Hancock
Timberland Investor

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Casualty Losses in Timberland Investments

The risk of catastrophic losses in timberland portfolios can be effectively mitigated with active forest management and portfolio diversification.

Timberland properties occasionally suffer casualty losses from natural events such as fire, storms, and insect and disease outbreaks. In a 2010 Hancock Timber Research Brief, we discussed the risk of large scale losses in timberland investments caused by natural events in North America. In this issue of the Hancock Timberland Investor, we examine catastrophic losses on a global timberland portfolio and discuss available risk and loss mitigation strategies.

Recorded Losses

To evaluate the risk of catastrophic losses to timberland investments, we have compiled 20 years of data on natural events which have affected timberland managed by Hancock Timber Resource Group (HTRG). We have further broken these data down by major timber producing region and leading cause of damage. All losses reported below are calculated net of salvage.

Chart 1 displays losses, broken down by region, to a large and diverse portfolio of timberland properties managed by HTRG in the US South, US Pacific Northwest, US Northeast, Australia, and New Zealand. Chart 2 displays the loss data by the three leading causes: fire, storm, and insect and disease outbreaks. In both charts, losses are calculated as percentages of assets under management in a given year.

From 1991 to 2010, the HTRG timberland portfolio has grown significantly in size, from $1 billion up to $9 billion of assets under management,
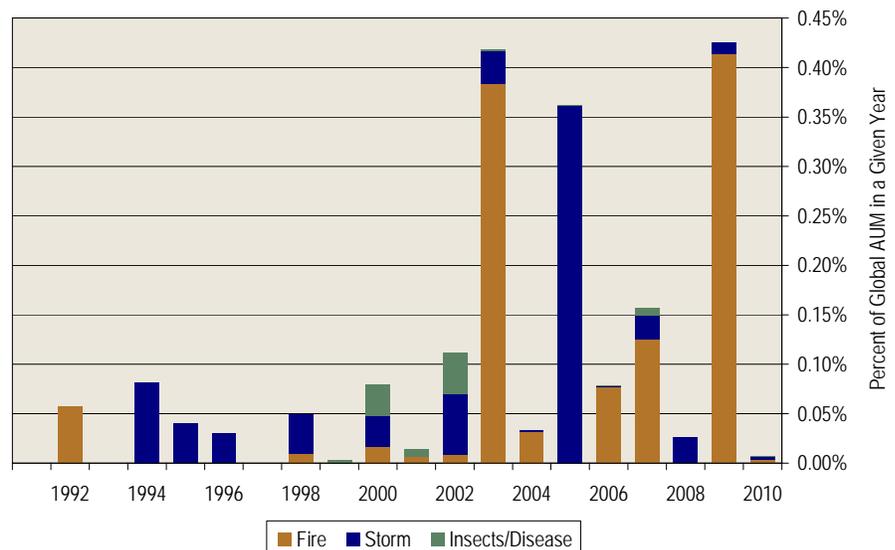
Chart 1: Annual Percent of Timberland Asset Value Lost to Natural Disasters by Region

Legend: US South, US Pacific Northwest, US Northeast, New Zealand, Australia
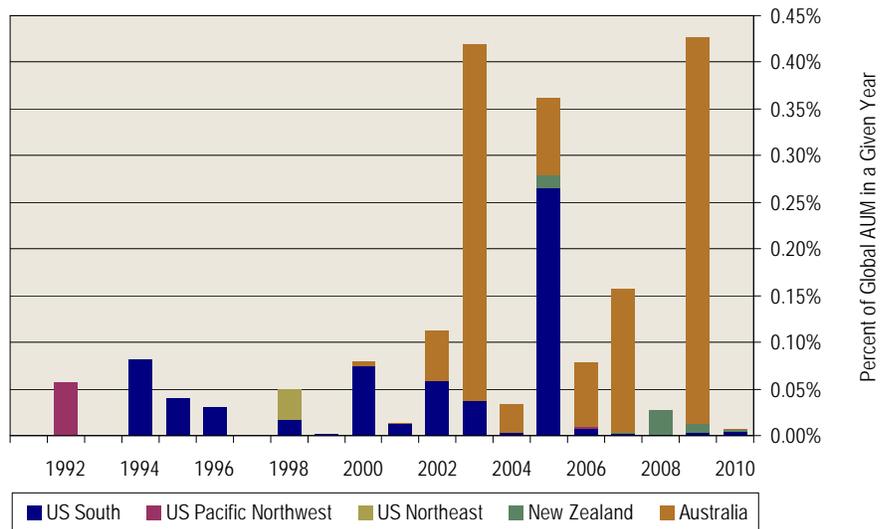
Source: HTRG Research

