Forest Management & Financial Options for Blodgett Forest

Report prepared by Ken Hines

October 5, 2017

Table of Contents

Introduction

I was hired this summer to develop and analyze forest management and financial options for the Blodgett Forest (the "Blodgett" or the "forest") for the owner, the College of Forestry (the "College") at Oregon State University (OSU or the "University").

I worked with a team of outside and inside experts. We built off work the College began in 2014, including a new third-party inventory and appraisal completed in 2015, and interim harvests conducted by the College in 2016-2017. We then developed updated inventories, harvest plans and cash flow models. We also conducted detailed legal reviews. While I worked with many others, and received their comments on drafts of this report, the final product and any opinions expressed herein are solely mine.

The forestry data used for our recommendations is adequate, but caution should be used. We chose to slightly reduce the current inventory assumptions concerning both the acres containing mature timber and the likely volume to be harvested, based on our analysis of the 2016-2017 interim harvesting. This could prove overly conservative, or liberal.

Future timber prices are subject to considerable uncertainty and volatility. We took a thorough and detailed look at the current and historical markets and prices for the specific types of timber present on the Blodgett. Our forecasted prices are consistent with methodologies and assumptions used in the timberland investment markets currently. However, based on past history of prices, it is certain that future, actual results will differ significantly from our forecast.

There are a host of non-forestry and non-financial factors which will be considered by the ultimate decision makers as they weigh their options for the Blodgett. I recognize that these are very important. This report intentionally does not address any of them, except when they may impact the feasibility of an option.

Executive Summary

The Blodgett was gifted to the College is 1929, with a deed restriction that it remain in forestry use. The property is zoned as Exclusive Forest Use under Oregon land use law. The Blodgett is 2,423 acres in Columbia County, Oregon, with good to excellent site quality, in a largely industrial forestry area. It is 135 miles from the Corvallis campus (a roughly two-and-a-half-hour drive).

The College's core mission is education and research. The Blodgett has very limited use in research, and none in education and recreation. Therefore, the Blodgett should be viewed as a financial asset. The College has a fiduciary duty to maximize the financial support the Blodgett provides its core mission. The College needs a steady and predictable flow of cash for supporting its mission.

The Blodgett was largely cut over land at the time of the gift. The forest has a very uneven age class distribution. There are 711 acres containing over-mature timber that is 80+ years old. These stands are well past financial maturity and many of the trees in them are growing too large for many of the domestic mills within economic haul distance of the forest. About half the land contains well-distributed age classes between one and 30 years old. There is practically no acreage in the 50 years between ages 31 and 79.

Outline of Options

A rapid harvest of all the mature timber

All of the over-mature timber needs to be harvested as soon as possible, within the constraints of Oregon forest practices regulations and good stewardship. We developed a new, stand-by-stand detailed harvest plan. The College can harvest 561 acres in the first two years, followed by a three-year pause for green up requirements, and then the remaining 210 acres can be harvested.

This creates a very uneven cash flow pattern for the school, with $10.5 million (MM) in net cash flow in years one and two, and $4.1MM in years six and seven, with slightly negative cash flows in the other years of the first decade. There are then low, and variable, cash flows for the next 40 years, due to the uneven age class structure. In some years the cash flows are negative, implying that the College will have to use funds from other sources to support continued ownership and operation of the forest.

The near-term harvest of this large number of acres presents some administrative challenges based on the current in-house method used with smaller sales. These can be addressed either by hiring third party help, or selling some timber in a lump sum manner. All logs will need to be sold into domestic markets, foregoing the material premium that log exports fetch.

The College would also retain the risks of ownership of the forest, including risk of loss from fire, wind, insects, or disease; market risk; and regulatory risk. The College would also retain the management responsibility for the forest. The cash flow variability would be very challenging for the College, based on their need for a steady and predictable level of support.

Selling a 50-year timber deed

We explored having the College sell a 50-year timber deed, whereby the College would retain the land but sell the timber rights as a separate real property interest to a third party. The College would get substantial cash up-front, reducing their risk and administrative burdens, while stabilizing their ongoing cash flows. This structure allows an investor to assume the timber risk and cash flows for a defined period, and then the ownership of the timber reverts to the College.

We focused hard on this option. Our team has extensive experience in this type of transaction. We have seen this option solve both financial and other social and non-financial issues in other instances.

We have concluded that this option is technically feasible. However, we do see several substantial challenges to selling a 50-year timber deed on the Blodgett.

First, our outside counsel concluded that, since the underlying land would still be owned by the College, the forest management rules that apply to state lands under the Oregon Revised Statutes and University Standards would still apply. This includes the log export ban, which would reduce the price received for logs and therefore the attractiveness to a bidder and the price they would be willing to pay.

