NATURAL RESOURCES

Economic and Revenue Forecast

Fiscal Year 2012
First Quarter

September 2011

WASHINGTON STATE DEPARTMENT OF
Natural Resources
Peter Goldmark - Commissioner of Public Lands

Acknowledgements

The Washington Department of Natural Resources' (DNR) *Economic and Revenue Forecast* is a collaborative effort. It is the product of information provided by private individuals and organizations, as well as DNR staff. Without their contributions, the quality of the Forecast would be greatly diminished.

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Prepared by
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Acronyms and abbreviations

bbf	Billion Board Feet
CDN$	Canadian dollar
CPI	Consumer Price Index
Cwt	Hundred pounds
CY	Calendar Year
DNR	Washington State Department of Natural Resources
FDA	Forest Development Account
Fed	U.S. Federal Reserve Board
FOMC	Federal Open Market Committee
FY	Fiscal Year
GDP	Gross Domestic Product
IMF	International Monetary Fund
ISM	Institute for Supply Management
mbf	Thousand board feet
mmbf	Million board feet
NAFTA	North American Free Trade Agreement
OPEC	Organization of Petroleum Exporting Nations
PPI	Producer Price Index
Q1	First quarter of year (similarly Q2, Q3, and Q4)
QE2	Quantitative Easing, Round 2
RCW	Revised Code of Washington
REIT	Real Estate Investment Trust
RISI	Resource Information Systems, Inc.
RMB	Renminbi, China's currency − the basic unit is the yuan
RMCA	Resource Management Cost Account
SA	Seasonally Adjusted
SAAR	Seasonally Adjusted Annual Rate
TIMO	Timberland Investment Management Organization
US$	U.S. dollar
WWPA	Western Wood Products Association
WTO	World Trade Organization
Y	Japanese yen

Preface

This *Economic and Revenue Forecast* projects revenues from Washington State trust lands managed by the Washington State Department of Natural Resources (DNR). These revenues are distributed to management funds and beneficiaries as directed by statute. The Forecast revenues are organized by source, fund, and fiscal year.

DNR revises its Forecast quarterly to provide updated information for trust beneficiaries and department budgeting purposes. (See the Forecast calendar at the end of this section for release dates.) We strive to produce the most accurate and objective forecast possible, based on current policy direction and available information. Actual revenues depend on DNR's future policy decisions and changes in market conditions beyond our control.

This Forecast covers fiscal years 2012 through 2015. Fiscal years for Washington State government begin on July 1 and end on June 30. For example, fiscal year 2012 runs from July 1, 2011 through June 30, 2012.

The baseline date (the point that designates the transition from "actuals" to forecast) for this Forecast is August 1, 2011. The forecast beyond that date is based on the most up-to-date market and economic information available at the time of publication, including DNR's timber sales results through August 2011.

Unless otherwise indicated, values are expressed in nominal terms without adjustment for inflation. Therefore, interpreting trends in the Forecast requires attention to inflationary changes in the value of money over time separate from changes attributable to other economic influences.

Each DNR Forecast builds on the previous one, emphasizing ongoing changes. Before preparing each Forecast, international and national macroeconomic conditions and the demand and supply for forest products are re-evaluated. The impact on projected revenues from DNR-managed trust lands is then evaluated, given the current economic conditions and outlook.

DNR Forecasts provide information used in the *Washington Economic and Revenue Forecast* issued by the Washington State Economic and Revenue Forecast Council. The release dates for DNR's Forecasts are determined by the state's Forecast schedule as prescribed by RCW 82.33.020. The table below shows the anticipated schedule for DNR's future *Economic and Revenue Forecast*s.

Economic Forecast Calendar

Forecast Title	Baseline Date	Draft Revenue Data Release Date	Final Data and Publication Date (approximately)
November 2011	End Q1,FY 2012	Nov. 4, 2011	Nov. 30, 2011
February 2012	End Q2, FY 2012	Feb. 3, 2012	Feb. 28, 2012
June 2012	End Q3, FY 2012	June 1, 2012	June 30, 2012
September 2012	End Q4, FY 2012	Sept. 7, 2012	Sept. 30, 2012

Introduction and Forecast Highlights

Market Changes Since the June Forecast. The U.S. economy has weakened since the June Forecast and the outlook has become more pessimistic. Revisions to U.S. Gross Domestic Product (GDP) data have revealed that the Great Recession was much deeper than previously estimated. With the U.S. economy close to stall speed in the first half of this year, there is an increased likelihood that the fragile recovery will give way to another recession. New home construction remains in the doldrums with millions of housing units in various stages of foreclosure. Unemployment remains stuck around 9 percent, further discouraging home buying and impeding the recovery.

Lumber and Log Prices. Regional log prices have held relatively steady since the June Forecast. The price of a "typical" DNR log delivered to the mill was $486/mbf in August. The higher than expected 2011 log prices have been attributed to the dramatic increase of logs from Pacific Northwest private forestlands being exported to China. West Coast lumber prices are back up to where they were at the time of the June Forecast, with the Random Lengths' Coast Dry Random and Stud composite lumber price rebounding to $277/mbf in August after falling to $253/mbf in June.

Timber Sales Prices. The final average DNR timber sales price for FY 2011 was a respectable $339/mbf, slightly less than the $343/mbf in June's near-to-the-end-of-the-fiscal-year Forecast. The delayed recovery of the U.S. housing market will act to keep DNR timber stumpage prices down over the next two to three years. Based on lack of any improvement in the housing sector and the general worsening of the U.S. economy, we are revising forecast stumpage prices down from $300/mbf for FYs 2012 and 2013 to $282 and $274/mbf, respectively. We are decreasing the forecast FY 2014 stumpage price slightly to $308/mbf from $310/mbf, while keeping the FY 2015 price at $320/mbf. If the recent increased exports of West Coast logs and lumber to China continue, as expected, this will help support DNR timber sale prices (even though Federal law prohibits direct export of unprocessed logs from state trust lands).

Timber Sales Volume. In DNR's June timber sales auction, seven of 15 sales offered received no bids and as a result the final DNR timber sales volume for FY 2011 was 591 mmbf, down from the 607 mmbf predicted in the June Forecast. To offset the 16 mbf volume reduction in FY 2011, we have increased the forecast timber sales volume by 5 mmbf annually in FYs 2012,

2013, and 2014, from 674 mmbf to 679 mmbf each year, as required to meet DNR's 1995-2014 sustainable harvest level. A total of 55 mmbf sold at DNR's July and August timber sale auctions (with five of 13 sales offered in July receiving no bids), so sales volume will need to pick up throughout the fiscal year in order to meet the 679 mmbf target for FY 2012.

Timber Removal Volume and Prices. The final volume of sold timber removed in FY 2011 was 670 mmbf, slightly less than the 679 mmbf predicted in the June Forecast. Based on the results of our timber purchasers' survey and on the moving of some timber sales volume forward from FY 2011 into FYs 2012-2014, we are modifying forecast removal volumes slightly for FYs 2012-2015. Forecast removals for FY 2014 are up by 33 mmbf (five percent), with little change (one percent or less) for FYs 2012, 2013, and FY 2015. As a result of downward revisions to timber sales prices for FYs 2011-2014, forecast timber removal prices are revised down through the Forecast period with the largest adjustment in FY 2013 with a new projected removal price of $282/mbf, down seven percent from the $303/mbf in the June Forecast.

Bottom Line for Timber Revenues. Timber sales program revenues for recently completed FY 2011 came in at $187.8 million, the highest since FY 2006, with proceeds from timber sale removals accounting for $184.3 million (other revenues were from a contract default settlement, forest improvement treatment projects, and interest charges). The total timber revenues for the 2009-2011 Biennium were $368.8 million. Largely as a result of the changes in forecast timber removal prices, we are revising forecast timber revenues down from the June Forecast by $18.1 million (five percent) to $359.5 million for the 2011-2013 Biennium and down by $6.6 million (two percent) to $403.3 million for the 2013-2015 Biennium.

Lease and Other Non-Timber Revenues. Final FY 2011 revenues from upland leases and aquatic lands leases came in very close to the June Forecast. Revenue from agricultural leasing is being revised downward by $200,000 (one percent) annually for FY 2012-2013. For aquatic lands, there are offsetting adjustments to the Forecast for FYs 2012-2015. Based on continuing high prices and less price volatility at DNR's geoduck auctions over the last two years, including an August auction with a new high price of $11.62/lb., revenue from geoduck sales is raised by $5.7 million for FY 2012 and by about $4.1 million per year for FYs 2013-2015. But revenue from other aquatic lands programs (namely water dependent use leases and non-water dependent use leases) are reduced by about $1.0 million per year based on the lower revenues in these categories in FY 2011 and due to underlying economic factors.

Risks to the Forecast. At this point in time, we judge the downside potential to the overall forecast to be greater than the upside potential because of the downside risks to timber sales volume (and therefore timber removal volume) due to potential environmental and policy issues. In addition, the extremely uncertain and volatile economic conditions in the world and the United States make economic forecasting especially difficult at the present time.

Part 1. Macroeconomic Conditions

This section briefly reviews current and predicted conditions of the United States and world economies because these macroeconomic conditions affect the stumpage bid prices for Washington State Department of Natural Resources' (DNR) timber sales.

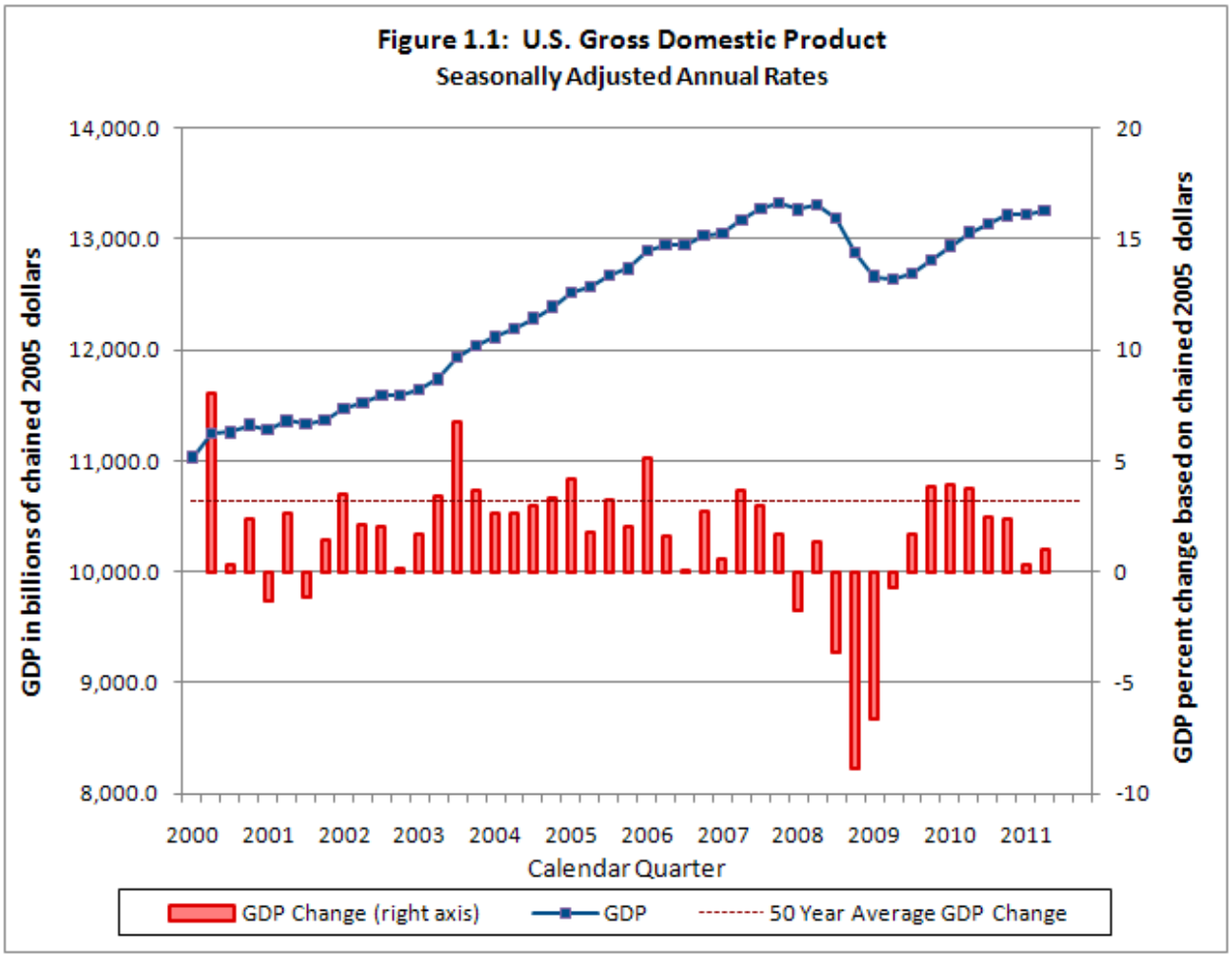
International supply and demand also affect domestic timber stumpage prices and lumber prices. On the supply side, Canada has a strong influence on the U.S. wood products sectors as it is a major source of lumber which can enter U.S. markets quite readily. On the demand side, China is an important market for world commodities including wood products.

U.S. economy

Gross Domestic Product (GDP). The shock of the Great Recession on the U.S. economy is clearly seen on **Figure 1.1** as U.S. real gross domestic product (GDP)–the output of goods and services produced by labor and property located in the United States–actually fell during 2008 and the first half of 2009. And now we know it was worse than previously thought because the U.S. Bureau of Economic Analysis (BEA) has recently made large downward revisions to the GDP data from 2007 forward. The worst quarters for GDP decline during the recession, 4Q 2008 and 1Q 2009 (see **Figure 1.1**), were revised downward from -6.8 to -8.9 percent and from -4.9 to -6.8 percent respectively. As a result, the trough on the GDP line (blue line on **Figure 1.1**) was much deeper than originally estimated.

In 4Q 2009 through 2Q 2010, growth in GDP resumed growing at a rate similar to that before the recession began, with annualized GDP growth rates in the 3.8 to 3.9 percent range (see **Figure 1.1**). But for four quarters in a row now growth has been at a slower rate and GDP (blue curve) is beginning to flatten out. There also were major downward revisions to the BEA GDP data for the nearby quarters 4Q 2010 and 1Q 2011 (from 3.1 to 2.3 percent and from 1.8 to 0.4 percent respectively), dampening some of recent optimism on nascent GDP recovery. Not only has growth slowed, but the recession was significantly worse than earlier estimates suggested. With the data revisions and slowing growth, real GDP is still not back to its pre-recession peak.

GDP increased at an annual rate of 1.0 percent in the second quarter of 2011 (see **Figure 1.1**). This was another disappointing result as the consensus prediction by economists was 1.8 percent. But it was higher than first quarter's 0.4 percent. The acceleration in real GDP in 2Q 2011 primarily



reflected a deceleration in imports, an upturn in federal government spending, and an acceleration in nonresidential fixed investment that were partly offset by a sharp deceleration in consumer spending.

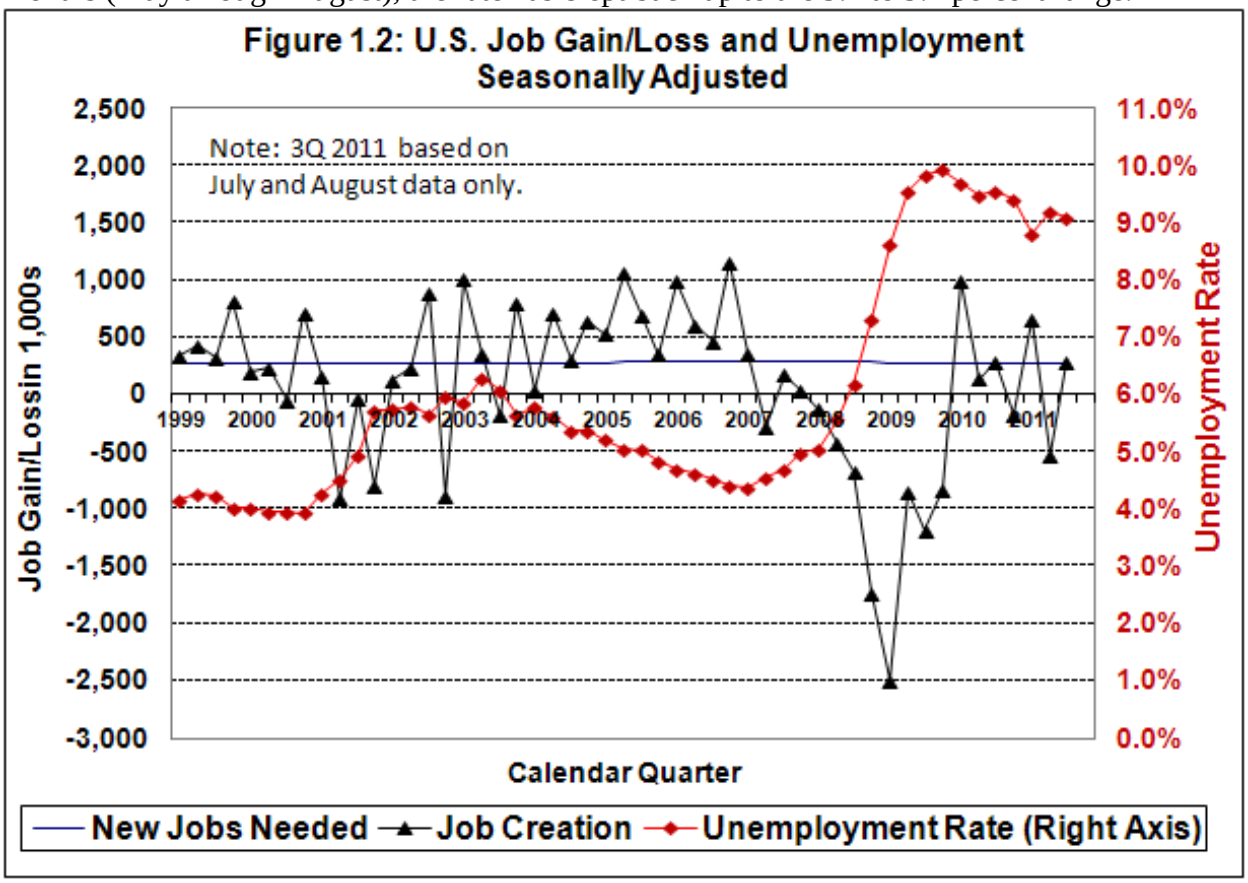
The IMF has lowered its projections for U.S. GDP growth significantly, from 2.5 percent down to 1.5 percent for 2011 and from 2.7 percent down to 1.8 percent for 2012.