Chart 2: Annual Percent Loss of Asset Value to Natural Disasters by Cause

Legend: Fire, Storm, Insects/Disease

Source: HTRG Research

and geographic spread, with properties in Australia first entering the portfolio in 1998 and New Zealand properties in 2004. Over these years, the annual portfolio-wide loss due to catastrophic events has averaged 0.1 percent of assets under management.

Annual casualty losses varied from a minimum of zero, observed in three of the 20 years on record, to a maximum of 0.43 percent of assets under management, with a standard deviation of 0.14 percent.

The causes of casualty losses vary by region. In the US and New Zealand, storms have been the leading cause. In Australia, fire has been the most prominent source of damage. Historically, insect or disease outbreaks have been low – with outbreaks never exceeding 0.04 percent of HTRG's total global assets under management.

In its 20 year history of timberland management, HTRG experienced two events whose impact far exceeded other losses. When hurricanes Katrina and Rita struck the gulf coast in 2005, they caused losses of 0.36 percent of HTRG's total global assets under management. The damage was centered on a handful of HTRG-managed properties located in Mississippi, Louisiana, and Alabama. In the absence of these two hurricanes, damage in 2005 was below 0.001 percent of assets under management

In 2009, a second extreme event occurred, this time in Australia. A series of wildfires caused a loss in the order of 0.4 percent of HTRG's total global assets under management. These fires were the most intense fires experienced in Australia post European settlement. The average annual loss of 0.1 percent of HTRG's global assets under management reported above decreases to 0.08 percent when the 2009 losses in Australia are excluded.

Although the incidence of extreme natural events can be neither accurately predicted nor completely averted, timberland investment managers have

Noncontiguous Timberland Property in the US South
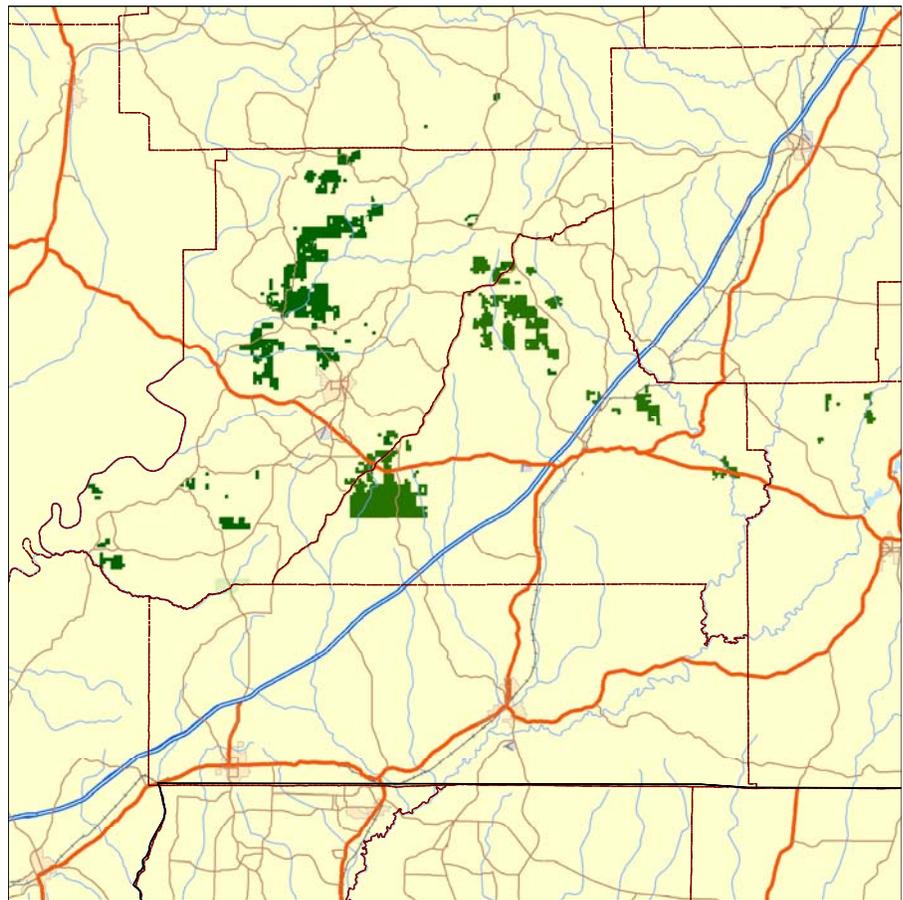
several tools at their disposal to reduce the risk of catastrophic losses.

