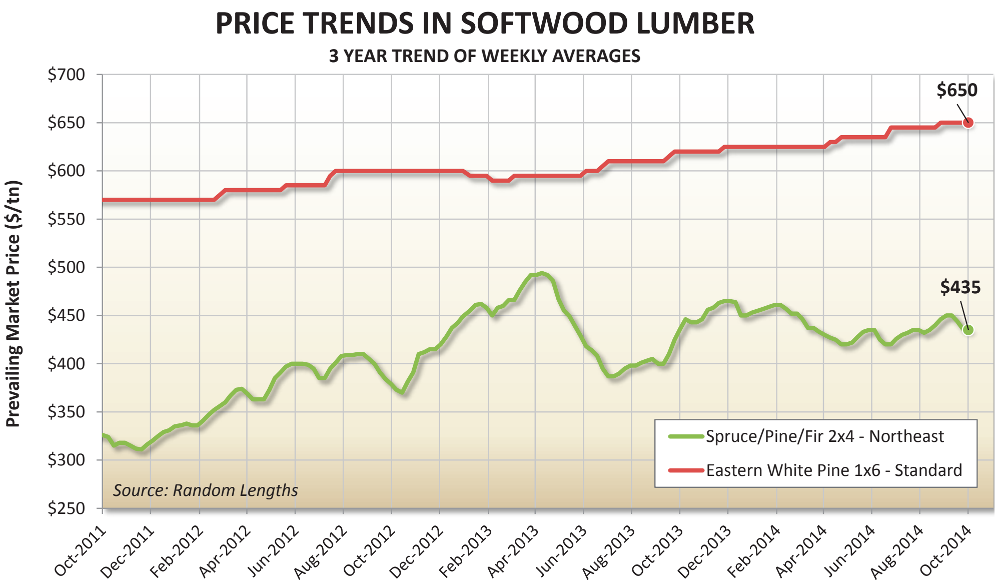
- ***Old Town Fuel & Fiber closes, leaving 180 workers furloughed indefinitely*** (Aug 14th)
  Employees at Old Town Fuel and Fiber learned Wednesday night that they would be indefinitely furloughed due to foreign trade and high fuel costs. During this idled period ownership will be pursuing options to secure the long-term viability of the facility.
  — *Bangor Daily News*

- ***Hemlock pest expands territory in Knox County Maine*** (Sep 4th)
  The woolly adelgid first came to the United States from Japan in the 1950s. It causes premature needle drop, and can eventually kill trees. A tourist recently found the pest on 2 trees in Camden.
  — *Portland Press Herald*

Sawn Products

Softwood

Every year, without fail, inventories at our regional softwood sawmills fall during the months of October, November & December. The reason for this is simple – each year it is around this time that loggers can no longer enter into softwood stands without causing significant ground damage. The amount of softwood produced in the woods falls, and mills burn through the inventory they built up during the summer. Therefore, this quarter has represented a build-up period for softwood raw material inventories. Based on what we have seen, most sawmills in our regions are either on-track or slightly ahead on their inventory build-up plans. The great weather in the latter half of the quarter has helped.



Prices for softwood dimensional lumber have retreated slightly, and finished goods inventories at most spruce & fir sawmills in our region are currently tracking somewhat above normal. These mills often take one of two strategies with their finished goods – either they look to move their product no matter what the price (within reason!), or they hold their inventory in an attempt to time the market. With the price instability that we've seen recently, the winners and losers of this game often trade places.

Several of the spruce & fir sawmills that we sell into reside north of the US-Canadian border, and as such the market is regularly influenced by cross-border issues. For one, after trading at par for the last year, the U.S. dollar has been slowly strengthening against the Canadian dollar, decreasing these mills' ability to buy wood from U.S. producers, but at the same time increasing their ability to export finished products. Furthermore, lumber pricing indexes are far above levels that would impose an export/import tax through the Softwood Lumber Agreement. Both of these factors create generally favorable conditions for sawmillers over the border.

One Canadian sawmill company has notably stretched its wings across the border into the U.S. Several weeks ago, Maibec, Inc. announced they were under agreement to purchase the Fraser Timber sawmill in Masardis, Maine. Maibec has been recently committing a large amount of capital to upgrades to their facilities in Saint-Pamphile Quebec; they're good businesspeople, create a good product, and we're pleased that the Fraser mill will be seeing some new life.