Employment.

Our economy is suffering today from an extraordinarily high level of long-term unemployment, with nearly half of the unemployed having been out of work for more than six months.

Ben Bernanke
Chairman, Federal Reserve
August 26, 2011

The national unemployment rate has been falling from its high point of 10.1 percent in October 2009, going down to 8.8 percent by March 2011 (see **Figure 1.2**). This reduction in the unemployment rate by 1.3 percent in 17 months was welcome news. However, in the last four months (May through August), the rate has crept back up to the 9.1 to 9.2 percent range.



An examination of the data indicates that the recovery in employment has been less than the reduction in the unemployment rate from 10.1 percent to 9.1 percent over the 19-month period from October 2009 to August 2011 would indicate. The number of unemployed persons has fallen by 1.66 million during that period but the level of employment has increased by only 1.23 million, meaning that the total labor force actually fell by 430,000. Ignoring monthly fluctuations, the number of persons in the labor force and the number of persons unemployed has stabilized over the last year.

The unemployment rate would be higher than it is except for a lack of growth in the U.S. labor force. The labor force usually grows about 0.7 percent each year because of population growth–natural increase plus net inmigration. But the total number of persons in the labor force has been stagnant in the last three and one-half years.

The recession has slowed U.S. population growth, which normally feeds labor force growth, because it has slowed down inmigration. In each of the past four years, the Census Bureau has had to revise downward its estimated level of inmigration, leading to smaller estimates of the overall population growth. And recently there is evidence that the U.S. birth rate has slowed during the recession.

The recession has also contributed to slowing the growth of the labor force in other ways. First, the severity of the recession has expanded the ranks of the long term unemployed to an extent not seen since the Great Depression. Having very limited job prospects, many have dropped out of the labor force and stopped looking for work. Second, many younger people, finding their current job prospects bleak, have left the work force and decided to stay in or return to school to improve their future job prospects. Another factor is that that some older workers who have lost their jobs have chosen to retire, often early, rather than reenter the labor force although this is offset by other workers who are postponing retirement for economic reasons.

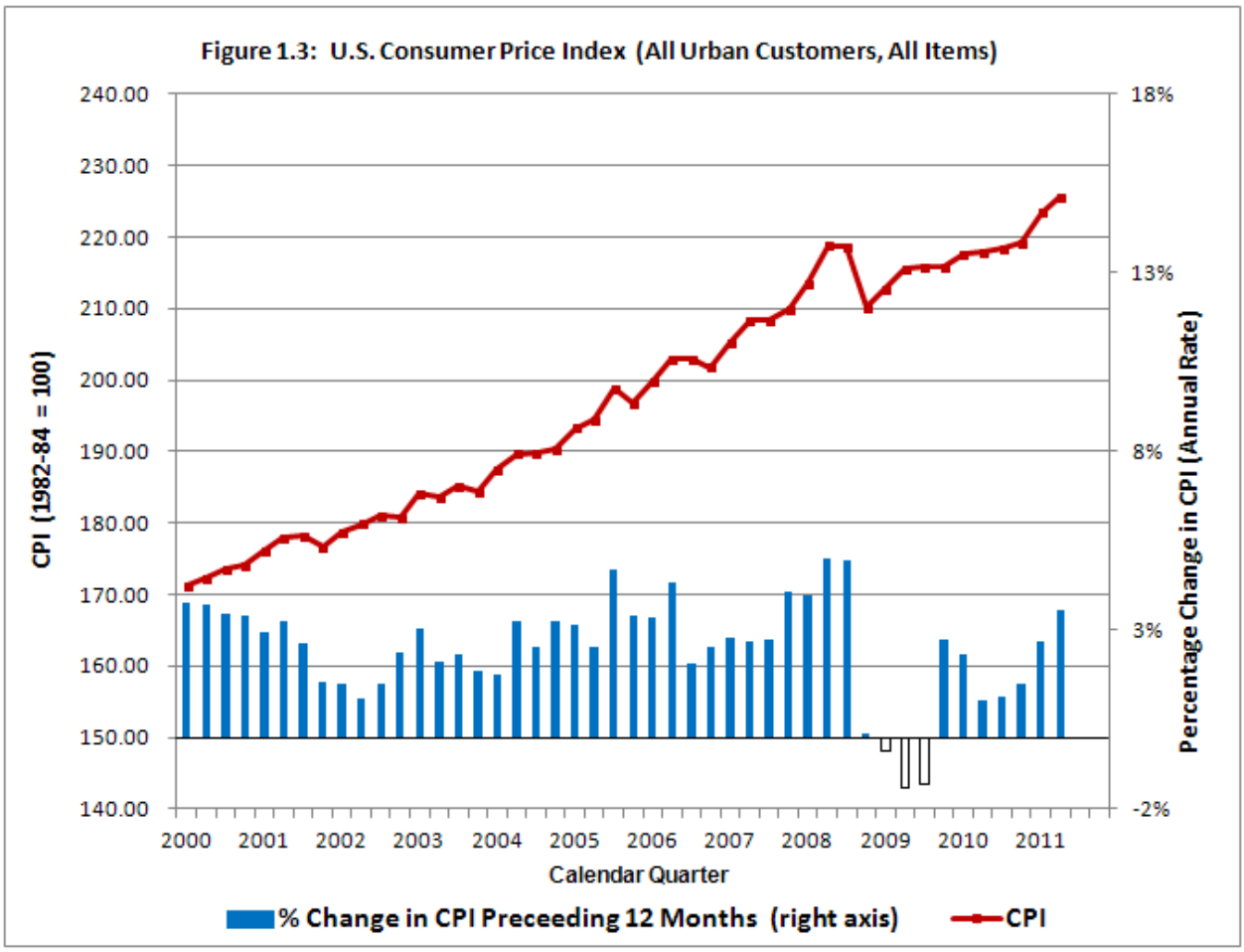
The construction sector, which usually leads the economy out of recession, this time will lag and drag the general economic recovery. An unusual sector slowing employment recovery in this recession is state and local government, which is normally a source of job stability. State and local governments are in severe financial shape and continue to cut jobs, programs, services, and pensions.

A high unemployment rate will continue to be an encumbrance on economic recovery. Most economists are predicting that the unemployment rate will remain elevated for years, remaining above 8.0 percent into 2013. This will tend to reduce a rebound in consumer confidence and consumer spending, which will in turn be a drag on economic recovery.

Consumption. In Q2 2011, Real personal consumption expenditures (PCE) contributed almost nothing to GDP growth, increasing at only a 0.1 percent annualized real rate. This follows on an anemic 2.1 percent increase in Q1 2011 and a more promising 4.0 percent in the fourth quarter of 2010. The fallback is due to the shaky confidence of the shell-shocked American consumer. Continued uncertainty about the U.S. economic recovery has kept the U.S. consumer restrained. Many have cut back by necessity due to job losses and wage losses in the family. The slow growth in employment will limit consumption growth. People with jobs have also become more conservative with their spending, paying down their debt and increasing their savings.

Interest Rates. U.S. interest rates are at or near record lows. The Fed funds rate has remained in the 0.0-0.25 percent range since December 2008. Ten-year U.S. Treasury bonds closed at 2.13 percent on September 1, down from 3.39 on March 1. Conventional 30-year fixed rate mortgages were at 4.70 percent in July, falling for four consecutive months and stayed below 5.00 percent for the thirteenth consecutive month. Four-year new car loans are still low at around four percent, compared with around six percent just a year ago.

Inflation. **Figure 1.3** shows the U.S. inflation rate as percent change in the consumer price index (CPI). As shown by the red line, prices in the United States fell precipitously in 4Q 2008 and did not reach their former mid-2008 level until 4Q 2010. In effect, inflation was zero over that two year period. There was a sharp increase in the CPI in the first half of 2011, almost entirely attributable to higher prices for petroleum products (as a result of the conflicts in North Africa and the Middle East) and food. Oil prices rose steeply from about $85 a barrel at the beginning of December 2010 to a peak of almost $115 a barrel during April and early May 2011. From there oil prices have fallen back to the $83 to $88 a barrel range during the last half of August.



The blue bars on **Figure 1.3** show the annual percentage changes of the CPI on a year-over-year basis. The first three quarters of 2009 all had negative year-over-year inflation (white bars below the zero line in **Figure 1.3**) because they all included the precipitous drop in 4Q 2008. Recently the rate of inflation is increasing, with a 3.6 percent increase from the end of 2Q 2011 compared to the end of 2Q 2010.

The U.S. Dollar and Trade. **Figure 1.4** shows the trade-weighted U.S. dollar index for the last decade. In July 2011, the index in real terms fell to its lowest point in the history of the data series which was started in January 1973, or the lowest point in over 38 years. In real terms it is off 29 percent from its high in 2001.

Figure 1.5 shows the relationship between the real U.S. dollar and the U.S. trade deficit as a percentage of U.S. exports. The trade deficit generally follows the dollar but with a considerable lag. For the last two years, the dollar has generally moved down while the trade deficit has stabilized.

In the second quarter of 2011, U.S. exports climbed to a record high level of $2.11 trillion (SAAR before adjusting for inflation). But imports increased even more, to $2.72 trillion, and the trade deficit at $0.60 trillion held steady at 28 percent of exports. In June 2011, the U.S. trade deficit with China accounted for 50 percent of the entire U.S. trade deficit.

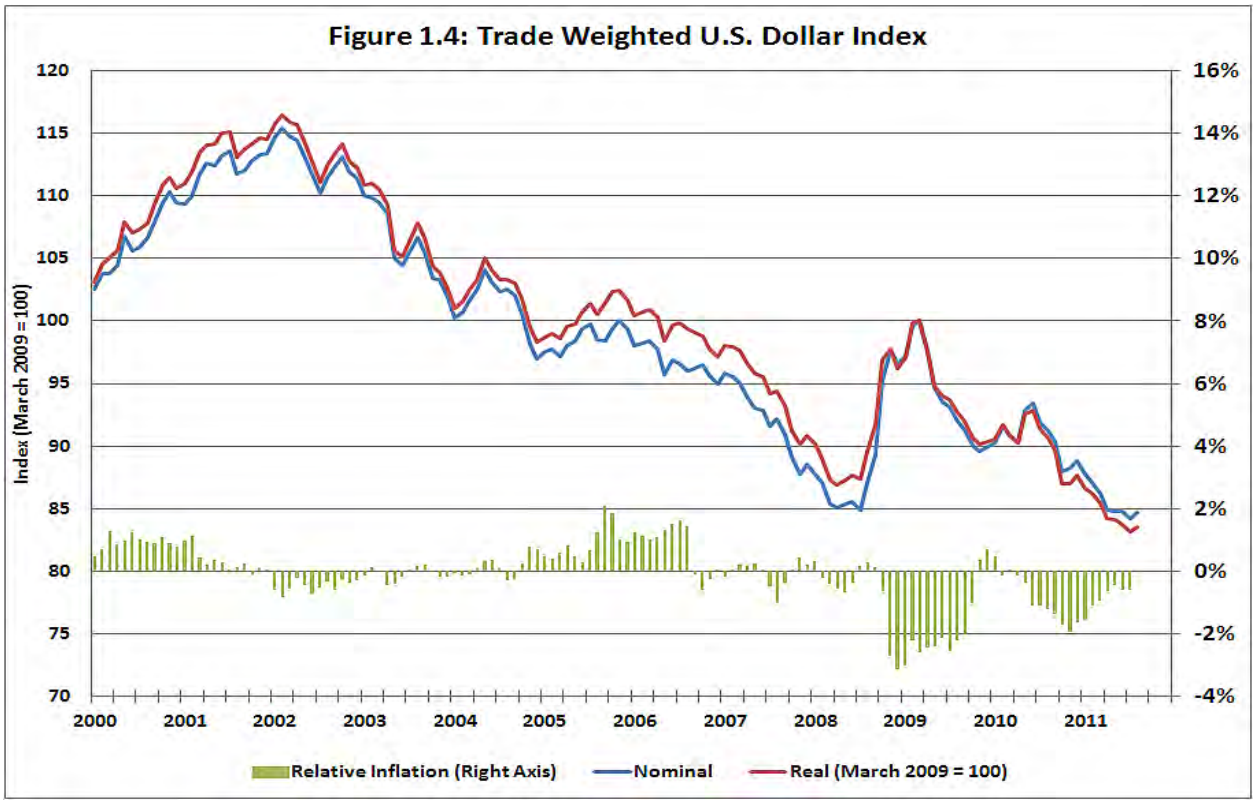


Figure 1.4: Trade Weighted U.S. Dollar Index
Index (March 2009 = 100)
120
115
110
105
100
95
90
85
80
75
70
16%
14%
12%
10%
8%
6%
4%
2%
0%
-2%
-4%
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
Relative Inflation (Right Axis)
Nominal
Real (March 2009 = 100)

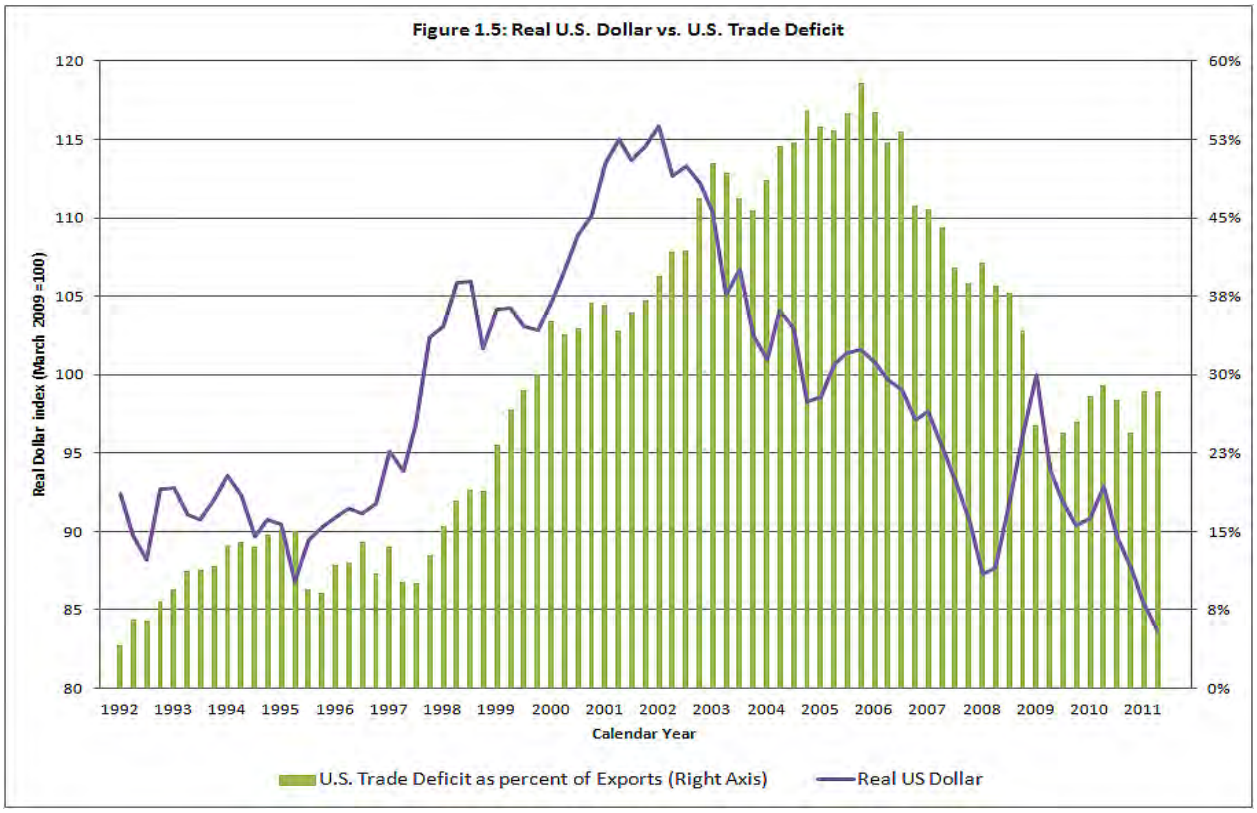


Figure 1.5: Real U.S. Dollar vs. U.S. Trade Deficit
Real Dollar index (March 2009 =100)
120
115
110
105
100
95
90
85
80
60%
53%
45%
38%
30%
23%
15%
8%
0%
1992
1993
1994
1995
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
Calendar Year
U.S. Trade Deficit as percent of Exports (Right Axis)
Real US Dollar

World economy

World events have increased risks to the world economy and they are of interest and concern to the U.S. economy in today's economically interconnected world.

Europe: The economic crisis in Europe drags on without any encouraging prospects of resolution. Over the last almost two years, it seems that Greece's economy and its sovereign debt crisis have been daily news in the U.S financial news pages. The Greek government is trying to respond to demands for austerity from the European Union and the IMF, but the populace is not taking well to the planned cutbacks and changes. Other European countries on the periphery have similar but not so severe debt problems as Greece, with Italy and Spain recently joining Ireland and Portugal on the list of concern. The issue seems to be coming down to how the costs of correcting the situation will be distributed. The more well-off Euro governments including Germany, France, and Finland are moving toward making contributions to a rescue fund to bail out Greece. And there is increasing discussion that German and especially French banks will need to take losses on their bad loans to Greece and possibly to the other countries. Write-offs of bad debt by European banks will create negative ripple effects on the financial sector in the United States. But it is becoming more obvious that severe fiscal austerity programs alone cannot be the solution.

China: China's economy continues it impressive growth, with GDP growth of 10.3 percent in 2010 and 9.7 percent in 1Q 2011 despite the tightening measures that the government has been imposing. China's economy is now the second largest in the world behind the United States, eclipsing Japan's 42-year run in that position. For 2010, the main contributor to China's growth was fixed asset investment in the form of government stimulus spending (e.g., on roads, railroads, and ports), which accounted for 5.6 percentage points of the growth in GDP, down from the 8.7 percentage point contribution in 2009. It was probably this stimulus that kept China's economy strong and prevented the world economy from falling into a deeper recession than it did as the U.S. attempt at stimulus was too small and too directed at bailouts and tax cuts rather than job creation. We shouldn't expect China to pull the world out next time as their fixed asset investment will decline further in 2011. The latest IMF projections have China's GDP growth at 9.5 percent for 2011 and at 9.0 percent for 2012.

Higher commodity prices, higher inflation rates, and the prospect of a housing bubble may slow China's economic growth. But China's economy will have a large impact on the world economy whether it continues its strong growth or whether it should have a major setback, which some are predicting but which we deem to be unlikely over the next several years.