Active Management

Most of the forests largely affected by damaging natural events, such as fire, are publically held, located in national parks or within national forests. However, public forests differ in many aspects from the actively managed timberland properties owned by institutional investors.

Managed timberlands are typically thinned of competing vegetation to allow for maximum growth of the remaining timber. Thinning also reduces the risk posed by disease or insects, because vigorously growing trees are less likely to become infected. In addition, active timberland management creates a forest structure less likely to feed fires, and

produces lower levels of woody debris on the forest floor, both reducing forest fire risk. Further active management practices include forest stand surveillance and monitoring, fire prevention and suppression systems, and insect and disease control.

Unlike national forests and parks, institutionally managed timberland consists of noncontiguous tracts of land in many regions. That is, a timberland property is commonly composed of a set of distinct parcels. The map above provides an illustration of parcel dispersal in the US South. By separating timberland into discrete parcels, a noncontiguous layout provides a natural hedge against the dangers posed by fire, diseases and insects, and local extreme weather events.

Quarterly Average Regional Composite Prices for Softwood Sawtimber Stumpage (U.S.$ per MBF)
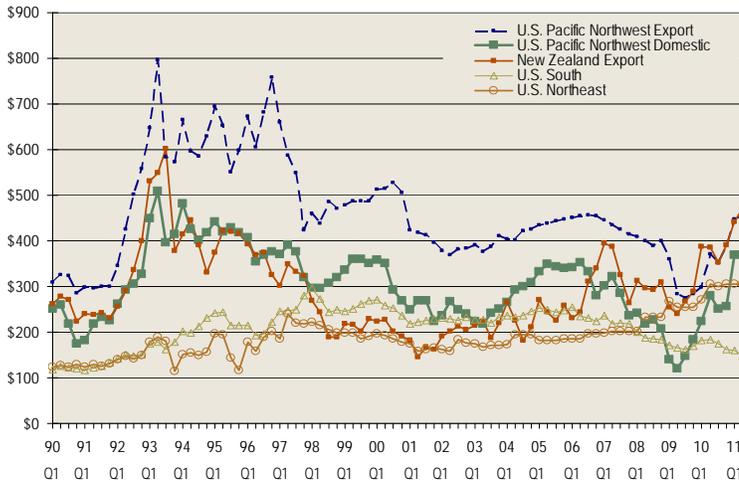

Figure 1. Softwood Sawtimber Stumpage Prices

Prices for timber used domestically in the US continued to fall second quarter – as demand for building products locally remains stuck at historically low levels. Domestic stumpage prices in the US Northeast and US South moved downward or remained flat. In contrast, Chinese demand for US Pacific Northwest timber and resultant price rises have transferred to domestic prices for timber in the region. Likewise, New Zealand timber prices for logs exported into Chinese markets are again strong second quarter.