Pine sawmills in the Northeast are coming off their annual spoiling season, and as such most are running with much thinner raw material inventories than they would like. Most timber

- ***How Drones Are Emerging As Valuable Conservation*** (Sep 4th)
The use of drones - also known as unmanned aerial vehicles (UAVs) - can help monitor protected areas, collect data in inaccessible regions, and even deter poachers. These drones can get an overview of the landscape and high-resolution images of the forest canopy.
— *Yale Environment 360*

- ***Global warming triggers surge in tree growth*** (Sep 21st)
Some trees are growing up to 70 percent faster than just a half century ago. Scientists attribute the growth to rising temperatures and the extended growing season. Carbon Dioxide and nitrogen are other factors contributing to the faster growth.
— *Summit County Citizens Voice*

- ***Bankruptcy filing appears to end era in Maine papermaking*** (Sep 24th)
Great Northern Paper files for liquidation, shattering hopes that its last mill would reopen in the Millinocket area, once the heart of the state's industry.
— *Portland Press Herald*

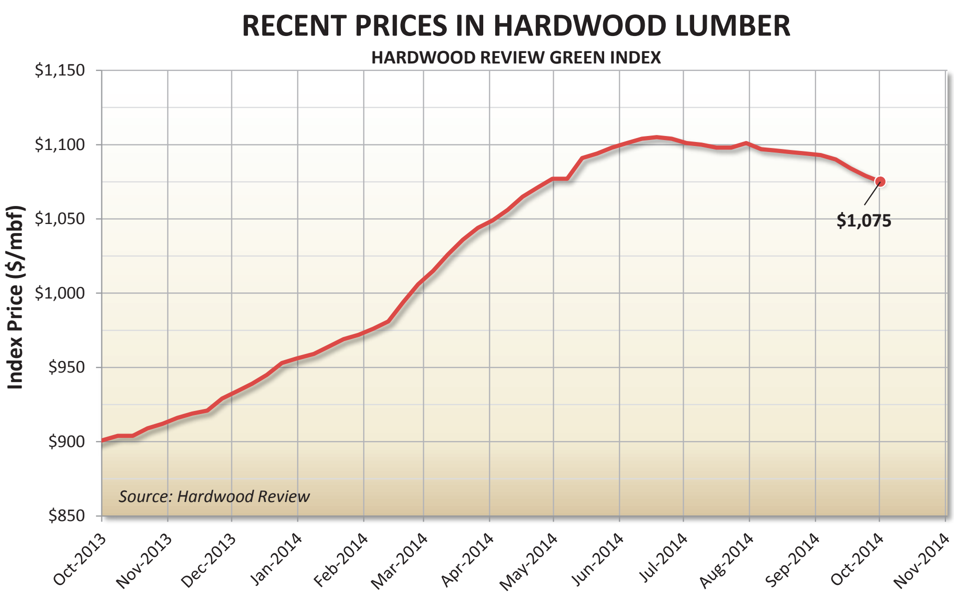
- ***Paper and Packaging Prices on the Rise*** (Sep 24th)
With steady demand for paper-based packaging products and rising prices of wood pulp and paper, prices of boxes, packing materials, packaging services and more will continue to trend upward.
— *Manufacturing & Business Technology Magazine*

producers cut a marginal amount of pine in the summer, and keep a tight eye on the supply chain when it is cut. Although we've stayed true to our annual operating plans, we've been able to shift some of our operations to go seek pine when it made sense; it helps the mills get their product and can be a good opportunity for landowners. As seen in the chart above, pricing on white pine lumber has been on a steady climb, and most mills – when they have the raw materials – are sawing at or near capacity. Their product – going mostly to fill orders for trims, moldings, casings and other finish lumber – has been moving well. In fact, it appears to us that the growth in demand for pine logs is outpacing the amount of regional supply – with sawing capacity that's been added recently it's getting more and more difficult to meet the demand for pine logs.

Hardwood

Hardwood sawstock can really be thought of in several different categories: Industrial, Grade Logs, and Veneers. The finished products produced from each are widely different, and each has its own market dynamics. Recently, however, we've seen occasions when markets of different categories reach in to compete with each other to get logs because of overlapping raw material specifications. This has created an interesting set of market characteristics for hardwood sawlogs.