We are in the fragile aftermath of the Great Recession where a return to normalcy seems like a mirage in the desert – the closer we get to it, the further it moves away. Fear and uncertainty have overwhelmed consumer and business behavior. Political gridlock in the nation's capital gives little hope that the full toolkit of policy options will be acted on. In an increasingly interconnected world we are not immune to Europe's problems either. Downside risks outweigh upside risks.

Arun Raha
Chief Economist & Executive Director
Washington Economic Revenue Forecast Council
September 15, 2011

Part 2. Log and Lumber Industry Factors

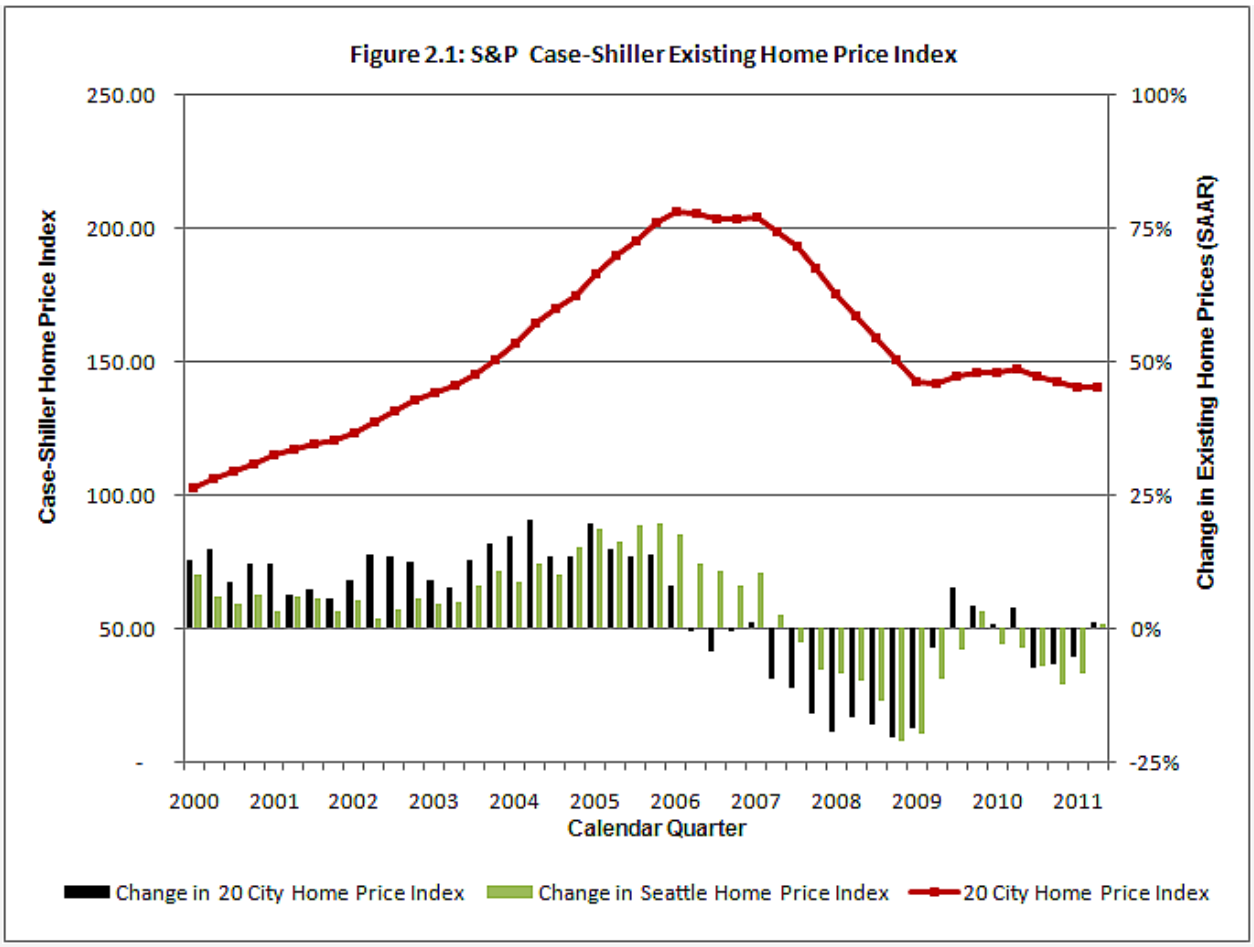
This chapter focuses on specific factors that affect timber stumpage prices and overall timber sales revenues received by the Washington State Department of Natural Resources (DNR). Timber stumpage prices reflect demand for lumber and other wood products, timber supply, and regional and local lumber mill capacity. The demand for lumber and wood products is directly related to the demand for U.S. housing and other end-use markets.

U.S. housing market

The news from the housing market has been particularly dismal. Past recoveries typically got a kick start from a rebound in home construction and spending on furniture, appliances, and other big-ticket items people needed for their new houses and apartments. This time, though, construction is stuck at post-World War II low levels. A huge supply of homes is available for sale, which keeps prices down. Add to that what might be called a shadow inventory of some 4 million homes whose owners are seriously delinquent on their mortgages or in foreclosure. Despite great loan terms and low prices, buyers who qualify for credit are understandably nervous about jumping back into the housing market. And, of course, millions of other potential buyers are underwater on their current mortgages, making it hard for them to sell or refinance.

John Williams
President and CEO, Federal Reserve Bank of San Francisco
September 7, 2011

Housing Prices. Prices of existing homes in the United States have generally been moving sideways the last two and one-half years after having dropped back to mid-2003 levels in the beginning of 2009 (**refer to Figure 2.1**). The Case-Shiller existing home price index, a composite for 20 large U.S. cities, hit a new post-2003 low in 1Q 2011, when the average existing house was worth only 68 percent of what it was worth at the peak of the real estate bubble in 1Q 2006. As shown in **Figure 2.1**, the U.S. home price index moved up slightly in 2Q 2011 after having fallen over the previous three quarters. On a monthly basis, prices were up in all 20 cities for June 2011 versus May 2011 (except for Portland with no change), but down on an annual basis in all 20 cities when compared with June 2010.



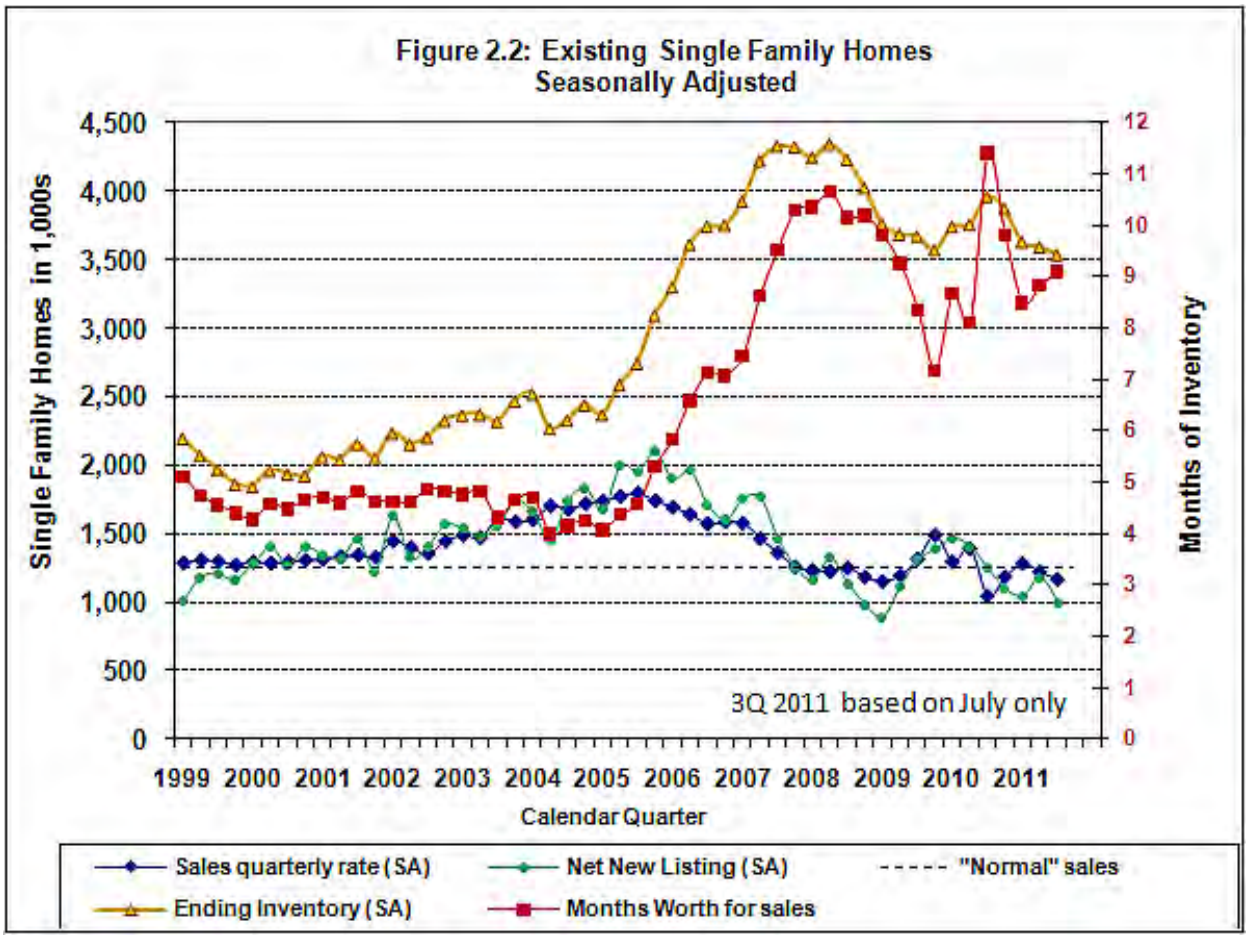
The CoreLogic Home Price Index, another data series, showed that average existing home prices in the United States in July increased for the fourth consecutive month on a month-over-month comparison. According to CoreLogic's chief economist Mark Fleming:

> *While July's numbers remained relatively positive, particularly for non-distressed sales which have been stable, seasonal influences are expected to fade in late summer* [CoreLogic's average is not seasonally adjusted]. *At that point the month-over-month growth will most likely turn negative. The slowdown in economic growth and increased uncertainty caused by the recent stock market volatility will continue to exert downward pressure on prices.*

Most economists do not expect housing prices to begin increasing again at least until the end of 2012.

In March 2011, the Case-Shiller existing home price index for Seattle fell to its lowest level in the recession, to a level not seen since the fall of 2001. After falling five quarters in a row, Seattle housing prices were up very slightly in 2Q 2011 with the average existing house in Seattle still worth only 71 percent of what it was worth at the peak of Seattle home prices in May 2007. As shown in **Figure 2.1,** Seattle home prices have lagged the trend in U.S. home price changes.

Existing Home Sales. Existing home sales are trending back down again after having risen for two quarters from the worst quarter on record in 3Q 2010 (see **Figure 2.2**). In July, existing homes sold at the seasonally adjusted quarterly rate of 1.17 million, about six percent less than the "normal" pre-bubble rate of 1.25 million.

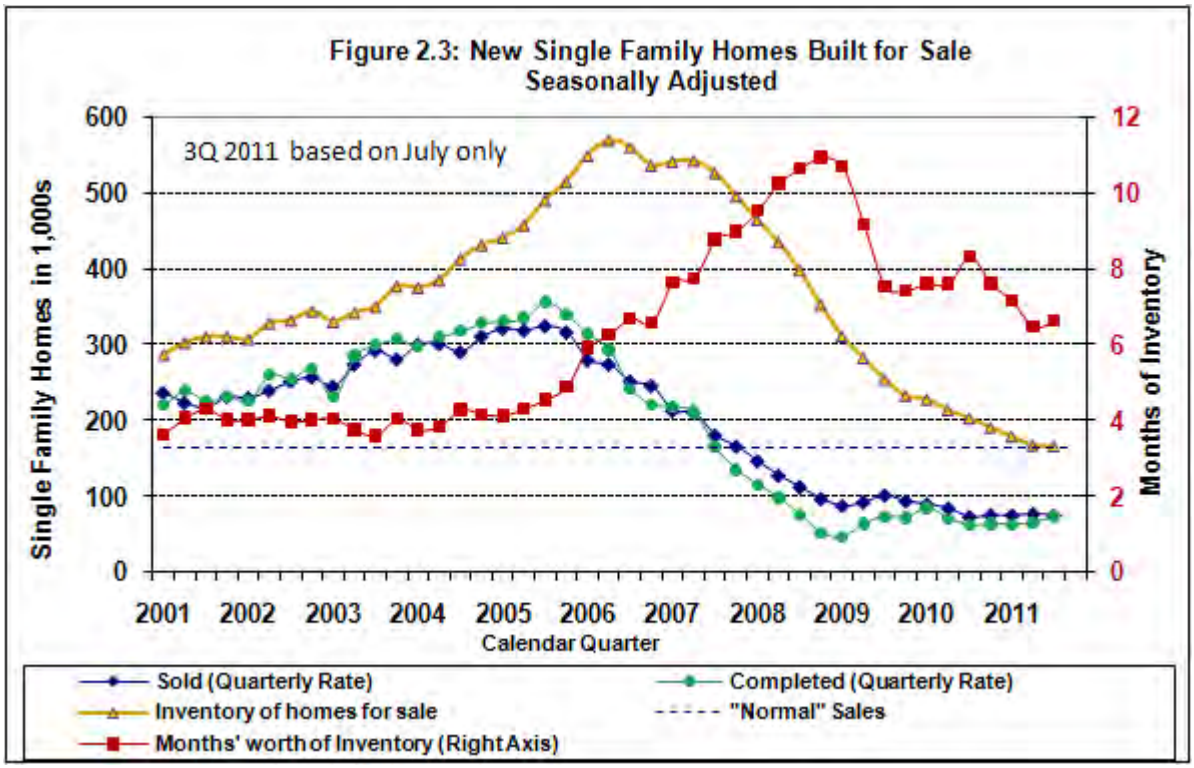


The problem is that there are so many more existing homes in the inventory for sale than in more normal times, as shown on the yellow "ending inventory" curve in **Figure 2.2**. Since the beginning of 2011, the number of existing homes for sale has remained around 3.6 million, falling in the range of 3.6 million to 4.0 million which has persisted since the beginning of 2009 (see **Figure 2.2**). That is down from the range of 4.2 million to 4.3 million existing homes which were for sale for six quarters from 2Q 2007 through 3Q 2008. But it is still way above the historically more normal range of 1.8 million to 2.5 million existing homes in the inventory for sale.

Because the number of homes in the inventory is so high, so is the "months' worth of inventory" at current sales levels. As shown on **Figure 2.2**, the months' worth of inventory of existing homes for sale has been highly volatile in the last two years as federal incentive programs for home buyers have come and gone. The months' worth of inventory measure is rising again and is up to 9.1 months in July. This compares with four to five months in more normal times (see **Figure 2.2**).

The excess supply of existing homes is weighing on the housing market and contributing to lower home prices and a depressed level of new home construction. Making things worse is the huge "shadow inventory" of foreclosed properties and future foreclosures in the pipeline (distressed properties that haven't yet hit the market), estimated to be in the range of 3.5 million to 4 million units.

New Home Sales. New home sales continue to bounce along the bottom, averaging only 300,000 per year (75,000 quarterly rate) over the last year through July. This rate of new home sales is only 46 percent of the "normal" annual rate of 650,000 per year (162,500 quarterly rate). See **Figure 2.3**.



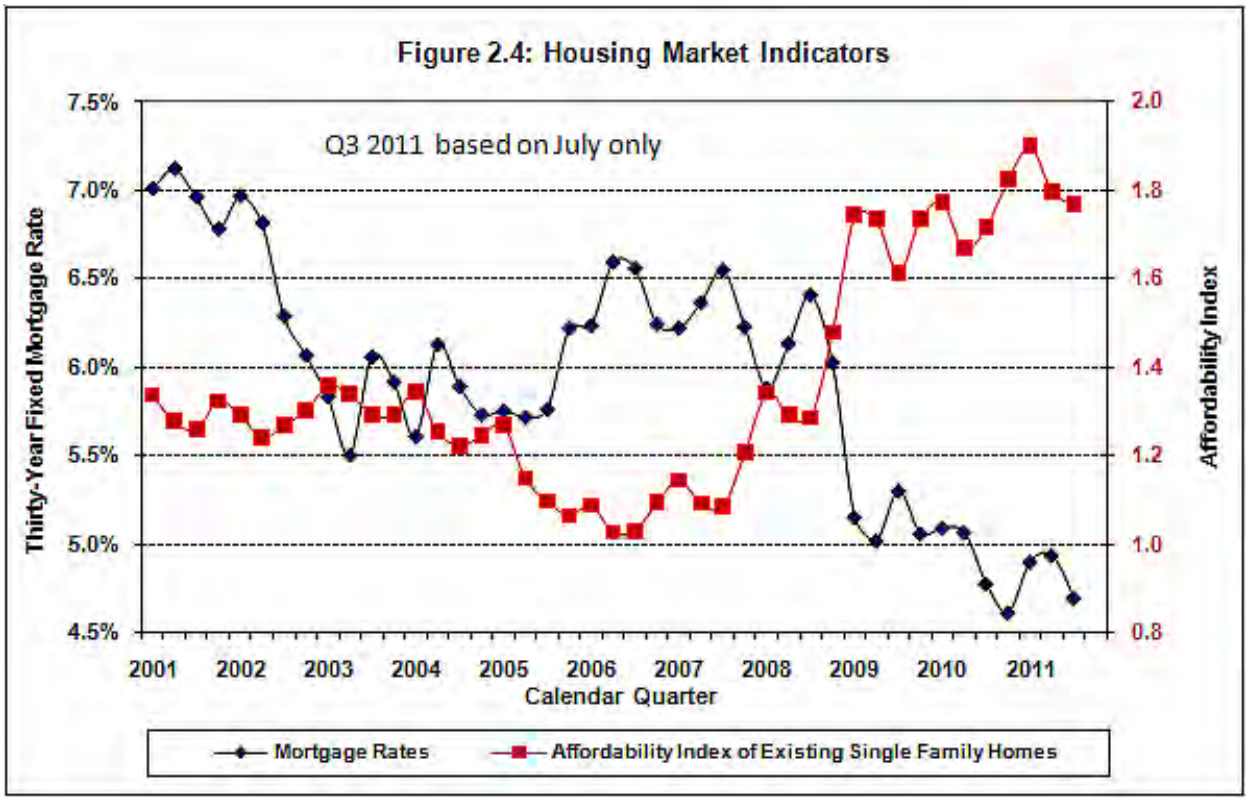
From mid-2010 to mid-2011, only 252,000 new homes were constructed for sale. This is only 18 percent of the new homes which were built in the peak year of 2005 (see **Figure 2.3**). This plunge and continued trough in new home construction is part of the drag on recovery of the U.S. economy, but it is a necessary step in repairing the housing market.