Quarterly Average Prices for U.S. South Lumber and Sawlogs ($ per MBF—lumber scale)
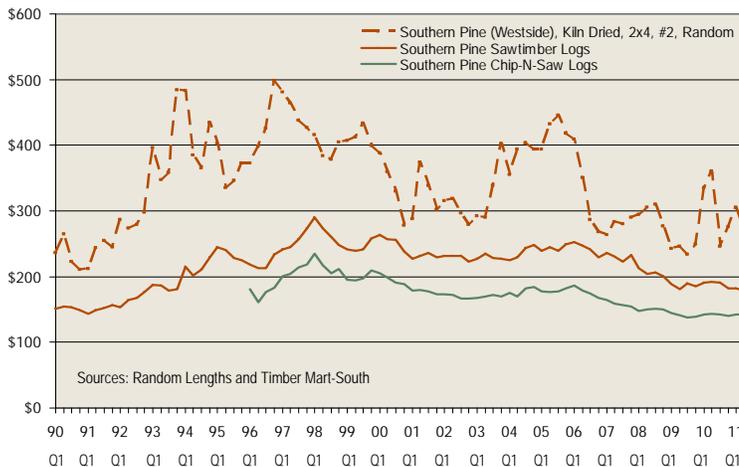

Figure 2. Lumber and Sawlog Prices in the U.S. South

Summer dry weather combined with continued slack demand in the US for lumber products used domestically was reflected in prices for 2x4 lumber produced in the US South. Timber prices fell thirteen percent from last quarter, and a thirty percent drop from the most recent peak one year ago.

Quarterly Average Prices for U.S. Pacific Northwest Lumber and Sawlogs ($ per MBF - lumber scale)
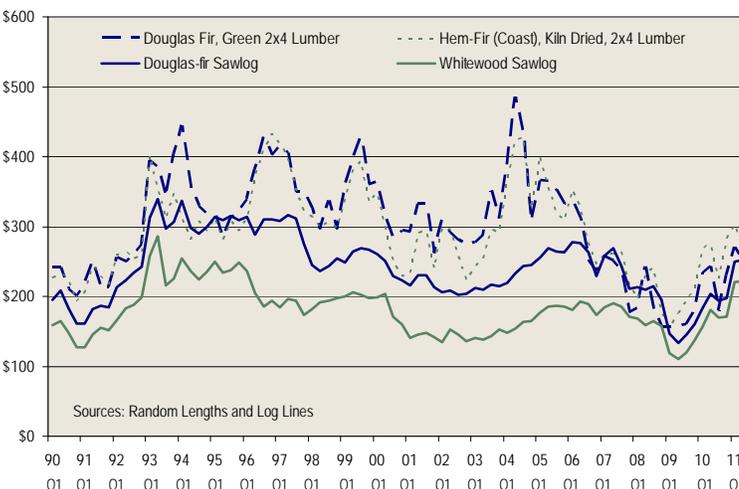

Figure 3. Lumber and Sawlog Prices in the U.S. Pacific Northwest

Demand for wood products in China has worked to raise the price of lumber produced in the US Pacific Northwest. The last quarterly fall in prices occurred in the fourth quarter of 2010. Since that time, the large effort by lumber producers and timber growers to penetrate the Chinese markets has been successful, and prices have risen as a result.