First, regional demand for industrial-quality timbers has been heated in the last year, and we don't see any signs of this abating in the short term. These logs go into timber-mats, landscape timbers, and other structural timbers. The mills that are producing these products are buying all they can buy in the face of a long list of customer orders. In some cases, and for some species we have seen, wood buyers at these industrial facilities pay prices that compete with the hardwood grade logs.



The market for hardwood grade logs used for sawn lumber is currently quite volatile. During the last year, we saw a substantial run-up in both hard maple & oak lumber pricing, which served to increase demand for hardwood sawlogs. With optimism in the lumber & housing markets, much of the exuberance appeared to be exacerbated by speculative buying. However, the proverbial shoe has dropped, and it appears the market overbought. We are now anticipating price erosions on both hard maple & oak logs. We expect demand for these logs to continue to erode slowly, but the sheer size of the market will cushion the blow and pricing will stabilize

- ***Maibec Signs Agreement to Acquire Fraser Timber's Masardis, Maine Mill*** (Sep 24th)
  An agreement was signed last week between manufacturing company Maibec Inc of Levis, Quebec and Fraser Timber, LLC for Maibec's purchase of the assets of the Masardis, Maine lumber mill.
  — *Digital Journal*

- ***China plans to establish strategic timber reserves over 14 million hectares by 2020*** (Oct 1st)
  Of the 14 million hectares, 4.5 million will be new plantations, 5 million will be improvement of existing mature forests and a further 4.5 million hectares will require intensive management of young and maturing forest.
  — *LesProm.com*

- ***Can bioenergy replace coal?*** (Oct 1st)
  Although today it fails to compete on cost with other renewables such as wind and solar, it is believed that bioenergy not only has the potential to significantly improve but could even become cost competitive with coal.
  — *McKinsey & Company*

by late winter or early spring. Demand for more minority sawlog products, such as ash, yellow birch and soft maple has been relatively stable, if not slightly down.

Lastly, our veneer markets currently sit on a glut of finished goods inventories and quite limited customer orders. Demand for veneer logs, particularly maples, is accordingly soft. We've seen renewed interest in birch veneers, but other than that this market has quieted compared to the early parts of the year.

Pulpwood Products

Hardwood

In short, demand in the hardwood pulp market continues to outpace available supply, despite recent capacity reductions. As an example, the regional market lost a 700,000-ton hardwood pulpwood mill during the 3rd quarter with the shutdown of the Old Town Fuel & Fiber mill. However, the fact of the matter is that P&C clients have yet to feel the loss. Part of the reason is that the mill has been running at reduced capacity since last year, so we have been slowly weaned off that market. Furthermore, having relationships at a large variety of markets has helped us reroute all the volume that was formerly consumed by this mill. The market is still adapting, but in the short term we are not anticipating significant reduction in landowner returns as a result of this closure and we remain optimistic that the facility will restart under a new buyer.

One month after that shutdown, we are seeing at least as much demand for hardwood pulpwood as when the mill was running. Hardwood pulpwood consumers, particularly poplar groundwood consumers, are continuing to reach out beyond their traditional buying radius in order to supply their mills. What's more, despite 6-8 weeks of excellent logging conditions, hardwood pulp mills' inventories are strikingly low for the season. One regional mill has a regularly-scheduled one-month shutdown for maintenance coming up, but has indicated to us they will continue to purchase pulpwood during the shutdown to ensure adequate supply.

While all this is going on, we are seeing an increasing amount of softwood production runs from our traditional hardwood kraft pulp mills. Our interpretation of this is twofold: 1) demand for hardwood fiber is currently so high that mills aren't able to adequately supply themselves with hardwood alone, and 2) pricing for softwood-based kraft pulp (NBSK) is currently very favorable for those that produce and sell it. We expect to see this trend continue.

Softwood Pulpwood

When we talk about our regional softwood pulp manufacturers, we have to split them into two very distinct groups: Groundwood producers and Kraft Pulp producers. Groundwood pulp, used almost exclusively in printing papers, has been dwindling due to falling global demand of their finished product. Kraft pulp, however, has longer fibers and is a more versatile product. Pricing and demand for NBSK has actually been steadily strengthing, with NBSK commodity indexes up approximately 20% over the last 2 years.

Complicating the market picture is that mills which produce groundwood-based products also must purchase NBSK as an additive to their product. So while the demand for groundwood-based finished products is declining, the costs of their raw materials is increasing. This has been a one-two punch that is one cause of much of the current industry strife – groundwood mills in particular are feeling the pinch.