The dramatic drop in new house construction has brought the inventory of newly built homes down to its lowest level in 10 years. At a high in July 2006, there were 572,000 new single family homes available to purchase in the United States. At the end of July 2011, there were only 165,000 available (see **Figure 2.3**).

The months' worth of inventory of new homes for sale has worked its way down to 6.6 months in July from a monthly high of 12.2 months in January 2009 (the quarterly high was 10.9 months in 4Q 2008), another good development (see **Figure 2.2**). This compares with the pre-2006 "normal" of about four months' worth of inventory of new homes. New home completions and

sales won't (and shouldn't) increase significantly until the excess supply of existing homes, including those in the foreclosure pipeline, is absorbed.

Affordability. U.S. mortgage loan rates remain at historically low levels (see **Figure 2.4**). The 30-year fixed mortgage rate has been below 5 percent for 13 consecutive months through July and has been dropping again since March. The family income required to qualify for a mortgage



The Affordability Index is the ratio of median family income to the income required to quality for the median-priced existing single-family home. In July 2011, the affordability index was $61,557/$34,800 or 1.769.

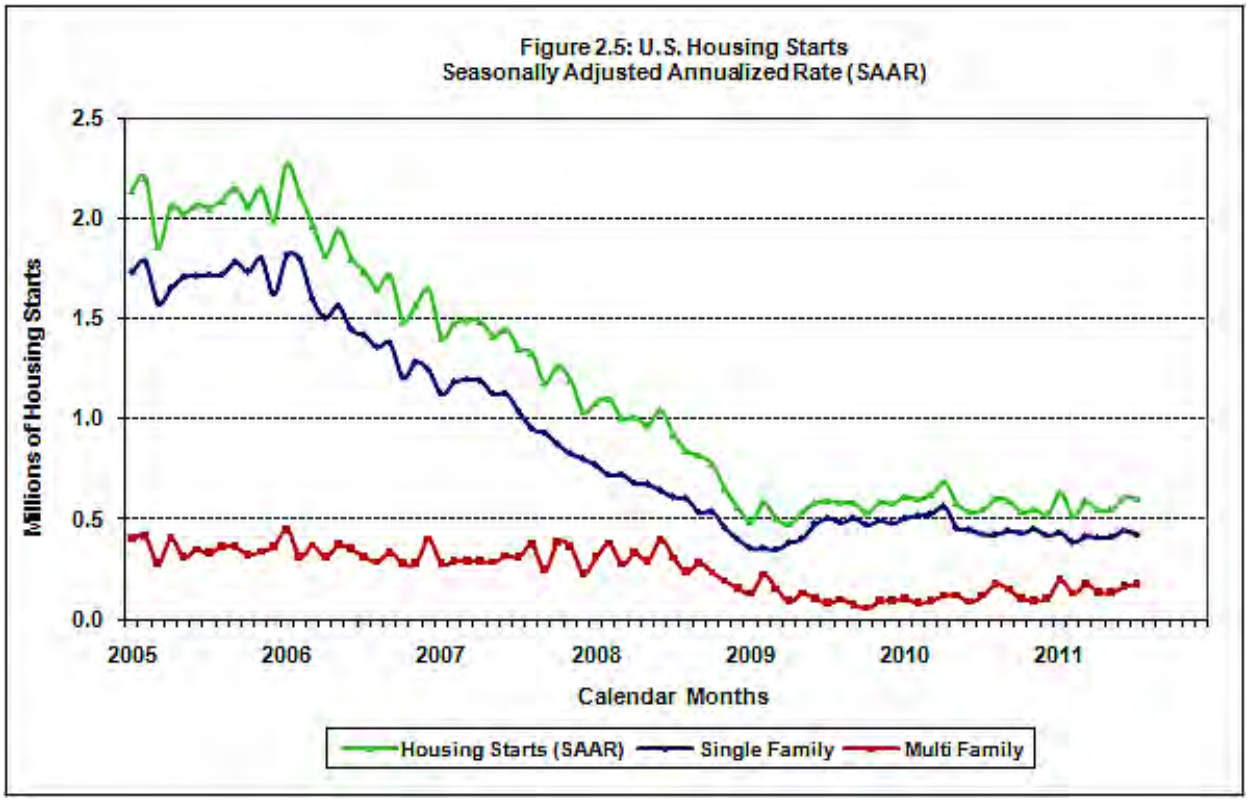
on the $174,800 median-priced existing single family home in the United States at July's rate of 4.70 percent is only $34,800 per year. This compares with an average qualifying income of $45,984 in 2008 and $52,992 in 2007 to purchase the median priced existing single family home in those years. Median family income was $61,557 in July, compared to an average of $63,366 in 2008 and $61,173 in 2007.

Cyclically low housing prices and mortgage rates have resulted in very affordable housing (see **Figure 2.4**), but this is having little impact on housing demand and home sales. This is because of a combination of factors, including:

- Potential homebuyers are very hesitant to buy when prices may still be going down.
- Many potential homebuyers are under "house arrest" in their current "underwater" mortgages, where they owe more than the current value of the home.
- Many normally potential homebuyers are unemployed or fear losing their jobs.

- Banks have severely tightened mortgage loan requirements such as requiring high down payments and excellent credit ratings.

Housing Starts. New housing starts continue to move sideways at a historic low level as they have been doing since November of 2008 (see **Figure 2.5**). During this almost three year period, starts have fluctuated in a range between 478,000 (the all time record low month since the Census Bureau began tracking housing starts in 1959) and 687,000 on an annual basis (SAAR), without any obvious trend up or down.



Single-family starts continue their sideways movement, averaging a low level of 420,000 (annual rate) for the first seven months of 2011 (see **Figure 2.5**). Multifamily housing units starts also remain in a historic low range, but appear to be rising slowly out of the 2009-2010 trough. One of the early signs of a recovery in housing will be an increase in multifamily starts, so the trend in multifamily starts bears watching. Housing rental rates have started rising which should encourage building of more multifamily units.

Figure 2.6 shows the annual rate of new housing starts in the United States since 2001 by quarter. It clearly shows that the United States overproduced new housing units during the housing bubble (i.e., housing starts exceeded the normal 1.6 million annual rate of new housing demand). The rate then fell off dramatically from 2006 to 2009 and has remained in a flat trough since the beginning of 2009. Most economists are forecasting that housing starts will be flat for at least another year.

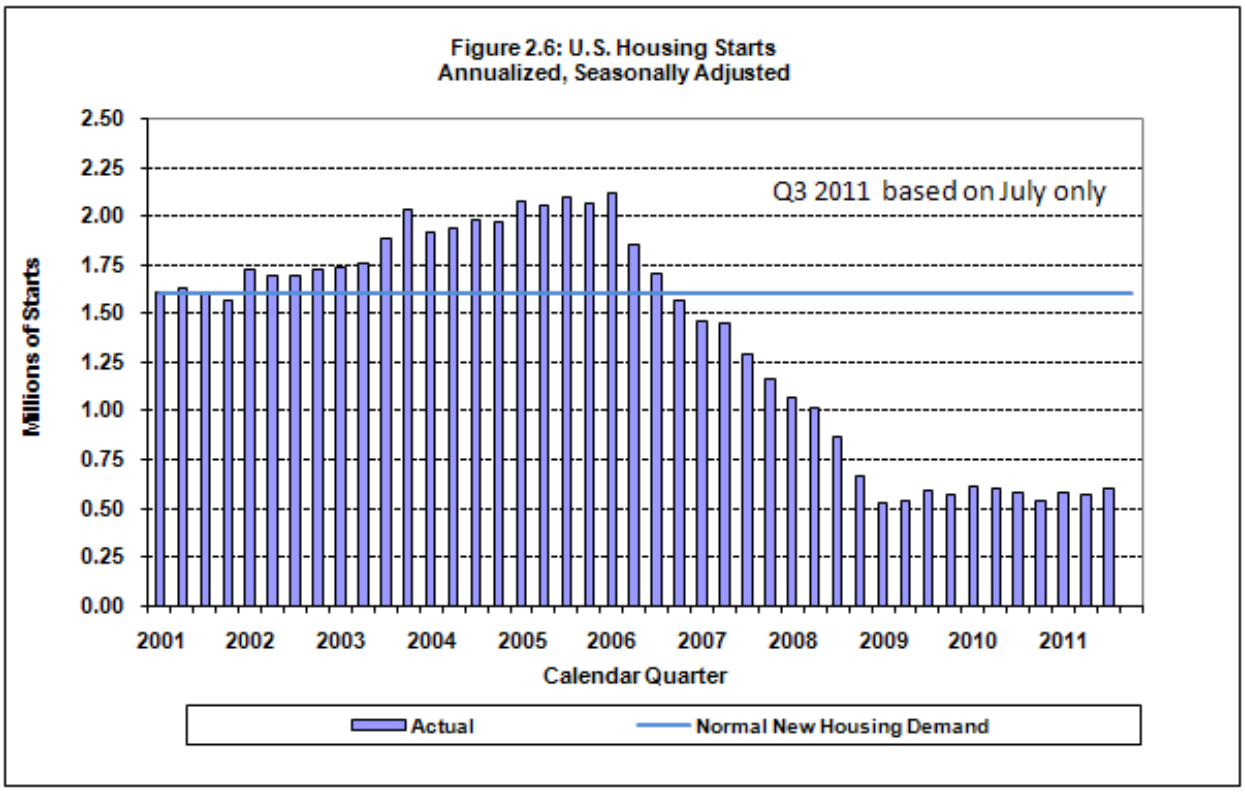


Figure 2.6: U.S. Housing Starts
Annualized, Seasonally Adjusted
Q3 2011 based on July only
Millions of Starts
2.50
2.25
2.00
1.75
1.50
1.25
1.00
0.75
0.50
0.25
0.00
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
Calendar Quarter
Actual
Normal New Housing Demand

Lumber, log, and stumpage prices

Lumber Production. In 2004, when lumber prices were at a high peak, mills in the U.S. West produced 18.8 billion board feet (bbf) of lumber while running at a healthy 93 percent of their capacity of 20.2 bbf. By 2009, lumber production in the West had fallen to 10.2 bbf, using only 53 percent of the 19.1 bbf capacity. In 2010, lumber production in the West was up to 11.3 bbf, an 11 percent increase, and capacity utilization rose to 59 percent. History shows that the demand/capacity conditions in the North American softwood lumber market have to be above 80 percent before the lumber sector (and its prices and profits) can stage a sustained recovery.

Log Exports. In 2010, the log export volume from Oregon and Washington increased to almost 804 mmbf, nearly 82 percent higher than 2009, and the highest volume since 2000. The bulk of that increase went to China which imported over 351 million board feet. Japan was still the largest importer of logs from the United States, totaling over 392 million board feet.

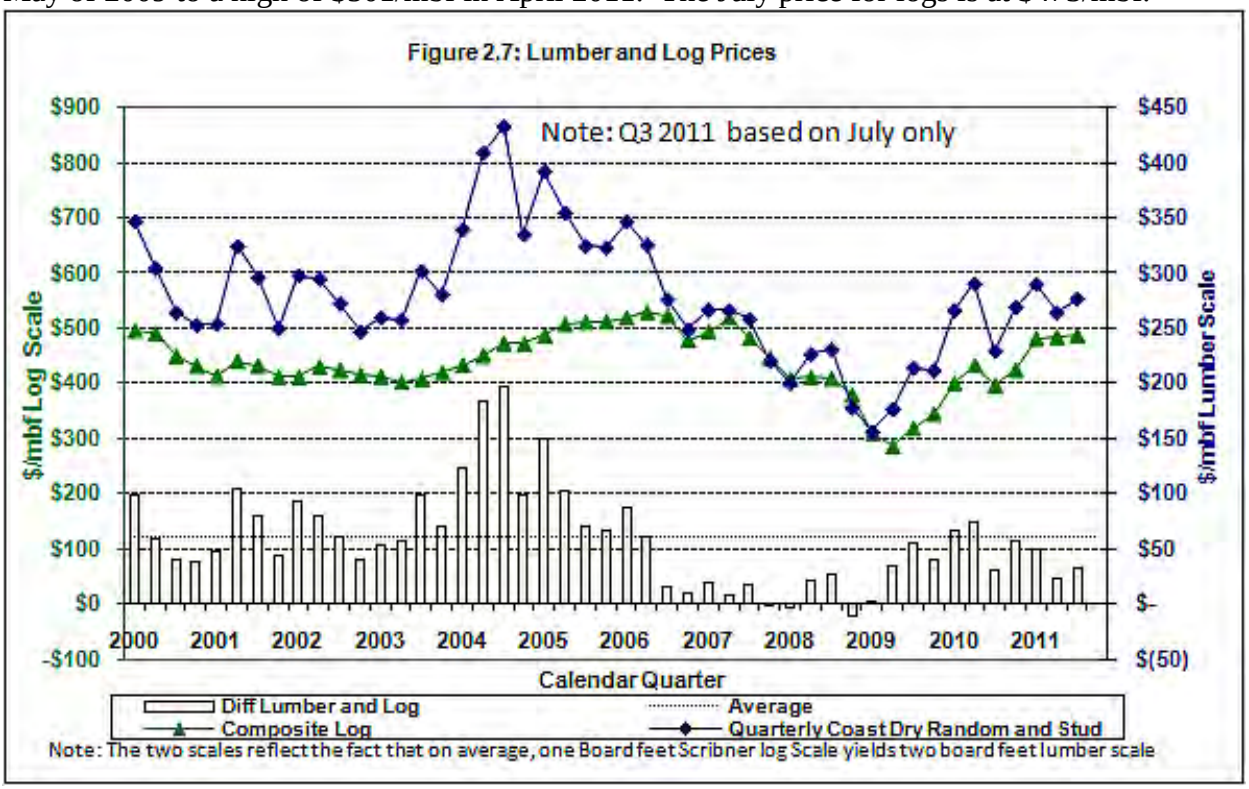
Whether China's soaring import demand for wood products will continue to increase will depend primarily on continued growth of China's economy and building boom as most of the softwood lumber they import is used in construction. From where and in what form those imports will take is another question. China has reduced its log imports from Russia because of higher export taxes and unreliability of supply. It has been increasing its log imports from New Zealand, but New Zealand is reaching limitations on supply. This leaves Canada and the United States as the other primary exporters that are likely sources of forest products to China. It seems likely that increased exports from Canada will take the form of lumber while the growth in exports from the United States is expected to continue to be in logs.

China is very price conscious in its acquisition of raw materials and commodities around the world. Log exports to China from the Pacific Northwest picked up as log prices in real terms remained relatively low in 2010. If Coastal log prices go too high, China will look to other regions of the world for supply or to substitute materials (i.e., lumber from Canada).

Like China, Japan has little to no wood reserves of its own. To meet the increased demand for wood for the rebuilding effort after the devastating earthquake and tsunami, sawmills in Japan will accelerate production and this will require increased imports of softwood logs. The United States accounted for over 40 percent of Japan's softwood log imports in 2010 and Canada 30 percent, so it is likely that Washington and Oregon will see the greatest increase in log export demand from Japan. Japan has a long history of importing logs from the Pacific Northwest and is still the largest importer of wood products from the area.

Lumber and Log Prices. **Figures 2.7** and **2.8** show lumber and log prices in Washington state and their relationship since 2000. **Figure 2.7** shows quarterly nominal prices and **Figure 2.8** shows monthly real seasonally adjusted prices. Both lumber and log prices have significantly improved from their extreme lows in 2009. The lumber price (real SA) bottomed at $159/mbf in February and March of 2009 and rose to hit highs of $313/mbf in April 2010 and $304/mbf in January 2011. In July 2011, the lumber price stood at $266/mbf. Composite log prices have

shown less volatility, as they usually do, rising from a low of $291/mbf (real SA) in April and May of 2009 to a high of $501/mbf in April 2011. The July price for logs is at $473/mbf.



Earlier in the year, as shown in **Figure 2.8,** dropping lumber prices brought the price curves for logs and lumber together, placing mills in a pinch as their margins shrunk. Some mills announced temporary and/or partial shutdowns because log prices were so high relative to lumber prices. The higher lumber price in July moved the price curves apart again; a good sign for mills, but it is too early to tell if the trend will continue.

Log and DNR Stumpage Prices. Figure 2.9 shows prices for logs, predicted DNR stumpage, and actual DNR stumpage on an annual basis since CY 2000. The "composite log price" represents prices for logs delivered to mills weighted by the average geographic location, species, and grade composition of timber typically sold by DNR. Average annual log and stumpage prices both improved in 2010 from the low in 2009 and they continue up in 2011, based on data through August.

Figure 2.10 shows the same relationship but on a monthly basis with seasonal adjustment and in real 2011 dollars. The bars at the bottom of the graph show by how much actual DNR stumpage prices are above those expected given log prices. **Figure 2.10** shows the upturn in log and DNR stumpage prices since the extreme low point in April 2009.