Second, our outside counsel concluded any potential bidder who has exported logs within the preceding 24 months from any private timberlands they own or control would be prohibited from bidding on the timber deed. This would greatly reduce the buyer pool, likely excluding most, if not all, timberland investors. The pool would likely be the same pool that buys logs from the Blodgett today.

Lastly, the cash flow pattern described above would also be very disadvantageous for a pension/Timber Investment Management Organization (TIMO) buyer. Most of their capital would be returned quite early, and TIMO fees would drop quickly also.

Theoretically, the timber deed should be valued at the Net Present Value (NPV) of the first 50 years of timber cash flows, (excluding the residual value, which would revert to the College). In our current model, this figure is $16.2MM.

In sum, the sale of a 50-year timber deed is technically feasible, but would face several challenges in the market, including a limited pool of potential bidders and limited markets for the logs. The ultimate outcome of such an offering can only be determined by trying it.

Selling the Blodgett

We then analyzed an outright sale. An appraisal done in 2015 estimated the value at $23MM. This was based on the new buyer being a private owner, and therefore unrestricted by the rules governing state owned lands. The College has since harvested close to $2MM worth of timber from the Blodgett, and would need to pay fees to a broker (likely 2-2.5% all in). I understand the College may update the appraisal, but I would forecast it might net $19-21MM from a sale.

This option would allow the College to invest in a diversified portfolio of financial assets, which should create a steady flow of cash with significantly reduced level of risk, and little to no administrative responsibilities. Of course, the College would then have the risks of financial markets.

Editorial Opinions

A significant uncertainty to either an outright sale or the sale of a timber deed is whether buyers would be spooked by the recent Elliott State Forest (the “Elliott”) failed sale, the public outcry, or the legal challenges around that. I am not referring to the possibility of public outcry or legal challenges as options are weighed – as I stated I have specifically excluded that from this analysis. The recent challenges and uncertainties suffered by bidders/buyer in that process will cause pause among the likely buyers for the Blodgett, by how much is anyone's guess.

Having said that, there are and could be material differences between the Elliott sales process and the one contemplated for the Blodgett. The Elliott was a high-profile forest, in the news for several years with a great deal of stakeholder interest. In contrast, the Blodgett is barely one hundredth the size of the Elliott with little or no existing public profile. The sales process for the Elliott was complex and non-conventional with a high cost associated with bid preparation. If the Blodgett is to be sold, I recommend a straight forward, conventional two-stage sales process handled by a competent third-party broker. Furthermore, I suggest providing prospective buyers with a dataroom including all the inventory, harvest schedule and cash-flow information on the Blodgett. This will reduce the cost of preparing offers and should mitigate some of the uncertainties associated with the Elliott process.

There is also significant uncertainty as to whether someone would want to purchase either a 50-year timber deed or the property outright, given the issues around the large amount of over-mature timber and the uneven age class structure of the Blodgett. The mature timber represents 75-80% of the total value. It is both most of the value and most of the risk – markets, loss, regulatory, and price. The following table summarizes key data for the four options, derived from our new cash flow models

	Year 1 cash flow	First 10-year cash flow	NPV of first 10 years	NPV in total
1. Keep Land, Harvest Over-Mature Timber[1]	$6.4MM	$14.3MM	$12.6MM	$17.2MM
2. Keep Land, Sell Stumpage of Over-Mature Timber[2]	$9.8MM	$13.3MM	$12.6MM	$17.2MM
3. Sell 50-year Timber Deed[3]	$16.2MM	$16.2MM	$16.2MM	$17.2MM
4. Sell Fee Land[4]	$19-21MM	$19-21MM	$19-21MM	$19-21MM

Background

The College of Forestry at Oregon State University was gifted the Blodgett Forest (the "Blodgett" or the "forest") on May 20, 1929. Today, the Blodgett comprises 2,422.8 acres of quality forestland in Columbia County, Oregon. The property is zoned as Exclusive Forest Use under Oregon Land Use law, and the deed contains a covenant requiring that the forest remain in forestry use with no other restrictions.

---

[1] Numbers are from the 10-year, export restricted model; annual cash flows for the next 40 years are low and variable (see 50-year export restricted model); option 1 is net.

[2] Numbers are from the 10-year, export restricted model; 10-year cash flow includes an estimate of the year 5 stumpage sale ($3.5MM), from the gross dollars estimated of $4.1MM; annual cash flows for the next 40 years are low and variable (see 50-year export restricted model); option 2 is net.