Quarterly Average Regional Composite Prices
Softwood Pulpwood Stumpage ($ per ton)

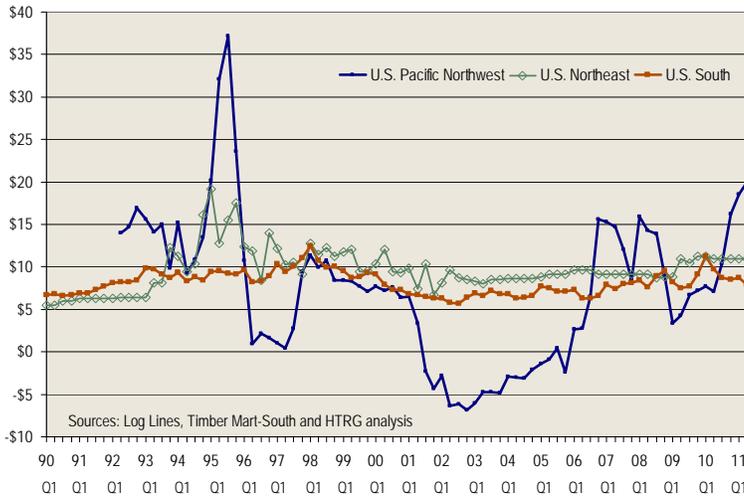Sources: Log Lines, Timber Mart-South and HTRG analysis

Figure 4. Softwood Pulpwood Stumpage Prices

Prices for pulpwood stumpage over the last year resemble prices for sawtimber – increasing in the US Pacific Northwest and declining in the US South. As US Pacific Northwest lumber producers increase product output in response to China's demand, increased residual chip volumes should affect local fiber markets and slow price increases.

Quarterly Average Prices for Market Pulp
($ per metric ton) and U.S. Pulp Logs ($ per 10 tons)

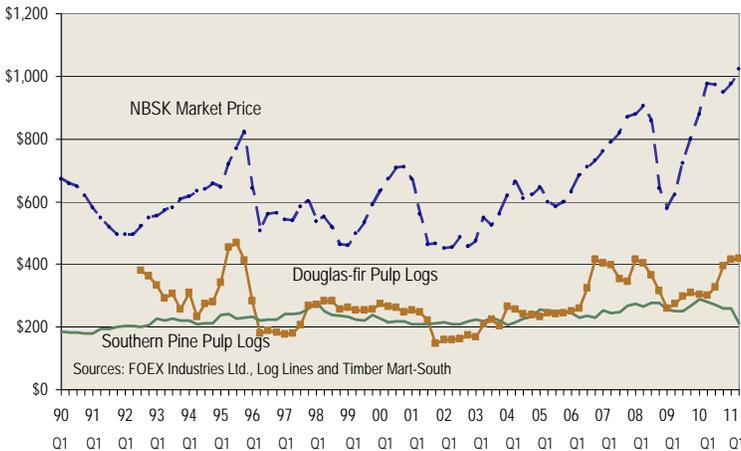Sources: FOEX Industries Ltd., Log Lines and Timber Mart-South

Figure 5. Market Pulp and U.S. Pulp Log Prices

Prices for softwood market pulp rose second quarter, following similar movements in broad commodity price Indicies. Yet, prices for NBSK in the US seem poised to fall as prices for softwood pulp in China have already slipped second quarter. In the past, trends in China's domestic softwood pulp markets have been a leading indicator of global markets.

Quarterly U.S. Timberland Values ($ per acre)

Source: NCREIF

Figure 6. U.S. Timberland Values in Private Property Markets

As reported by NCREIF, private market values in the US South continue to decline slightly since the end of 2009. The US Pacific Northwest has continued flat since the end of 2009.

Quarterly EBITDDA Multiples for Privately Traded Timberland (trailing 4-quarter EBITDDA)

Figure 7. U.S. Timberland Valuation Multiples in Private Property Markets

Timberland valuation multiples – or price-to-earnings ratios – continued to diverge during the second quarter of 2011, as timberland values decreased slightly in the US South and Pacific Northwest. The cause in the increase in the P/E ratio in the two regions can be attributed to income, which is calculated over four trailing quarters. In the South, the four quarter moving average income decreased by six percent due to weak domestic US demand. In the West income grew by 15 percent due to strong demand from Asia.