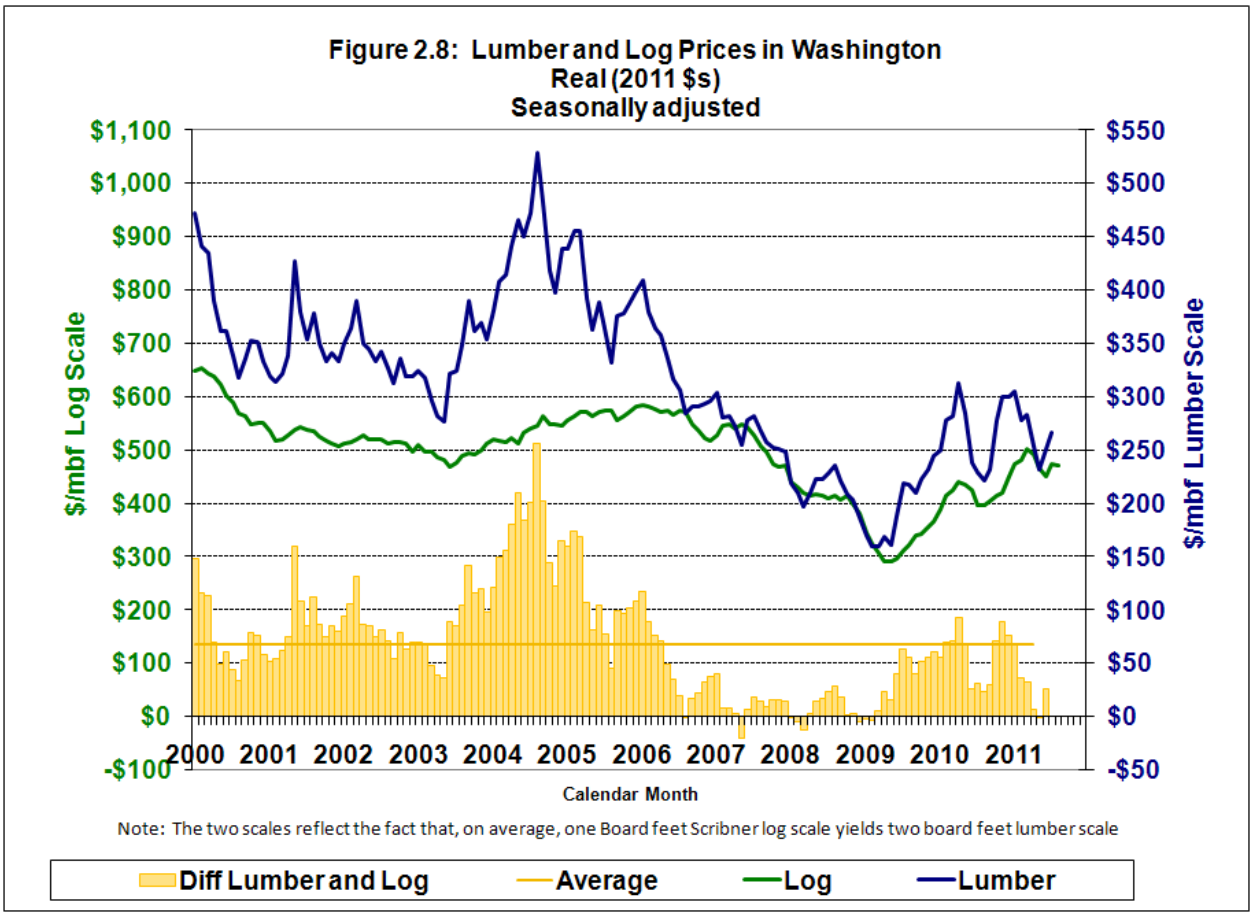


Figure 2.8: Lumber and Log Prices in Washington
Real (2011 $s)
Seasonally adjusted
$/mbf Log Scale
$/mbf Lumber Scale
$1,100
$1,000
$900
$800
$700
$600
$500
$400
$300
$200
$100
$0
-$100
$550
$500
$450
$400
$350
$300
$250
$200
$150
$100
$50
$0
-$50
2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011
Calendar Month
Note: The two scales reflect the fact that, on average, one Board feet Scribner log scale yields two board feet lumber scale
Diff Lumber and Log
Average
Log
Lumber

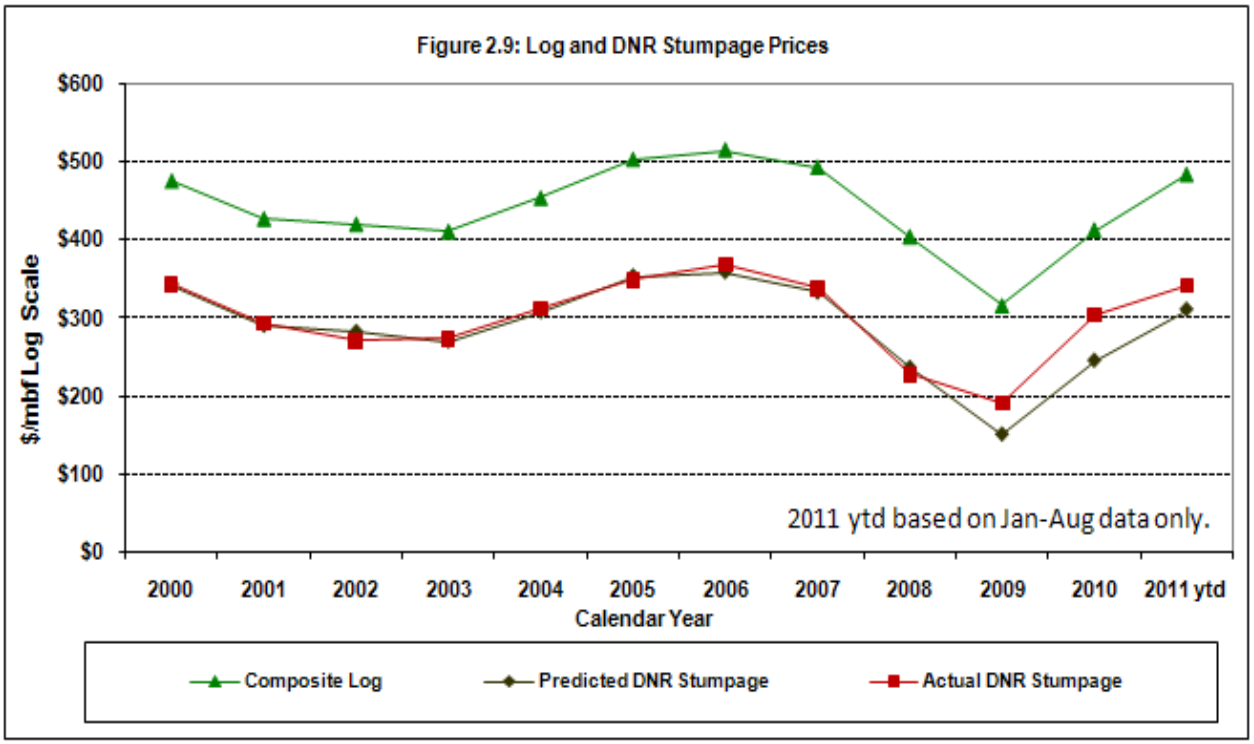


Figure 2.9: Log and DNR Stumpage Prices
$/mbf Log Scale
$600
$500
$400
$300
$200
$100
$0
2011 ytd based on Jan-Aug data only.
2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 ytd
Calendar Year
Composite Log
Predicted DNR Stumpage
Actual DNR Stumpage

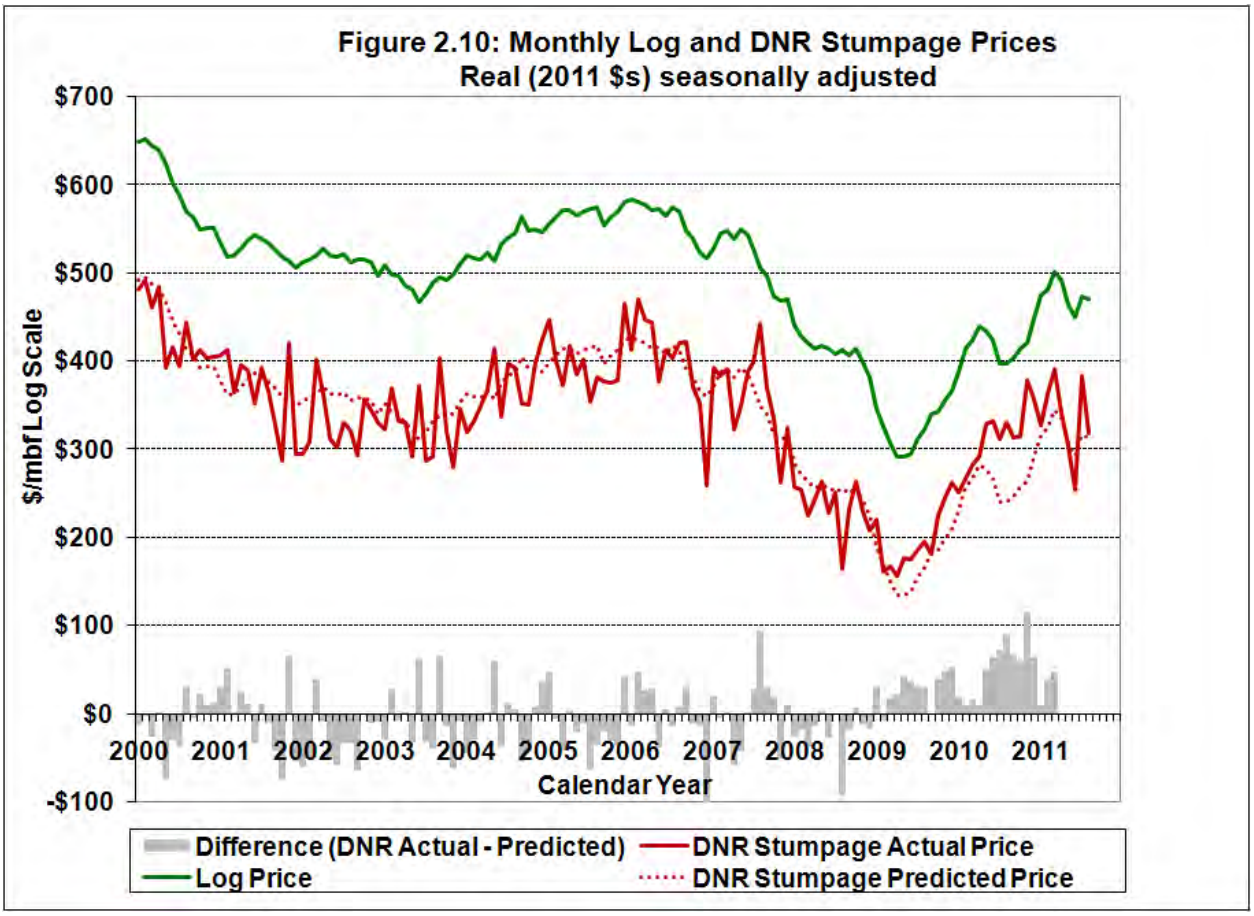


Figure 2.10: Monthly Log and DNR Stumpage Prices
Real (2011 $s) seasonally adjusted
$700
$600
$500
$400
$300
$200
$100
$0
-$100
$/mbf Log Scale
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
Calendar Year
Difference (DNR Actual - Predicted)
DNR Stumpage Actual Price
Log Price
DNR Stumpage Predicted Price

Part 3. DNR's Revenue Forecast

This Revenue Forecast includes Department revenues from timber sales on trust lands, leases on trust uplands, and leases on aquatic lands. It also forecasts revenues to individual funds. Some caveats about the uncertainty of forecasting Department revenues are summarized at the end of this section.

Timber revenues

The Washington State Department of Natural Resources (DNR) sells timber through contracts. The Department determines the total volume to be offered for sale each month and the minimum bid for each timber sale. The sale is awarded to the highest bidder and the average sales price ($/mbf) is set at the time of auction. DNR collects a 10 percent initial deposit at the time of sale and holds it until the sale is completed. Revenues are collected at the time of harvest (removal). The initial deposit is credited as the last 10 percent is harvested.

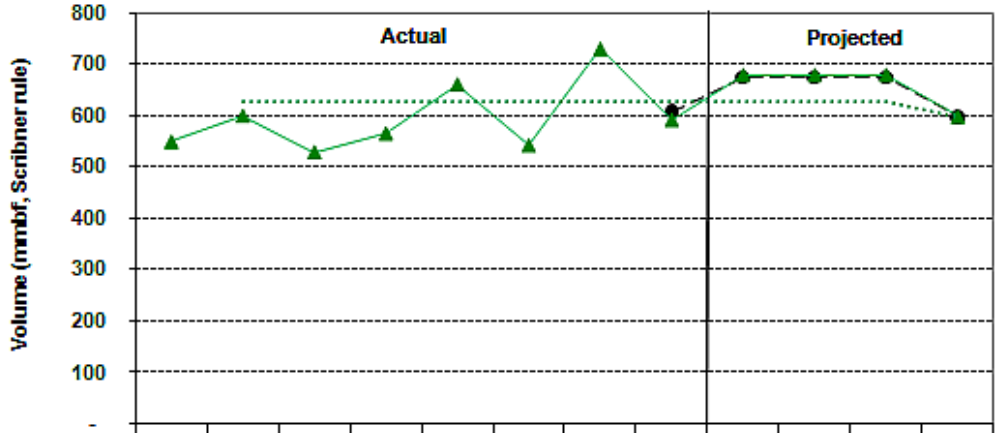
Contracts for DNR timber sales sold over the past two fiscal years have varied in duration from two months to three and one-half years, with an average (weighted by volume) of about 18.8 months. The purchaser determines the actual timing of harvest within the terms of the contract. As a result, timber revenues to beneficiaries and DNR management funds lag current market conditions. Currently, that lag is about 11 to 12 months.

Timber that is sold but not yet harvested is referred to as "volume under contract" or "inventory". Timber volume is added to the inventory when it is sold and placed under contract and it is removed from the inventory as the timber is harvested.

Timber Sales Volume. As directed by law, the Board of Natural Resources sets the level of sustainable harvest for western Washington forests managed by DNR on a decadal basis. The current sustainable harvest decade is from FY 2005 through FY 2014. For Western Washington, the current sustainable harvest is 550 mmbf per year for the current decade. We estimate the harvest for eastern Washington will average about 75 mmbf per year over the current decade, resulting in an average statewide harvest target of 625 mmbf per year (see **Figure 3.1**). For four of the first five years of the decade, DNR timber sales fell short of the sustainable harvest level by a cumulative amount of 233 mmbf. In FY 2010, the sixth year of the sustainable harvest decade, the Department sold 730 mmbf, or 105 mmbf more than the average annual sustainable

harvest level, leaving a remaining shortfall of 128 mmbf to be made up the last four fiscal years of the sustainable harvest decade.

Figure 3.1: Forecast Timber Sales Volume



Fiscal year ending June 30	04	05	06	07	08	09	10	11	12	13	14	15
Previous Forecast								607	674	674	674	597
Current Forecast	548	599	528	565	660	541	730	591	679	679	679	597
Change								(16)	5	5	5	0
Percent Change								-3%	1%	1%	1%	0%
Sustainable harvest		625	625	625	625	625	625	625	625	625	625	597

Through most of FY 2011, it appeared that DNR would be successful at well exceeding the 625 mmbf average and further cutting the decadal shortfall. However, there were a large number of offered sales with no bidders in the last three months of the fiscal year and the final FY 2011 total was only 591 mmbf sold (See **Figure 3.1)**. In April, May, and June, 33 percent of the volume offered, or 73 mmbf out of 221 mmbf, did not sell. The April and May results were already in for the near-yearend June Forecast, in which we reduced the FY 2011 projected sales volume from 657 to 607 mmbf and raised the forecast volume for the last three years of the 2005-2014 decade by 17 mmbf each year (FYs 2012, 2013, and 2014). Now, to offset the additional 16 mmbf volume reduction from the June Forecast for FY 2011, we are required to raise the forecast volume for the last three years of the decade by an additional 5 mmbf each year in order to meet the sustainable harvest level (see **Figure 3.1**).

FY 2012 got off to a slow start with more no-bid sales in July, when a discouraging 45 percent of the volume offered, or 29 mmbf out of 53 mmbf, did not sell. But August results brought hope for a turnaround with all offered sales selling, albeit with a relatively low total volume of 26 mbf.

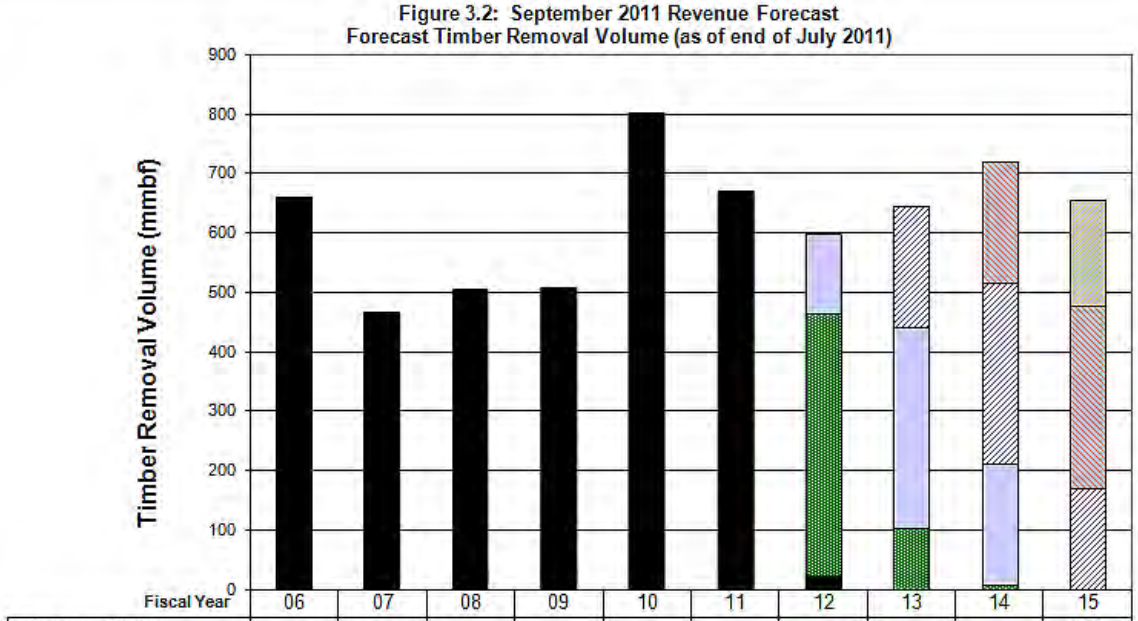
It may be difficult for DNR to make this new target timber sales volume of 679 mmbf annually for FYs 2012-2014 because sales have exceeded the average annual target of 625 mmbf in only two of the first seven years of the sustainable harvest decade. In addition to the normal operational challenges to "get out the cut", other potential environmental and policy issues, especially those regarding marbled murrelet habitat, will compound the difficulty of reaching the high 679 mmbf sales target for the next three consecutive years. And now state workers have

had their salaries and work hours reduced by three percent for FYs 2012 and 2013 and this may reduce work output, including in the DNR timber sales program.

The last year of the forecast (FY 2015) is the first year of the next sustainable harvest decade (FY 2015 through FY 2024). The Department will recalculate the sustainable harvest and anticipates that the Board will adopt a new sustainable harvest before the next decade begins. Until next decade's sustainable harvest process is completed and the new numbers are formally established, we will use the Department's estimated Westside harvest for the next decade of 537 mmbf, plus an Eastside harvest of 60 mmbf per year, to arrive at the projected timber sales volume of 597 mmbf for FY 2015.