The recently announced shutdown of the Verso mill in Bucksport is one example of a recent victim of these market dynamics. Although the shuttering of some regional production capacity will probably help with the oversupply, it does not solve the fundamental issue at hand – less demand on newsprint and printing papers. We're not sure that the steady decline is over. We understand that the merger between NewPage Corp. and Verso Paper is on track to be completed before the end of this calendar year. This may eventually lead to even further capacity reductions, but we're hopeful that it will ultimately make the combined entity leaner and therefore more competitive.

All that said, the demand for the raw material produced in the woods – softwood pulpwood – has yet to indicate a related decline. During the last quarter we saw strong demand for both spruce & fir pulpwood as well as above normal demand for hemlock & pine pulpwood.

Biomass

Demand for biomass has been fairly flat throughout the summer, although we have seen some formerly-idle stand-alone biomass power generation facilities recently resume operations. This will likely help slightly offset the loss of consumption at pulp mills. Oddly, we've seen a rash of turbine problems at several separate regional biomass boilers, and as such some are running at levels below their full capacity.

Final Note

One final thought before I sign off this quarter. In Maine, over the last year, we have seen closures or capacity reductions from five of the state's pulp & paper mills (see table to right).

Recent Capacity Reductions Maine's Pulp & Paper Mills		
NewPage – Rumford	October 2013	A semi-permanent shutdown of one of three paper machines reduced production capacity.
Lincoln Pulp & Tissue	November 2013	Production reduced after a large boiler explosion eliminated the mill's ability to produce pulp.
Great Northern Paper	February 2014	Shutdown due to lack of financial capacity to pay vendors. Now in early stages of bankruptcy.
Old Town Fuel & Fiber	August 2014	Shutdown – high fiber costs cited as a factor; currently seeking a buyer.
Verso Paper – Bucksport	September 2014	Permanent shutdown recently announced; mill to be shuttered by the end of 2014.

I was in the early stages of drafting this newsletter when I was notified about the most recent mill closure announcement in Bucksport. We've long talked about structural, industry-wide issues with the pulp & paper markets, and to some degree we are seeing this play itself out. One might say we are seeing the economics of supply-and-demand in action. But while we often find ourselves on the opposite side of issues from the mills, and we fight for every nickel, I can't help but reflect on the impact that these closures are having on loggers, millworkers, and others in our region. These closures have spelled the loss of almost 1,100 jobs - a staggering number for our region. While I know the market can adapt to and absorb these shocks, I can only hope that the families affected by this will as well. They will remain in our thoughts.

Benjamin D. Carlisle
PRESIDENT

The Rumbling Of Timber Bears

by Sam Radcliffe, Vice President

There is a lot of uncertainty in the timberland investment world today, and perhaps not as much excitement as in the late 1990's and early 2000's. An interview with a leading TIMO analyst offers a pretty frank perspective:

> Q: You were recently quoted in the Wall Street Journal as suggesting that timberland may be over-priced and that a bubble may be forming. Were you suggesting the market is over-heated?
>
> *James Nicol, Chief Investment Strategist for Forest Systems, Inc.: We think the dial has moved past "warm" and is closing in on "hot." That suggests to us that anyone who is thinking about getting into the asset class should be cautious about how, when and where.*
>
> Q: Why are timberland values so high right now?
>
> *Nicol: There is just too much cash flowing into the asset class from too many sources relative to the supply of investment grade forestland. There are several factors driving this interest, including declining returns across all investment markets, an exploding interest in real assets, and the fact that there is a swarm of new firms out there promoting themselves as forest investment experts.*
>
> Q: What factors could lead to a market correction?
>
> *Nicol: I could see a scenario where interest rates rise and bond yields increase, drawing capital away from the asset class to more liquid, less risky investments like treasuries. This would also undermine the ready availability of low cost debt, which has been one of the contributors to the run-up in forestland transaction prices. Both*

changes would diminish the excess demand that is pushing up timberland values as well as mortgage rates. In all likelihood, a material increase in mortgage rates also would have a significant negative impact on housing starts, triggering a reduction in demand for lumber, which would drive down sawtimber stumpage prices.

Many in the timberland investment industry would agree that this is a realistic assessment of today's market. But that interview took place in 2005! More recently, however, some veterans in the industry are sounding similar themes.