Monthly Securitized Timberland Share Value (Indexed to 100 at start date)
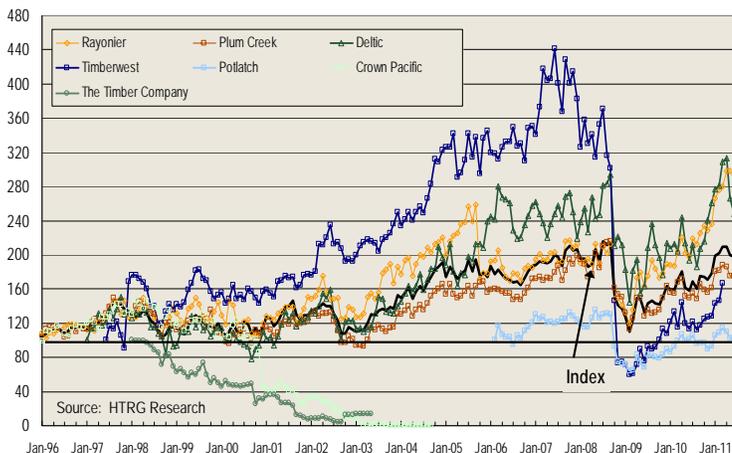

Figure 8. Hancock Securitized Timberland Index

In the second quarter of 2011, the Hancock Securitized Timberland Index reversed the trend from previous quarters and lost value. All companies that compose the Index recorded losses during the second quarter, a trend that follows the overall performance of the equities markets. The second quarter of 2011 is the final time we include the performance of Timberwest in our calculations, as the company was acquired by British Columbia Investment Management Corporation and the Public Sector Pension Investment Board, and subsequently delisted.

Quarterly U.S. South Timberland Values ($ per acre)
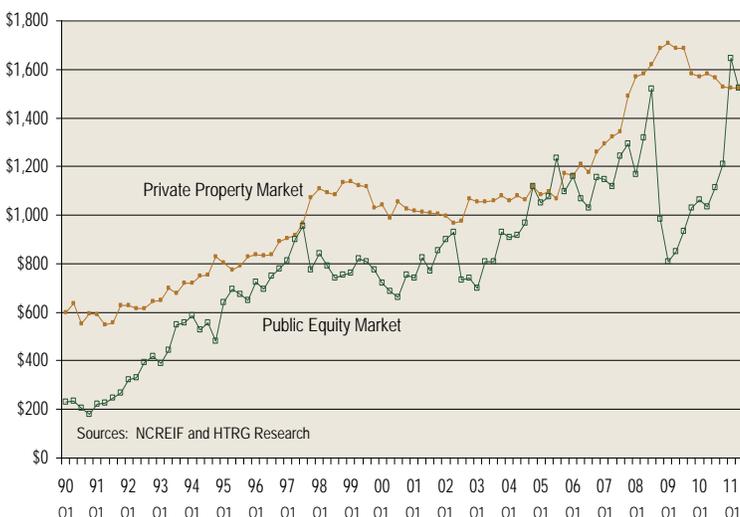

Figure 9. U.S. South Timberland Values in Public Equity and Private Property Markets

In the first quarter if 2011 we saw our Index of publicly traded timberland companies rise significantly. This increase was further magnified by the inclusion of Weyerhaeuser in the Index, which is now structured as a timber REIT. In the second quarter of 2011 public timberland followed the downward trend in the equities markets, and ended seven percent below first quarter values. Privately held timberland has shown little activity so far this year.

Geographical Portfolio Diversification

Further reductions in risk posed by extreme natural events can be achieved with geographical diversification within a timberland portfolio.

For example, properties in the US South and the US Pacific Northwest can be combined with holdings in Australia or New Zealand, as the regions are unlikely to experience damaging natural events in the same time period. Geographical diversification has historically reduced total portfolio exposure to natural disaster risks.

Salvage Value Recovery

Salvage operations represent another important aspect of loss mitigation. A large portion of timber damaged by a natural event is often salvageable. For example, much of the value from sawtimber sized trees can be recovered after a fire, as frequently only the outside of the tree is charred. Despite the possibility of spot prices paid for salvaged timber being lower, especially if the loss event is widespread rather than localized, salvage opportunities help reduce the overall revenue loss from the event.