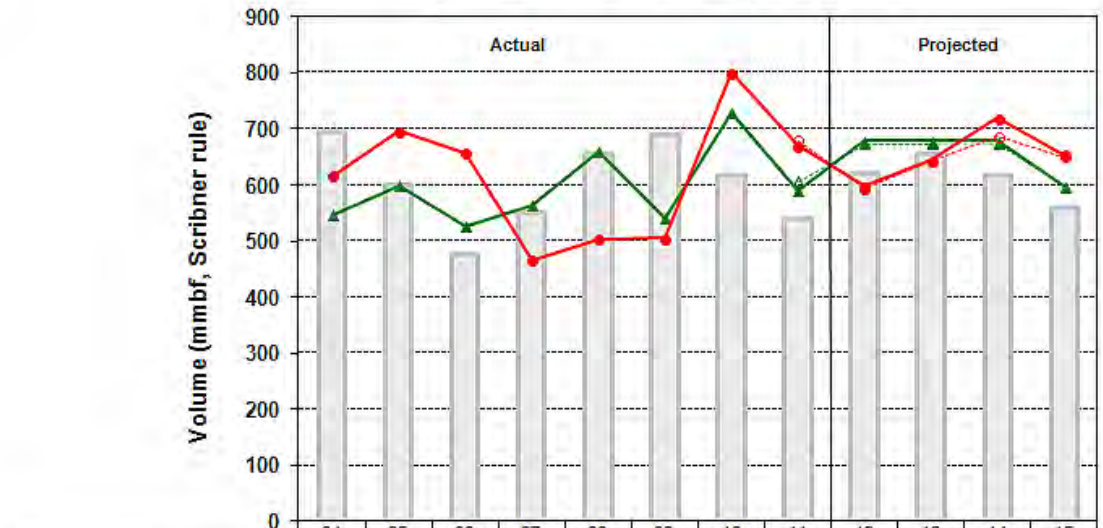
Timber Removal Volume. At the end of July, the Department had 556 mmbf of timber valued at $163.6 million under contract. This is an increase in the volume under contract from the 532 mmbf under contract when we did the June Forecast, but it is a slight decrease in the value from $165.1 million. At the end of FY 2011, there was about 10.0 months worth of volume under contract. We expect the inventory to increase to about 12 months worth at the end of both FY 2012 and FY 2013 based on increased sales during those years.

For each Forecast, we survey DNR timber sale purchasers to determine their planned timing of removals from the timber volume they have under contract at the time of the survey. This Forecast's survey, conducted in the first half of August, indicates that purchasers plan to harvest 440 mmbf, 81 percent of the volume under contract, this fiscal year (FY 2012) and 100 mmbf (18 percent) and 6 mmbf (1 percent) of the existing inventory in FYs 2013 and 2014 respectively (see **Figure 3.2** for detail). Based on these results, the projected removal volumes for FYs 2012 and 2013 are virtually unchanged from the June Forecast.



Fiscal Year	06	07	08	09	10	11	12	13	14	15
Sales in FY 15										179
Sales in FY 14									204	306
Sales in FY 13								204	306	170
Sales in FY 12							136	340	204	
Sales Under Contract							440	100	6	
Actual Removals to date	658	466	504	506	801	670	22			
Total	658	466	504	506	801	670	598	644	719	655

In year-to-date FY 2012 through July, timber sale purchasers removed 22 mmbf. Together with the expected removals of 440 mmbf from volume under contract at the end of July plus 136 mmbf from current FY 2012 timber sales from August 2011 through June 2012, this brings our forecast of total timber removals for FY 2012 to 598 mmbf—about a 0.5 percent increase from the 595 mmbf projected in the June Forecast (see **Figure 3.3**).

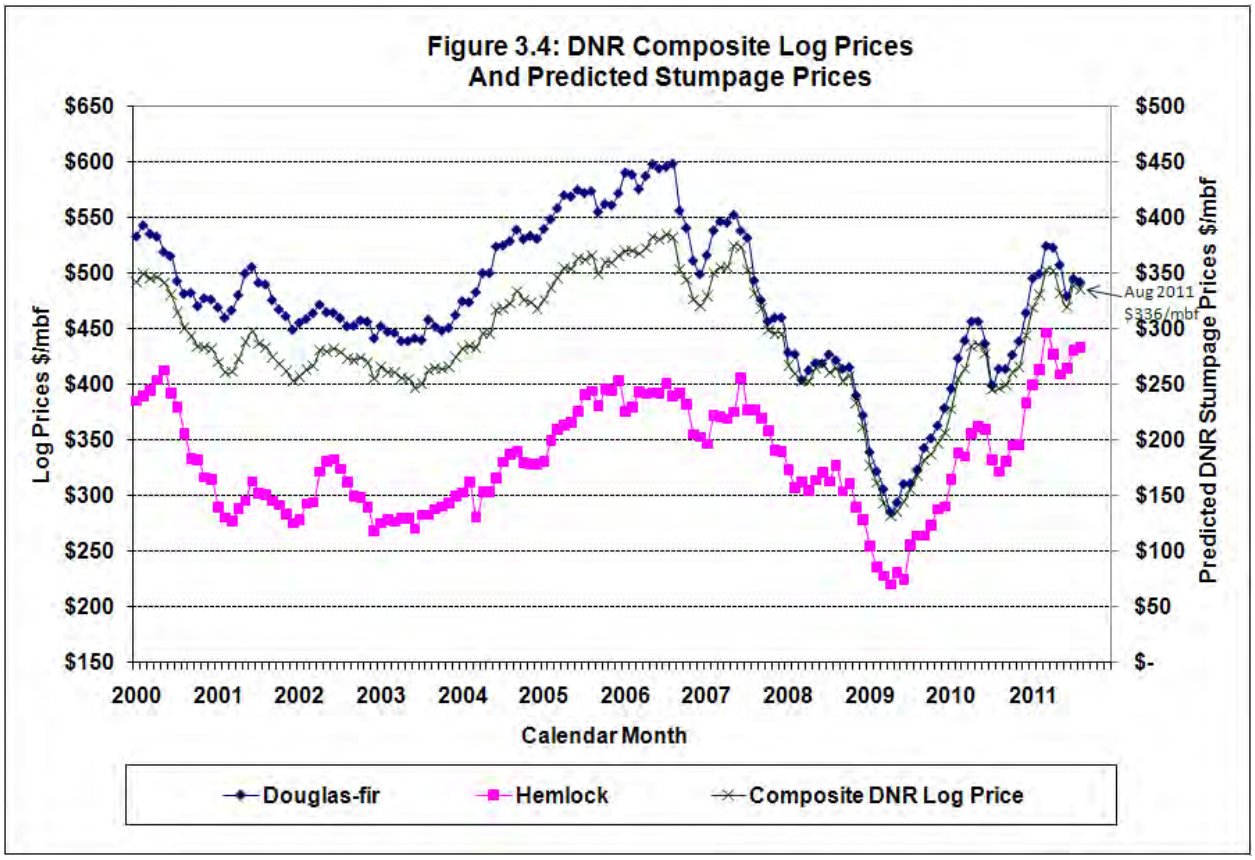


	04	05	06	07	08	09	10	11	12	13	14	15
Inventory	696	599	475	552	654	689	618	539	621	656	616	559
Sales - Previous Forecast								607	674	674	674	597
Sales - Current Forecast	548	599	528	565	660	541	730	591	679	679	679	597
Change								-16	5	5	5	0
Removals Prev. Forecast								679	594	643	686	651
Removals - Current Forcast	616	696	658	466	504	506	801	670	598	644	719	655
Change								-10	3	1	33	4
Percent Change								-1%	1%	0%	5%	1%

Projected timber removal volumes for the current biennium, 2011-2013, are reduced by 18 mmbf, or 1.5 percent, because of the 16 mmbf reduction in FY 2011 timber sales. Forecast volumes for the 2013-2015 Biennium are raised by 37 mmbf, or three percent, because of the higher level of timber sales in FYs 2012-2014 (see **Figure 3.3** for details).

Timber Sales Prices. Composite log prices (weighted by species) are used to predict actual stumpage prices for DNR timber sales (using the formula composite log price minus $150/mbf logging costs). The composite projected stumpage price had been increasing every month since July 2010, when it was $245/mbf, to reach a recent high of $353/mbf in March, the highest level since June 2007 (see **Figure 3.4**). It has fallen off somewhat since then and stands at $336/mbf in August.

In a notable shift, hemlock log prices have recently closed the gap with Douglas fir log prices (see **Figure 3.4**). From 2000 through 2007, the average difference between Douglas fir and hemlock log prices was $170/mbf. Since the beginning of 2008, the average difference has fallen to $87/mbf.



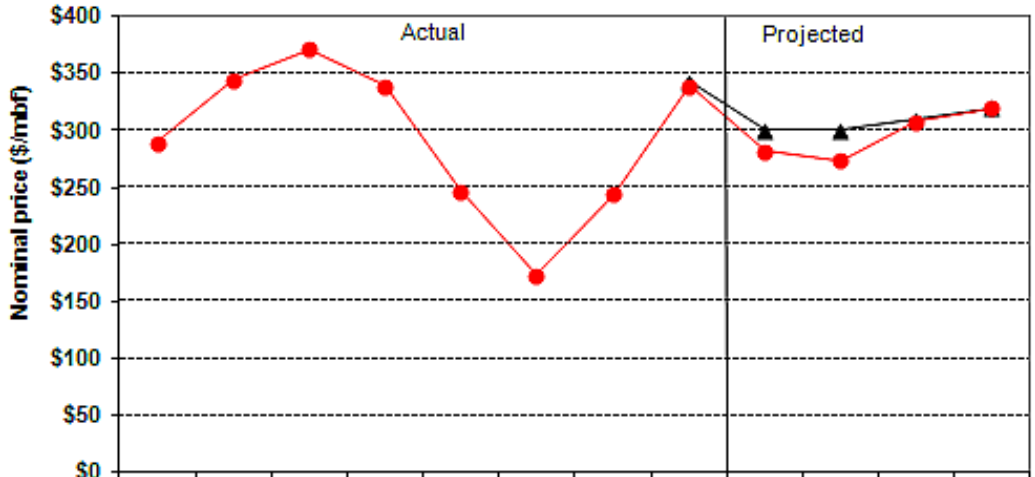
Actual results of monthly DNR timber sales (shown in **Figure 2.10** in seasonally adjusted terms and in real 2011 dollars) are more volatile. In FY 2011, they rose from $293/mbf in July 2010 to a high of $422/mbf in March before falling back to $243/mbf in June, averaging a respectable $339 for the fiscal year (see **Figure 3.5**). Beginning the new fiscal year, FY 2012, July and August timber sales averaged $375 and $320/mbf respectively.

The higher stumpage prices for DNR timber sales in FY 2011 and early FY 2012 can be attributed to the increased log exports to China. Even though logs from DNR lands cannot be exported, a majority of logs harvested on private lands in the Coast region last year went to export. This helped drive up the price for DNR logs as they constituted the major source of supply to the mills. However, the relationship of higher log prices and lower lumber prices cannot hold over a long period, so if lumber prices do not pick up we expect DNR timber sale prices to drop and/or there to be a number of offered sales with no bids.

Because of currently falling lumber prices and the stagnant and unpromising housing market, we are lowering our forecast timber sale price for FYs 2012 and 2013 from $300/mbf to $282 and $274/mbf respectively (see **Figure 3.5**).

The forecast of DNR stumpage prices in the next two biennia incorporates our continued pessimism about the long-term recovery of the U.S. housing market. This, however, is offset by expected continued strength in export demand for both logs and lumber, which will favorably influence stumpage prices. When domestic demand for lumber starts to grow, this will

Figure 3.5: Timber Sales Prices - Comparison of Previous Forecast with Current Forecast



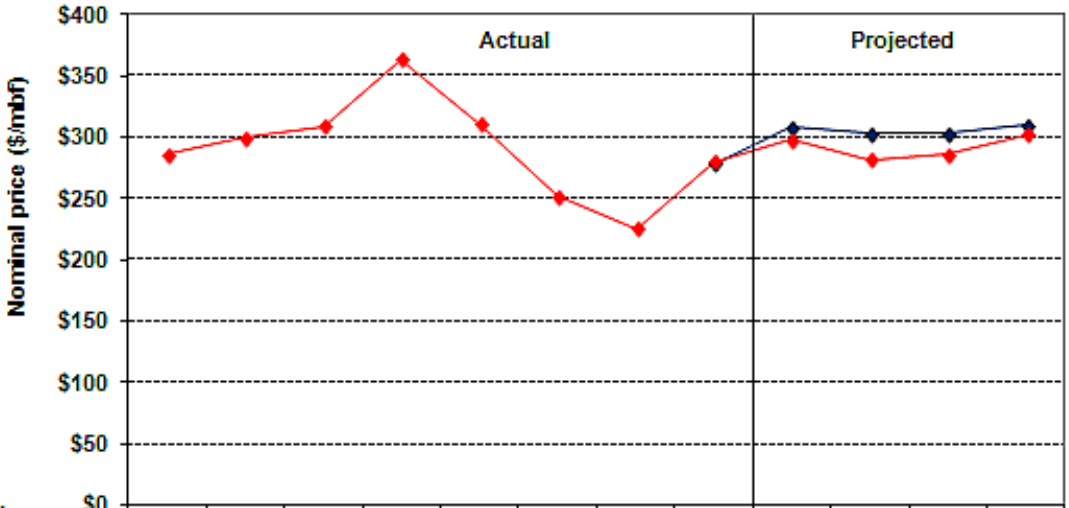
Fiscal year	04	05	06	07	08	09	10	11	12	13	14	15
Previous Forecast								$343	$300	$300	$310	$320
Current Updated	$289	$345	$371	$340	$247	$174	$245	$339	$282	$274	$308	$320
Change								-$4	-$18	-$26	-$2	$0
Percent Change								-1.1%	-6.1%	-8.7%	-0.7%	0.0%

add upward pressure to stumpage prices, but the timing for a recovery in housing construction remains uncertain. Economists have wildly divergent opinions on the housing recovery, with some predicting it in latter 2012 and others predicting things won't improve until after 2020. If it happens sooner, then our predicted DNR stumpage prices in the later years of the Forecast will prove to be too low.

Timber Removal Prices. Timber removal prices are a function of timber sales prices and the timing of the timber's removal. They can be thought of as a moving average of previous timber sales prices, weighted by the volume of sold timber removed in each time period. The removal volumes used to calculate the weights are shown in **Figure 3.2**, which results in a smoothing out and a lag of timber removal prices compared to timber sales prices. For example, sales prices bottomed out at $174/mbf in FY 2009 (see **Figure 3.5**). As shown in **Figure 3.6**, removal prices bottomed out in FY 2010 at $226/mbf, which was $52/mbf higher and a year later than the bottom for sales prices. Timber removal prices made a rebound in just-completed FY 2011 to an average annual price of $280/mbf, thanks in part to the year-over-year increase in sales prices in FYs 2010 and 2011.

As a result of downward revisions to timber sales prices for FYs 2011-2014, forecast timber removal prices are revised down through the Forecast period with the largest adjustment in FY 2013 with a new projected removal price of $282/mbf, down seven percent from the $303/mbf in the June Forecast (see **Figure 3.6**).

Figure 3.6: Timber Removal Prices - Comparison of Previous Forecast with Current Forecast



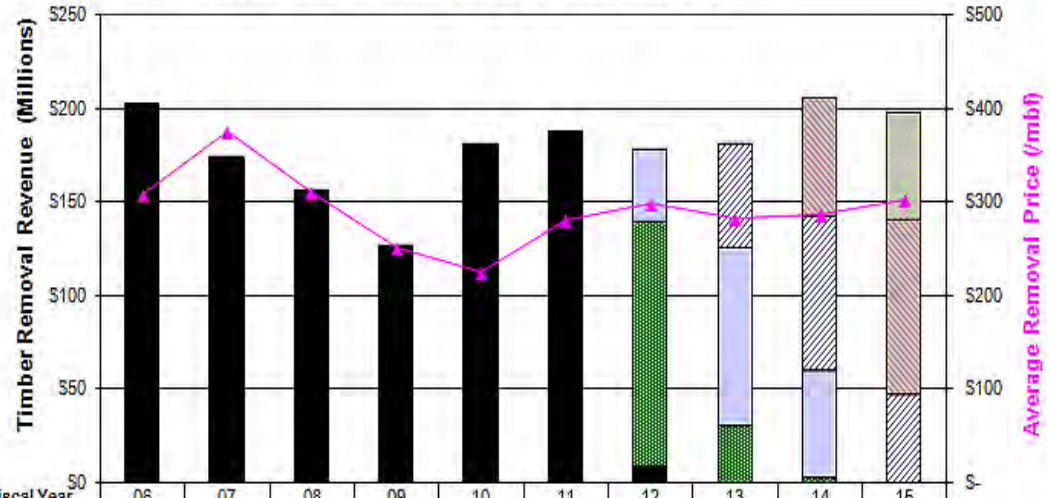
Fiscal year	04	05	06	07	08	09	10	11	12	13	14	15
Previous Forecast								$279	$308	$303	$303	$310
Current Updated	$286	$300	$309	$363	$311	$252	$226	$280	$298	$282	$286	$302
Change								$2	-$10	-$21	-$17	-$8
Percent Change								1%	-3%	-7%	-6%	-3%

Timber Removal Revenues. **Figure 3.7** shows projected annual timber removal revenues and the average removal price for that fiscal year, broken down by the fiscal year in which the timber was sold ("sales under contract" are already sold as of August 1, 2011). About 5 percent (or $8.1 million) of the forecast timber harvest revenue this fiscal year (FY 2012) will come from sold timber already harvested to date, another 74 percent ($131.7 million) will come from previously sold timber sales currently under contract as of the end of July, and the final 21 percent ($38.3 million) will come from FY 2012 sales sold after August 1, 2011.

Timber sales program revenues for recently completed FY 2011 came in at $187.8 million (see **Figure 3.8**), the highest since FY 2006, with proceeds from timber sale removals accounting for $184.3 million (other revenues were from a contract default settlement, forest improvement treatment projects, and interest charges). The total timber revenues for the 2009-2011 Biennium were $368.8 million.