Recent Thought

Our friend Scott Sacco of Environs Strategies, a past executive at both Hancock Timber Resource Group and Forest Systems, recently distributed a white paper outlining his thoughts on the current state of the industry. Some extracts:

- *"The key messages about the asset class and its fundamental attributes that have been promulgated by TIMOs and others since the late 1980s (healthy long-term returns characterized by cash and appreciation components, portfolio diversification potential, inflation hedging potential and capital preservation potential) continue to be accepted and largely go unchallenged by institutional investors and their investment consultants."*
- *"Overall, discount rate expectations for timberland appear to be poorly calibrated with market realities – with some timberland thought leaders suggesting that a 2 to 4 percent real return on domestic, commodity-based softwood investments is the best investors should expect in the near term. Because of these and related circumstances, investors' continuing use of the NCREIF Timberland Property Index as a benchmark for measuring and evaluating the performance of individual managers and the asset class as a whole presents a challenging conundrum for the TIMO community."*
- *"There are more than 30+ TIMOs competing for access to capital and deals, but there appears to be nominal market differentiation amongst them beyond basic geographic preferences, forest-type specialties, and business models. At present, a large amount of institutional capital is waiting to cash out of the asset class, but some TIMOs appear to be advising their clients that liquidation of their positions does not make sense in the near term because asset values are expected to rise in coming years, which will make it more difficult and expensive for them to re-enter the market in the future."*
- *"The timberland transaction market remains anemic as land auctions characterized by wide bid-ask differentials continue to complicate efforts at deal making. Some market analysts suggest this is tangible evidence that a great deal of the timberland purchased for investors in the mid-2000s was richly acquired."*

At the just concluded *Who Will Own the Forest?* conference sponsored annually by the World Forestry Center in Portland OR, Brookfield Timberlands' Reid Carter's principal message was: "Given the small investable universe the key attribute the timberlands asset class must protect if it is to remain relevant is the reputation of its managers." He suggested the following as key issues to watch:

- How managers "sell" the asset class: Contribution of biological growth is often exaggerated – With the exception of fast grown and greenfield timberland investments, the majority of the present value comes from standing inventory, not biological growth
- Alignment between timberland investors and managers
- Realized versus unrealized returns
- Increasingly aggressive underwriting
- Low discount rates, flat costs, real price increases, etc.
- Unconstrained harvest scheduling models (selective use of growth models/yield curves)
- Stagnant regulatory environment
- Cap rate compression at exit
- Inadequate accounting for risks in less developed markets
- Unrecognized encumbrances and/or counterparty risks
- Short single round auctions with limited data availability – deteriorating quality of information being made available by Timberland Rates of Return sellers

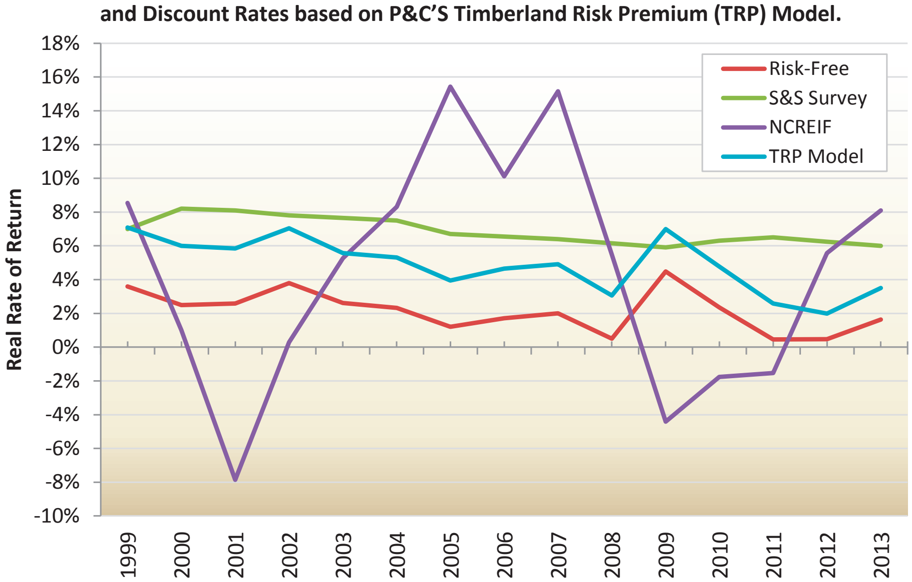
One of the points that "timber bears" consistently make is that "advertised" target rates of return for timberland are too high – that deals are actually being made at much lower discount rates. *A Who Will Own The Forest?* panel session this year was entitled "Discount Rates and Timberland Values by Region". The panelists were all well-respected timberland appraisers and they all agreed that real discount rates for U.S. timberland are now in the 5.8 - 6.0% range. All three of the panelists seemed to support their views with data from the annual discount rate survey conducted by the consulting firm Sizemore & Sizemore (S&S).