Summary

Twenty years of historical loss data indicate that the risk of a catastrophic loss for a timberland portfolio is low at 0.1 percent per year on average. Fire damage has been the leading cause of loss at just over 0.06 percent per year on average, followed by damage from storms, at nearly 0.04 percent per year on average.

Losses caused by natural events can be effectively mitigated with active forest management and portfolio diversification. While total revenue losses can be eased with timber salvage operations.

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NOTES:

Figure 1. The composite price for southern sawtimber is based on quarterly average Timber Mart-South published prices for pine sawtimber and chip-n-saw stumpage. Pacific Northwest prices are derived from quarterly average Log Lines published prices for whitewoods and Douglas-fir with internal analysis of logging costs for stumpage calculations. New Zealand export prices are based on New Zealand Ministry of Forestry quarterly average published prices for radiata unpruned A, J, and K sort export logs with internal analysis of logging costs for stumpage calculations. Northeast sawtimber prices are calculated from internal analysis.

Figure 2. Quarterly southern pine (Westside), kiln dried, 2x4 #2 lumber price published by Random Lengths. Timber Mart-South published southern pine sawlog and chip-n-saw log prices converted to lumber scale using RISI historical lumber recovery rates as published in their North American Lumber Forecast.

Figure 3. Quarterly Douglas-fir, green 2x4 lumber (Portland rate) and Hem-Fir (coast), kiln dried, 2x4 lumber prices published by Random Lengths. Douglas-fir and whitewood sawlog prices derived from Log Lines published prices for #2 and #3 sawlogs in various regions in the Pacific Northwest converted to lumber scale using RISI historical lumber recovery rates as published in their North American Lumber Forecast.

Figure 4. Pulpwood composite prices are derived from quarterly average Timber Mart-South published prices for southern pine pulpwood stumpage, Log Lines published whitewood and Douglas-fir pulp logs with internal analysis of logging costs for the Pacific Northwest, and HTRG analysis of spruce/fir pulpwood in the Northeast.

Figure 5. Quarterly NBSK pulp prices derived from monthly list prices reported by FOEX industries Ltd. Southern pine pulp log prices published by Timber Mart-South. Pacific Northwest Douglas-fir pulp log prices published by Log Lines. Pulp log prices expressed in multiples of 10 to accommodate market pulp pricing scale.

Figure 6. Regional NCREIF timberland market value per acre is derived by dividing the total regional market value at quarter end by the number of acres reported in that region.

Figure 7. EBITDDA multiples are calculated using NCREIF timberland value per acre at quarter end divided by trailing four-quarter average NCREIF net income per acre.

Figure 8. The Hancock Securitized Timberland Index (HSTI) uses a base-weighted aggregate methodology (similar to that used to construct the S&P 500) to calculate a market capitalization-weighted value for seven publicly traded timber-intensive forest products companies. Base weights were adjusted for the emergence of new companies or at the beginning of each year. Dividends are not reinvested. The companies included in the HSTI have no investment relationship with Hancock Timber Resource Group.

Figure 9. Public equity values are derived from our Timberland Enterprise Value per Southern Equivalent Acre (TEV/SEA) calculation for seven timber-intensive publicly traded companies as compared to southern timberland values per acre calculated from the NCREIF database. TEV is a quarterly estimate based on total enterprise value (total market equity + book value debt) less estimated value of processing facilities, other non-timber assets and non-enterprise working capital. SEA uses regional NCREIF $/acre values to translate a company's timberland holdings in various regions to the area of southern timberland that would have an equivalent market value. Rayonier has been added to the index as of Q1 2004 when they changed their status to a REIT. Potlatch recently changed its status to a REIT in Q4 2008. Weyerhauser was added to the Index at Q1 2011 after obtaining REIT status.

References to expected investment performance in this newsletter are based on historical information and are based on managements projections.