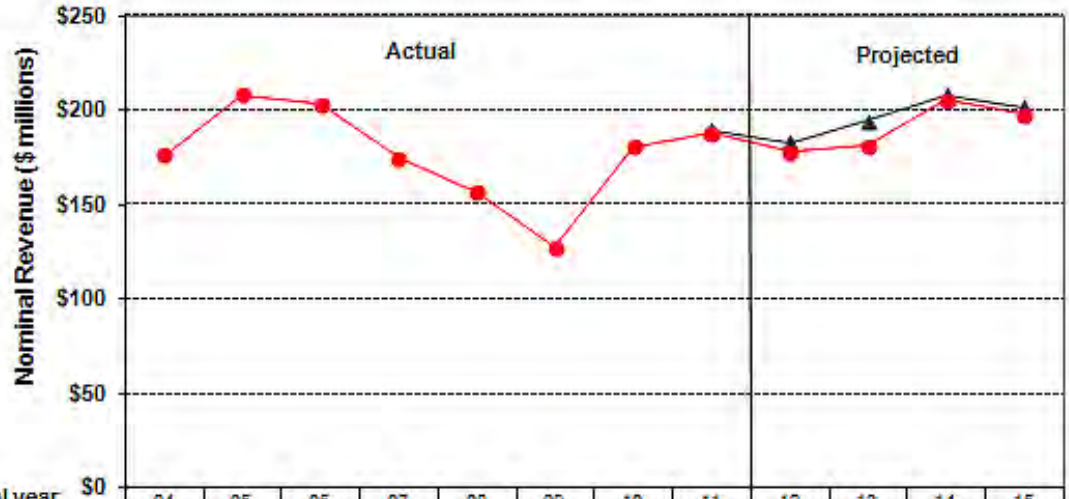
Largely as a result of the changes in forecast timber removal prices, we are revising forecast timber revenues down from the June Forecast (see **Figure 3.8**). In the current biennium (FYs 2012 and 2013), forecast timber removal revenues are down by $18.1 million, or five percent, to $359.5 million. In the 2013-15 Biennium, forecast of timber removal revenues are down by $6.6 million, or two percent, to $403.3 million.

Figure 3.7: September 2011 Revenue Forecast
Forecast Timber Removal Value (as of end of July 2011)



Fiscal Year	06	07	08	09	10	11	12	13	14	15
Sales in FY 15										$57
Sales in FY 14									$63	$94
Sales in FY 13								$56	$84	$46
Sales in FY 12							$38	$96	$57	
Sales Under Contract							$132	$30	$2	
Actual Removals to date	$203	$175	$157	$127	$181	$188	$8			
Total	$203	$175	$157	$127	$181	$188	$178	$182	$206	$198
$/mbf	$309	$375	$311	$252	$226	$280	$298	$282	$286	$302

Figure 3.8: Timber Removal Revenues - Comparison of Previous Forecast
with Current Forecast, 2004-2015



Fiscal year	04	05	06	07	08	09	10	11	12	13	14	15
Previous Forecast								$189.4	$183.0	$194.7	$208.1	$201.8
Current Updated	$176.5	$208.4	$203.2	$174.7	$156.6	$127.2	$181.0	$187.8	$178.0	$181.5	$205.5	$197.8
Change								(1.6)	(5.0)	(13.2)	(2.6)	(4.0)
Percent Change								-1%	-3%	-7%	-1%	-2%

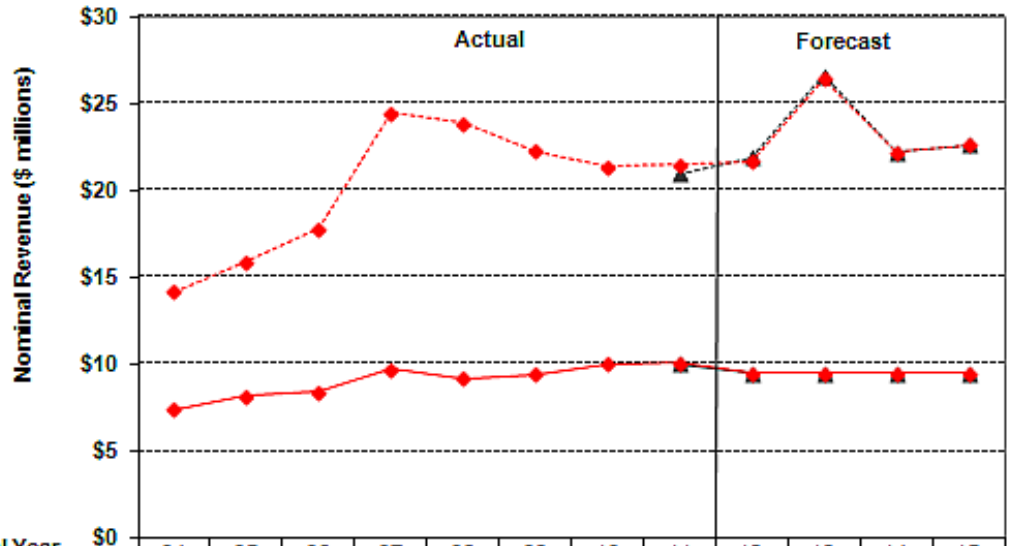
Upland lease revenues

Upland lease revenues are generated primarily from leases and the sale of valuable materials, other than timber, on state trust lands. In this Forecast, upland lease revenues are divided into two categories:

> **Commercial—**Commercial real estate leases.
>
> **Agricultural and Other**—Agricultural (orchard and vineyard, dryland cropland, and grazing), special use, mineral and hydrocarbon, right-of-way, communication site, special forest products leases, and sales of valuable materials (e.g., rock, sand, and gravel) other than timber.

Commercial. Commercial real estate leases on state trust lands generated $10.1 million in revenue in FY 2011, a slight increase over FY 2010's $10.0 million and also a slight increase over the June Forecast's $10.0 million for FY 2011 (see **Figure 3.9**).

Figure 3.9: Upland Lease Revenue - Comparison of Previous Forecast with Current Forecast, 2004-2015



Fiscal Year	04	05	06	07	08	09	10	11	12	13	14	15
Ag. & Other Prev. For.								21.0	21.9	26.6	22.2	22.6
Ag & Other - Current	14.2	15.9	17.8	24.4	23.8	22.3	21.3	21.5	21.7	26.4	22.2	22.6
change								0.5	-0.2	-0.2	0.0	0.0
% change								2.5%	-0.9%	-0.8%	0.0%	0.0%
Commercial Prev. For.								10.0	9.5	9.5	9.5	9.5
Commercial - Current	7.4	8.2	8.4	9.7	9.2	9.4	10.0	10.1	9.5	9.5	9.5	9.5
Change								0.1	0.0	0.0	0.0	0.0
% Change								1.0%	0.0%	0.0%	0.0%	0.0%

We are keeping the forecast for commercial lease income at $9.5 million per year for FYs 2012-2015. This level was set in the June Forecast, balancing the current downside risk in commercial real estate because of its bleak conditions and pessimistic outlook with the fact that DNR was able to maintain a $10 million revenue level in the last two fiscal years even in the midst of a difficult economy. The economic downturn has increased the probability that some of DNR's commercial building lessees could vacate and that it would be difficult to re-lease at the current rental rates, if at all. In fact, DNR now expects to lose Jansport as a tenant at its Everett warehouse commercial property at the end of January 2012. The Jansport lease is for $1.2 million per year so losing the lease would mean losing $0.5 million in rental revenue for the last five months of FY 2012. So this brings us to the $9.5 million level, which may be difficult to maintain over the next four years as the economic recovery continues to be sluggish and commercial real estate is still in the doldrums.

Agricultural and Other. For recently completed FY 2011, revenues from agricultural and other upland leases came in at $21.5 million, just slightly above the $21.0 million projected in the June Forecast (see **Figure 3.9**). This was a very similar level to the FY 2010 revenue of $21.3 in these uplands leasing programs. Within subcategories, dryland crop lease revenue had the largest increase from FY 2010 to FY 2011 and income from rights of way and minerals and oil and gas showed the largest decreases. Upland leasing revenue in the last two fiscal years was below that realized in FYs 2007, 2008, and 2009 when revenues in the minerals and oil and gas subcategories were much higher.

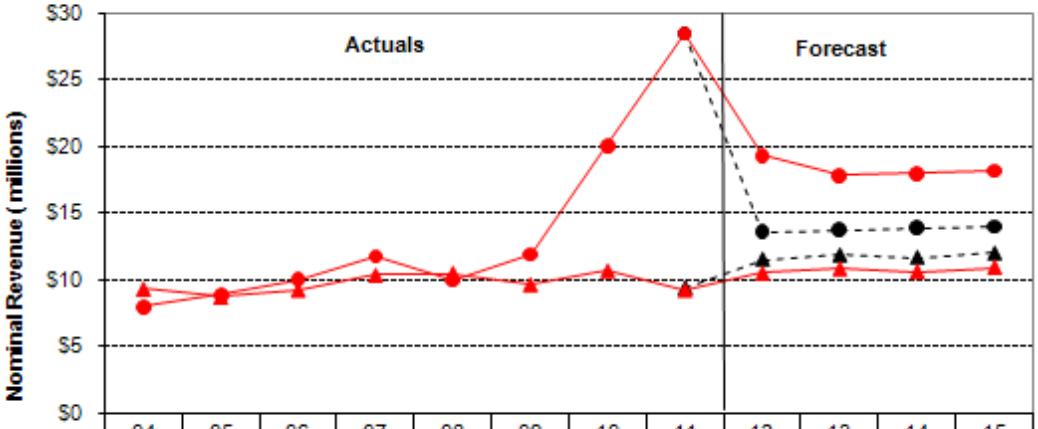
For this forecast, revenue from agricultural leasing is being revised downward by $200,000 (one percent) annually for FY 2012-2013 (see **Figure 3.9**). The high blip in FY 2013 represents an estimated $4.5 million return from the proposed sale of improvements (towers, buildings, and equipment) at certain communication sites in that fiscal year.

Aquatic lands revenues

Geoduck Revenues. FY 2011 was an amazing year and a new high record for DNR geoduck revenues at $28.5 million (see **Figure 3.10**). This is much higher than the then-amazing previous record year of FY 2010 at $20.0 million and contrasts with the seven preceding years of FYs 2003-2009 when the average annual geoduck revenue was $10.1 million (falling in a rather tight range of $7.9 million to $11.9 million per year) (see **Figure 3.10**).

There were two reasons for the new high record year for geoduck revenue in FY 2011—volume and price. The volume of geoduck which DNR may auction for sale is determined by the "total allowable catch" for wild geoduck established by the Washington Department of Fish and Wildlife for the harvest year, with the allocation split 50-50 between the state and tribes. But the geoduck harvest year (starts in April) and the state fiscal year (starts in July) do not line up neatly. In FY 2011, DNR collected revenue on more sold geoduck volume than in a typical average year because it elected to account for the bonus bid revenue from the May 2010 auction in FY 2011. At the present time it is not known whether there will less geoduck volume sold and accounted for in FY 2012 or whether it will be a more typical average year.

Figure 3.10: Aquatic Lands Revenues
Forecast Geoduck and Lease & Other, FY 2010-2015



Fiscal Year	04	05	06	07	08	09	10	11	12	13	14	15
Geoduck Previous								$28.5	$13.6	$13.7	$13.9	$14.0
Geoduck Forecast	$7.9	$8.8	$10.0	$11.7	$9.9	$11.9	$20.0	$28.5	$19.3	$17.8	$18.0	$18.1
Change								-	5.7	4.1	4.1	4.2
Other Previous								$9.3	$11.5	$11.8	$11.6	$12.0
Other Forecast	$9.3	$8.7	$9.2	$10.3	$10.5	$9.6	$10.6	$9.2	$10.5	$10.8	$10.6	$10.9
Change								-0.1	-1.0	-1.0	-1.0	-1.1

The other variable leading to the record year for DNR geoduck revenues is price, which averaged $10.30 (weighted by volume) in auctions accounted for in FY 2011. The DNR geoduck auction price has remaining up around $10 per pound consistently since December 2009, with seven

auctions between December 2009 and May 2011 falling in a rather tight range of $9.64 to $10.68 per pound.

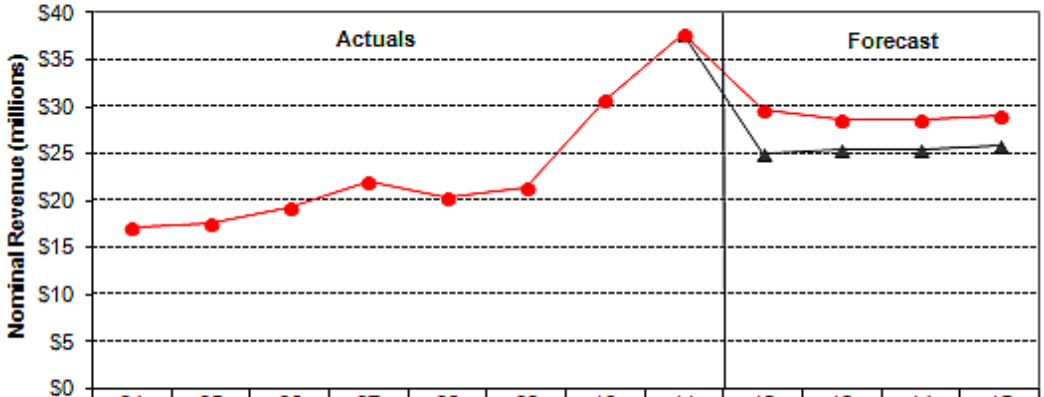
Our current underlying geoduck unit price for forecast purposes had been $6.30 per pound for FY 2012, with small increases for FYs 2013-2015. This lower price had been established to take into account the historic (pre-December 2009) volatility in geoduck prices. But as the price has now stayed up around $10 per pound for seven consecutive auctions and the most recent August 2011 auction has now come in at a new high of $11.62, it is time significantly raise our geoduck revenue projections. Accordingly, we are raising the underlying geoduck unit price for forecast purposes to $8.17 per pound for FY 2012, with small increases for FYs 2013-2015. And since the August 2011 auction is already in the books for FY 2012, the effective forecast price for the entire FY 2012 is $8.95 per pound. The effects on total geoduck revenue are shown in **Figure 3.10**, with projected FY 2012 revenue rising by $5.7 million to $19.3 million while revenues in FYs 2013-2015 are forecast to be up $4.1 million to 4.2 million annually.

There is downside potential to the FY 2012 projection if less geoduck auction volume than normal is accounted for in the next fiscal year.

Lease and Other Revenues. Lease and other aquatic revenues (excluding geoduck) in recently completed FY 2011 came in lower than the last several years at $9.2 million (**see Figure 3.10**). Revenues were down primarily in the water dependent and mineral categories, likely due to the down economy. The recession may have led to lower revenues due to lower property values and inflation adjustments which are used to calculate water dependent lease rates and because of fewer new leases in both categories. Because these economic conditions will likely persist for the foreseeable future, we are revising our forecast for non-geoduck aquatic revenues downward by $1.0 million to 1.1 million per year throughout the forecast period (**see Figure 3.10**).

Figure 3.11 shows annual actual and forecasts for all aquatic revenues (geoduck and other) combined. Total forecast revenues for aquatic lands are up by $4.7 million to $29.8 million in FY 2012 while total aquatic revenues in FYs 2013-2015 are forecast to be up $3.0 million to 3.1 million annually.

Figure 3.11: Aquatic Lands Revenues
Comparison of Previous Forecast with Current Forecast, 2010-2015



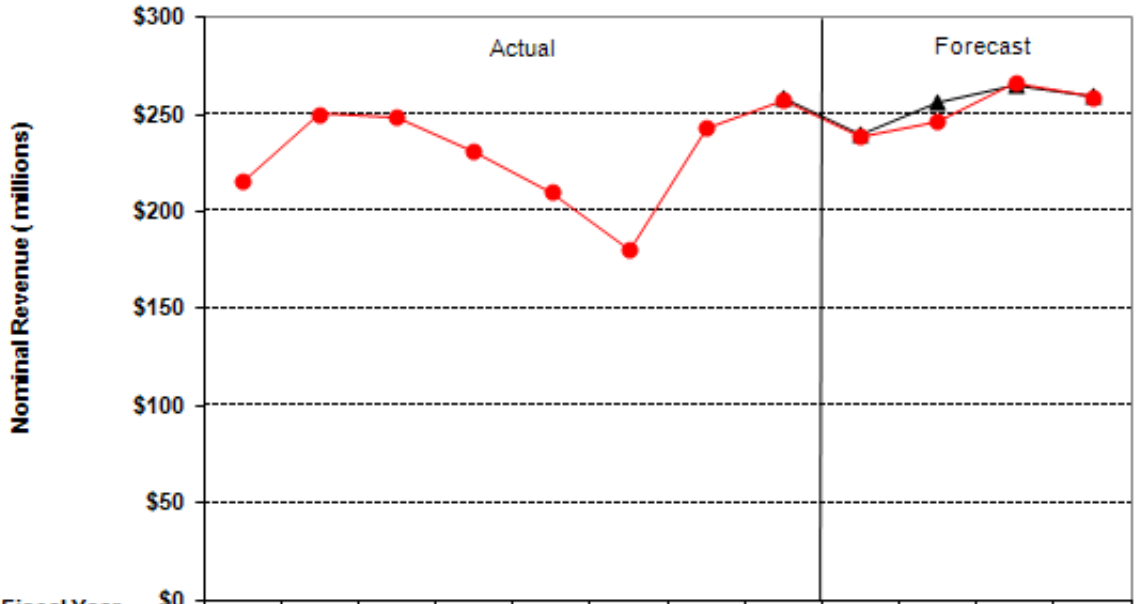
	04	05	06	07	08	09	10	11	12	13	14	15
Previous Forecast								$37.8	$25.1	$25.5	$25.5	$26.0
Current Forecast	$17.3	$17.6	$19.2	$22.0	$20.4	$21.5	$30.7	$37.7	$29.8	$28.6	$28.6	$29.1
Change								(0.2)	4.7	3.0	3.1	3.1
Percent Change								-0.4%	18.7%	11.9%	12.0%	12.0%

Fiscal year ending June 30

Total revenues from all sources

Forecast revenues for the current 2011-2013 Biennium (FYs 2012 and 2013) are down up from the June Forecast by $10.8 million, or two percent, to $484.9 million (see **Figure 3.12**). Forecast decreases of $18.1 million in timber revenues (see **Figure 3.8**) and $2.0 million in non-geoduck aquatic lands lease revenue (see **Figure 3.10**) are partially offset by a projected increase of $9.8 million in geoduck revenue (see **Figure 3.10**).