Steve Burak of S&S presented a chart showing the results of that survey over a 15-year period. Based on the survey responses of TIMO's, appraisers, and investors, this is probably a pretty good proxy for the "advertised" target rate of return. Over this fifteen year period, the reported real rates of return showed little volatility, declining very smoothly from about 8% to about 6%. This is actually fairly remarkable, given that the period covered two recessions, two significant stock market downturns, a housing boom and a housing bust. This goes directly to Scott Sacco's point – "discount rate expectations for timberland appear to be poorly calibrated with market realities."

Advertised vs. Actual Rates of Return

Aside from the lack of volatility that would be expected in an otherwise volatile investment world, the survey rates appear to be significantly higher than the fifteen-year record of performance for timberland, as indicated by the widely accepted NCREIF timberland index. Figure 1, below, compares the survey rates with the NCRIEF timberland index, the "risk-free" rate of return (long-term US Treasuries) and rates predicted by Prentiss & Carlisle's Timberland Risk Premium (TRP) Model (see our 2013 Q2 Newsletter). Over this period, the S&S Survey rates averaged 6.9% while the NCRIEF index averaged 4.5% and our TRP Model averaged 4.9% (all inflation-adjusted). But note that the S&S Survey and the TRP Model start at the same point in 1999. The difference over the rest of the period is that the TRP Model adjusts in response to changes in investment conditions, in that it is anchored to the risk-free rate.

FIGURE 1. Recent History of Long Term Risk-Free Rates, Timberland Discount Rates from the Sizemore & Sizemore Survey, NCREIF Timberland Index Returns, and Discount Rates based on P&C'S Timberland Risk Premium (TRP) Model.



Does the disconnect between "advertised" rates as represented by surveys and actual performance as represented by the NCRIEF benchmark indicate under-performance or just unrealistic expectations? In our opinion, it is clearly the latter. Only one thing can happen to an asset class that purports to yield stable above-market returns while at the same time providing inflation hedging and portfolio diversification benefits: its price has to go up until risk-adjusted returns settle down to an equilibrium position with other investment alternatives. This is exactly what has happened over the last 15 years.

Perhaps one of the reasons that survey respondents have been unable to admit that expectations for timberland returns have dropped is that without those high expectations, timberland as an asset class loses much of its luster. But that luster was built on a perfect storm in the 1980's and 1990's – inefficient timberland markets, government regulation that greatly diminished timber supply, and mostly strong residential construction activity.

Bearish?

We have used the term "timber bears" here, but I don't think these individuals are actually bearish on the asset class, and neither is Prentiss & Carlisle. Our point is that investors need to understand that the timberland investment thesis has changed. Out-sized returns on U.S. properties are largely a thing of the past, but direct ownership of timberland can still offer a degree of portfolio diversification, inflation hedging, and stable risk-adjusted yields.

Timberland is not the place to try to hit a home run, but it can be a steady singles producer. Investing in the asset class today requires patience, discipline and recognition of some fundamental guidelines:

- If valuation of a property is built upon a specific value-maximizing strategy, that strategy has to actually be executed in order to realize projected returns.
- Management alpha is largely a function of exploiting niche opportunities in addition to efficiently and stubbornly "sticking to the knitting."
- Properties with a current yield story rather than an appreciation story are less risky in an era of low interest rates.

The most successful timberland investors, including P&C and its clients, have an investment horizon defined not by years but by generations. While that horizon would seem to fit with many institutional objectives (think pension funds), the structure of the institutional timberland market is not designed for multi-generational investment. There are a variety of reasons for this structure, but most have to do with the conventions of both the institutional investors and the real asset managers. There are signs that some players in this asset class are beginning to recognize the mismatch. As timberland returns stabilize at a lower than historical level, we expect the structure of the industry to adjust, but when and how are unclear. Stay tuned.

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