Figure 3.12: Total Revenues
Comparison of Previous Forecast with Current Forecast, 2010-2015



Fiscal Year	04	05	06	07	08	09	10	11	12	13	14	15
Previous Forecast								$258	$239	$256	$265	$260
Current Updated	$215	$250	$249	$231	$210	$180	$243	$257	$239	$246	$266	$259
Change								$(1.1)	$(0.5)	$(10.4)	$0.5	$(0.9)
% Change								0%	0%	-4%	0%	0%

Forecast revenues for the 2013-15 Biennium (FYs 2014 and 2015) are down by a small amount, $0.4 million, from the previous Forecast to $524.8 million (see **Figure 3.12**). Forecast reductions of $6.6 million in timber removal revenues and $2.1 million in non-geoduck aquatic lands lease revenue are offset by a projected increase of $8.3 million in geoduck revenue.

Some caveats

DNR strives to produce the most accurate and objective forecast possible, based on the Department's current policy directions and available information. Actual revenues will depend on future policy decisions made by the Legislature and the Department, as well as market and other conditions beyond DNR's control. Listed below are issues that could potentially have a significant impact on future revenues from DNR-managed lands:

U.S. and Global Economic Crisis. The recovery in the United States from the deepest and longest recession since the Great Depression remains slow and uncertain. Unemployment remains stuck at a high rate of nine percent by the official government measure and at 16 percent when including people who have given up looking for work. Many European countries face sovereign debt crises and their austerity measures face popular opposition. The rates of growth in China's economy and other emerging economies are slowing. A faction in the U.S. Congress is refusing to take action to deal with the immediate economic crisis in the United States.

U.S. Housing Market. The housing market remains discouraging. It has been more than four years since the housing downturn began. Inventories of existing homes are beginning to fall but still remain high. National home prices are in a second dip and setting new lows in many U.S. cities. New housing starts are at the lowest levels in 50 years. It is possible that the housing recovery will be pushed back even further by a slower-than-expected economic recovery. This would likely result in lower timber sales prices than we currently forecast.

Timber Sales Volume. The volume of FY 2011 DNR timber sales came in lower than planned. Accordingly, this volume must be made up during FYs 2012 through 2014 in order to meet the 1995-2014 decadal sustainable harvest on DNR managed forest lands. Therefore the annual timber sales volume is being increased by 5 mmbf annually to 679 mmbf for those three years. There is risk that DNR will not be able to sustain this ambitious level of timber sales because of administrative challenges and potential litigation over the marbled murrelet and other environmental issues. In addition, state workers have had their salaries and work hours reduced by three percent for FYs 2012 and 2013 and this may reduce work output, including in the DNR timber sales program.

These and other future circumstances could have a great impact on future Department revenues. As events and market conditions develop, DNR will incorporate new information into future Forecasts. At this point, we judge the downside to the overall forecast to be greater than the upside because of the risks to timber sale volume (and therefore timber removal volume and revenues) due to potential environmental and policy issues.

Distribution of revenues

The distribution of timber revenues by trust are based on:

- The value of timber in the inventory (sales sold but not yet harvested);
- The volumes of timber in planned sales for FYs 2012 and 2013; and
- The distribution of the sustainable harvest for FYs 2014 and 2015.

Timber sales are expected to be harvested on average between 10.7 and 12.2 months after they are sold. Distributions of lease revenues are assumed to be proportional to historic distributions unless otherwise specified.

Since a single timber sale can be worth over $3 million, dropping, adding, or delaying even one sale can represent a significant shift in revenues to a specific trust fund.

Management Fee Deduction. The underlying statutory management fee deductions to DNR as authorized by the Legislature are up to 25 percent, as determined by the Board of Natural Resources, for both the Resource Management Cost Account (RMCA) and the Forest Development Account (FDA). In budget bills, the Legislature has authorized a deduction of up to 30 percent to RMCA since July 1, 2005. In the budget bill for the current 2011-2013 Biennium (Sec. 966, 2ESHB 1087), the Legislature authorized the RMCA deduction at up to 30 percent for FY 2012 (the current fiscal year) only. At its April 2011 meeting, the Board adopted a resolution to reduce the RMCA deduction from 30 to 27 percent and the FDA deduction from 25 to 23 percent. At its July 2011 meeting, the Board acted to continue the deductions at 27 percent for RMCA (so long as this rate is authorized by the Legislature) and at 23 percent for FDA.

Given this background of official actions by the Legislature and the Board, the management fee deductions assumed in this Forecast are:

	FY 2012	FY 2013	FY 2014	FY 2015
FDA	23	23	23	23
RMCA	27	25	25	25

At its September 2011 meeting, the Board authorized the Department to seek Legislative approval to maintain the RMCA deduction at 30 percent in FY 2013. We anticipate this will be approved in the next Legislative session and be effective on July 1, 2012. The note inserted above the FY 2013 column in **Table 3.2** below shows what the amount of the RMCA deduction to DNR is estimated to be at 27 percent for that fiscal year.

At the October 2011 Board meeting, the Department will propose lowering the FDA deduction from 23 to 21 percent.

We will incorporate these changes to the RMCA and FDA management fee deductions into future Forecasts upon future official actions by the Legislature and the Board.

Revenue forecast tables

Tables 3.1 and 3.2 on the following pages provide Forecast details. **Table 3.1** focuses on the source of revenues and **Table 3.2** focuses on the distribution of revenues. Both tables include historical and projected figures.

Table 3.1 September 2011 Forecast by Source (In millions of dollars)

Change from June 2011 Forecast

Timber Sales	FY 08	FY 09	FY 10	FY 11	FY 12	FY 13	FY 14	FY 15
Volume (mmbf)	660	541	730	591	679	679	679	597
Change	-	-	-	(16)	5	5	5	-
% Change	0%	0%	0%	-3%	1%	1%	1%	0%
Price ($/mbf)	$247	$174	$245	$339	$282	$274	$308	$320
Change	$0	$0	$0	-$4	-$18	-$26	-$2	$0
% Change	0%	0%	0%	-1%	-6%	-9%	-1%	0%
Value of Timber Sales (In millions of dollars)	**$ 163.0**	**$ 94.0**	**$ 178.5**	**$ 200.4**	**$ 191.3**	**$ 185.9**	**$ 208.9**	**$ 191.1**
Change	$ -	$ -	$ -	$ (7.8)	$ (10.8)	$ (16.2)	$ 0.1	$ -
% Change	0%	0%	0%	-4%	-5%	-8%	0%	0%

Timber Removals	FY 08	FY 09	FY 10	FY 11	FY 12	FY 13	FY 14	FY 15
Volume (mmbf)	504	506	801	670	598	644	719	655
Change	-	-	-	(10)	3	1	33	4
% Change	0%	0%	0%	-1%	1%	0%	5%	1%
Price ($/mbf)	$311	$252	$226	$280	$298	$282	$286	$302
Change	$0	$0	$0	$2	-$10	-$21	-$17	-$8
% Change	0%	0%	0%	1%	-3%	-7%	-6%	-3%
Timber Revenue (In millions of dollars)	**$ 156.6**	**$ 127.2**	**$ 181.0**	**$ 187.8**	**$ 178.0**	**$ 181.5**	**$ 205.5**	**$ 197.8**
Change	$ -	$ -	$ -	$ (1.6)	$ (5.0)	$ (13.2)	$ (2.6)	$ (4.0)
% Change	0%	0%	0%	-1%	-3%	-7%	-1%	-2%

Lease Revenue	FY 08	FY 09	FY 10	FY 11	FY 12	FY 13	FY 14	FY 15
Agricultural and Mineral	$ 23.8	$ 22.3	$ 21.3	$ 21.5	$ 21.7	$ 26.4	$ 22.2	$ 22.6
Change	$ -	$ -	$ -	$ 0.5	$ (0.2)	$ (0.2)	$ -	$ -
% Change	0%	0%	0%	2%	-1%	-1%	0%	0%
Commercial	$ 9.2	$ 9.4	$ 10.0	$ 10.1	$ 9.5	$ 9.5	$ 9.5	$ 9.5
Change	$ -	$ -	$ -	$ 0.1	$ -	$ -	$ -	$ -
% Change	0%	0%	0%	1%	0%	0%	0%	0%
Aquatic Revenue	$ 20.4	$ 20.9	$ 30.8	$ 37.7	$ 29.8	$ 28.6	$ 28.6	$ 29.1
Change	$ -	$ -	$ -	$ (0.2)	$ 4.7	$ 3.0	$ 3.1	$ 3.1
% Change	0%	0%	0%	0%	19%	12%	12%	12%
Total Lease Revenue	**$ 53.4**	**$ 52.6**	**$ 62.1**	**$ 69.2**	**$ 60.9**	**$ 64.5**	**$ 60.2**	**$ 61.2**
Change	$ -	$ -	$ -	$ 0.5	$ 4.5	$ 2.8	$ 3.1	$ 3.1
% Change	0%	0%	0%	1%	8%	5%	5%	5%
Total All Sources	**$ 210.0**	**$ 179.8**	**$ 243.1**	**$ 257.0**	**$ 238.9**	**$ 246.0**	**$ 265.8**	**$ 259.0**
Change	$ -	$ -	$ -	$ (1.1)	$ (0.5)	$ (10.4)	$ 0.5	$ (0.9)
% Change	0%	0%	0%	0%	0%	-4%	0%	0%

Note Trust land transfer is not included in distribution revenues.
This table excludes interest and Land Bank transactions, fire assessments, permits, and fees.
Totals may not add due to rounding.
Draft report - subject to change without notice

Table 3.2: September 2011 Forecast by Fund (In millions of dollars)

							RMCA at 27%		
Change from June 2011 Forecast							$ 34.0		
Management Funds		FY 08	FY 09	FY 10	FY 11	FY 12	FY 13	FY 14	FY 15
041	RMCA - Upland	$ 32.0	$ 26.5	$ 31.8	$ 33.9	$ 31.5	$ 31.6	$ 34.0	$ 32.4
	Change	$ -	$ -	$ -	$ 0.3	$ (0.1)	$ (4.6)	$ (0.2)	$ (0.5)
	% Change	0%	0%	0%	1%	0%	-13%	0%	-2%
041	RMCA - Aquatic	$ 8.6	$ 8.9	$ 13.9	$ 17.5	$ 13.3	$ 12.6	$ 12.7	$ 12.9
	Change	$ -	$ -	$ -	$ (0.0)	$ 2.5	$ 1.7	$ 1.7	$ 1.7
	% Change	0%	0%	0%	0%	23%	15%	15%	15%
014	FDA	$ 18.6	$ 17.3	$ 25.9	$ 25.8	$ 21.7	$ 22.5	$ 24.6	$ 24.8
	Change	$ -	$ -	$ -	$ (0.7)	$ (1.7)	$ (0.8)	$ (2.2)	$ (2.2)
	% Change	0%	0%	0%	-3%	-7%	-4%	-8%	-8%
Total Management Funds		**$ 59.2**	**$ 52.7**	**$ 71.6**	**$ 77.1**	**$ 66.5**	**$ 66.7**	**$ 71.3**	**$ 70.0**
	Change	$ -	$ -	$ -	$ (0.4)	$ 0.7	$ (3.8)	$ (0.7)	$ (1.0)
	% Change	0%	0%	0%	-1%	1%	-5%	-1%	-1%
Current Funds		FY 08	FY 09	FY 10	FY 11	FY 12	FY 13	FY 14	FY 15
113	Common School Construction	$ 56.6	$ 41.5	$ 47.9	$ 56.5	$ 57.9	$ 65.0	$ 69.6	$ 67.8
	Change	$ -	$ -	$ -	$ 0.5	$ 0.4	$ (2.3)	$ (0.4)	$ (1.0)
	% Change	0%	0%	0%	1%	1%	-3%	-1%	-1%
999	Forest Board Counties	$ 52.5	$ 48.6	$ 67.9	$ 70.5	$ 63.3	$ 61.8	$ 69.4	$ 67.9
	Change	$ -	$ -	$ -	$ (1.4)	$ (3.0)	$ (4.9)	$ 0.2	$ 0.3
	% Change	0%	0%	0%	-2%	-4%	-7%	0%	0%
001	General Fund	$ 3.0	$ 1.4	$ 5.0	$ 4.2	$ 3.5	$ 3.4	$ 3.4	$ 3.3
	Change	$ -	$ -	$ -	$ 0.0	$ (0.4)	$ 0.4	$ 0.1	$ (0.1)
	% Change	0%	0%	0%	1%	-11%	13%	2%	-2%
348	University Bond Retirement	$ 2.3	$ 3.4	$ 1.8	$ 1.3	$ 1.2	$ 2.1	$ 2.4	$ 2.4
	Change	$ -	$ -	$ -	$ 0.1	$ (0.3)	$ (0.1)	$ (0.0)	$ (0.0)
	% Change	0%	0%	0%	6%	-21%	-5%	-1%	-2%
347	WSU Bond Retirement	$ 1.2	$ 1.6	$ 1.2	$ 1.4	$ 1.1	$ 1.1	$ 1.1	$ 1.1
	Change	$ -	$ -	$ -	$ 0.3	$ 0.3	$ (0.2)	$ -	$ -
	% Change	0%	0%	0%	34%	37%	-14%	0%	0%
042	CEP&RI	$ 3.8	$ 3.8	$ 5.6	$ 4.9	$ 6.7	$ 6.0	$ 6.0	$ 6.1
	Change	$ -	$ -	$ -	$ (0.2)	$ 0.5	$ (0.3)	$ 0.0	$ (0.1)
	% Change	0%	0%	0%	-4%	8%	-6%	0%	-1%
036	Capitol Building Construction	$ 5.2	$ 5.7	$ 8.7	$ 8.7	$ 8.0	$ 8.5	$ 9.1	$ 8.1
	Change	$ -	$ -	$ -	$ 0.2	$ (0.7)	$ (0.1)	$ 0.1	$ (0.1)
	% Change	0%	0%	0%	3%	-8%	-1%	1%	-2%
061/3	Normal (CWU, EWU, WWU, TESC)	$ 0.1	$ 0.1	$ 0.1	$ 0.1	$ 0.1	$ 0.1	$ 0.1	$ 0.1
	Change	$ -	$ -	$ -	$ (0.0)	$ 0.0	$ (0.0)	$ -	$ -
	% Change	0%	0%	0%	-18%	46%	-15%	0%	0%
Other Funds		$ 0.2	$ 0.4	$ 0.1	$ 0.1	$ 0.0	$ -	$ 0.2	$ 0.4
	Change	$ -	$ -	$ -	$ 0.1	$ 0.0	$ (0.0)	$ 0.0	$ 0.0
	% Change	0%	0%	0%	4322%	61%	-100%	0%	0%
Total Current Funds		**$ 125.0**	**$ 106.5**	**$ 138.3**	**$ 147.6**	**$ 141.8**	**$ 148.1**	**$ 161.4**	**$ 157.3**
	Change	$ -	$ -	$ -	$ (0.3)	$ (3.2)	$ (7.6)	$ (0.1)	$ (1.0)
	% Change	0%	0%	0%	0%	-2%	-5%	0%	-1%

(Continued)

Table 3.2 (Continued): September 2011 Forecast by Fund (In millions of dollars)

Change from June 2011 Forecast

Aquatic lands Enhancement Account		FY 08	FY 09	FY 10	FY 11	FY 12	FY 13	FY 14	FY 15
02R		$ 11.7	$ 12.0	$ 16.8	$ 20.2	$ 16.5	$ 15.9	$ 15.9	$ 16.2
	Change	$ -	$ -	$ -	$ (0.1)	$ 2.2	$ 1.4	$ 1.4	$ 1.4
	% Change	0%	0%	0%	-1%	15%	9%	9%	9%

Permanent Funds		FY 08	FY 09	FY 10	FY 11	FY 12	FY 13	FY 14	FY 15
601	Agricultural College Permanent	$ 4.3	$ 2.9	$ 6.1	$ 2.9	$ 3.6	$ 3.2	$ 3.5	$ 3.7
	Change	$ -	$ -	$ -	$ (0.4)	$ 0.3	$ (0.1)	$ 0.0	$ (0.1)
	% Change	0%	0%	0%	-12%	10%	-2%	0%	-1%
604	Normal School Permanent	$ 3.1	$ 2.5	$ 4.0	$ 3.0	$ 2.2	$ 2.5	$ 3.1	$ 3.0
	Change	$ -	$ -	$ -	$ 0.2	$ (0.4)	$ (0.2)	$ (0.1)	$ (0.1)
	% Change	0%	0%	0%	8%	-14%	-7%	-2%	-2%
605	Common School Permanent	$ 0.2	$ 0.3	$ 0.4	$ 0.2	$ 0.4	$ 0.5	$ 0.4	$ 0.4
	Change	$ -	$ -	$ -	$ (0.2)	$ (0.0)	$ (0.0)	$ -	$ -
	% Change	0%	0%	0%	-48%	-1%	-1%	0%	0%
606	Scientific Permanent	$ 6.0	$ 2.8	$ 5.1	$ 5.7	$ 7.4	$ 8.6	$ 9.8	$ 8.2
	Change	$ -	$ -	$ -	$ 0.3	$ (0.1)	$ (0.1)	$ (0.1)	$ (0.2)
	% Change	0%	0%	0%	5%	-2%	-1%	-1%	-3%
607	University Permanent	$ 0.5	$ 0.1	$ 0.7	$ 0.3	$ 0.7	$ 0.6	$ 0.4	$ 0.2
	Change	$ -	$ -	$ -	$ (0.2)	$ 0.0	$ 0.1	$ 0.0	$ (0.0)
	% Change	0%	0%	0%	-39%	7%	10%	11%	0%
Total Permanent Funds		$ 14.1	$ 8.6	$ 16.3	$ 12.1	$ 14.2	$ 15.3	$ 17.3	$ 15.5
	Change	$ -	$ -	$ -	$ (0.3)	$ (0.1)	$ (0.3)	$ (0.1)	$ (0.3)
	% Change	0%	0%	0%	-2%	-1%	-2%	-1%	-2%

Total All Funds		FY 08	FY 09	FY 10	FY 11	FY 12	FY 13	FY 14	FY 15
Total		$ 210.0	$ 179.8	$ 243.1	$ 257.0	$ 238.9	$ 246.0	$ 265.8	$ 259.0
	Change	$ -	$ -	$ -	$ (1.2)	$ (0.5)	$ (10.4)	$ 0.5	$ (0.9)
	% Change	0%	0%	0%	0%	0%	-4%	0%	0%

Note: Trust land transfer is not included in distribution revenues.
This table excludes interest and Land Bank transactions, fire assessments, permits, and fees.
Totals may not add due to rounding.
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