[3] Option 3 uses the 50-year export restricted model, total NPV less the NPV of the residual (just shy of $1MM); option 3 is gross - expected transactions costs are 2-2.5%.

[4] Option 4 is based off the 50-year exports not restricted model's NPV of $19.1MM, and in 2015 the comp sales and cost approach added $2MM over the income approach; option 4 is gross - expected transactions costs are 2-2.5%.

The Blodgett is approximately 135 miles (a roughly two-and-a-half-hour drive) from the College campus in Corvallis, Oregon. Since it was gifted to OSU, the forest has had a relatively limited role in advancing the College's core mission of education. No educational activities occur on the forest, and only one active research study is present on a small tract on the perimeter of the forest along with monitoring for Swiss Needle Cast. As the Blodgett is in an intensively managed industrial forest, it has limited appeal for public recreation. Notably, it has never been managed for non-economic values.

Net Revenue to the College from the Blodgett Forest	
2007	1,510,136
2008	80,621
2009	-
2010	-
2011	-
2012	2,526,616
2013	413,190
2014	-
2015	-
2016	607,925
2017	1,139,688
TOTAL	6,278,176

Consequently, the Blodgett has been historically – and is currently – managed as a financial asset of the College. The Blodgett was largely cut over land just prior to being gifted to OSU 88 years ago. Since then, it has had a history of different management regimes, and has provided some irregular but substantial financial support to the College. The self-reported net revenue to the College (after management costs) from the forest over the last decade is presented in the table at left.

Given the forest's nature as a financial asset, the Dean of the College commissioned an independent assessment of available options to maximize the financial contribution of the Blodgett in support of the core research and education mission of the College, now and into the future. The key results of this assessment are presented in the subsequent sections of this report, following a brief history of inventory and appraisal of the Blodgett.

Independent Inventory and Appraisal of the Blodgett Forest

Internal discussions to develop a long-term strategy for managing the forest began in 2014. At that time, the Dean of the College and Forest Director decided to seek additional information from external experts to provide a foundation for deciding on the best plan for moving forward. As a first step, the College ordered a new inventory and then an appraisal to characterize the timber stands in the context of harvest for generating revenue over time.

Inventory

A detailed inventory of the entire forest was ordered from Pacific Rim Forest Management, LLC, which was delivered on May 14, 2015. Pacific Rim designed the inventory cruise to focus on forest stands with merchantable timber based on existing stand maps maintained by the College. The work done by Pacific Rim revealed two insights highly relevant to the College's interest in charting a course for the future.

First, the forest has a very uneven age class distribution that will result in highly variable and irregular future cash flows when implementing a sustainable timber harvest plan. Of the 2,422 acres, there were

771 acres of timber over 80 years old that were well past financial maturity. There is a decently smooth age class spread of about 1,200 acres between zero to 30 years old. However, there were practically no acres in ages 31-79. The key implication is there will be large periods of time with little to no cash flow from the Blodgett.

The second key take away from the inventory was that the presence of 771 acres containing 45MMBF of over-mature timber indicates a lack of proper financial or forestry stewardship of the Blodgett in past years. Current growth estimates of the mature timber stands are positive, but they are below today's cap rates for timber. As a result, these stands are well beyond financial maturity, and some percentage of stems in these older stands may well be too large in diameter for many, local mills – a problem that will become progressively worse because the stands will continue to grow and as local markets for large timber continue to shrink.

Appraisal

After the inventory was completed, an appraisal was conducted by Stuntzner Engineering and Forestry, LLC, of Dallas, Oregon. The appraisal was done by their primary forester, Cliff Barnhart and completed on October 27, 2015 (with an "as of" date of July 16, 2015).

The appraisal incorporated the new inventory and stand maps provided by the College. The appraisal placed the estimated value of an arms-length sale to a private party at $23MM.

Interestingly, the Net Present Value (NPV) of the cash flow stream ranged between $21.1MM at a 5% capitalization rate and $22.3MM at a 4.5% capitalization rate. The comparable sales method yielded a value of $24.8MM based on a comparison to five sales in the region. The cost method yielded $24.4MM based on the high value of the mature timber. The final value of $23MM fell in between these figures.

As part of this appraisal, Stuntzner prepared a 50-year cash flow model (in five-year increments). It reflected harvesting the entire 881 acres with mature timber in the first 10 years – a harvest total of 48.5MMBF (including growth). This generated a substantial amount of net cash flow in the first 10 years, with nearly $13.7MM in the first five years, and $5MM over the following five years. The model then projected very modest cash flows over the next 15 years, averaging $250,000/year, before cash flows increased up to approximately $500,000 to $700,000/year thereafter.

The appraisal also recorded non-timber income from small mineral leases averaging approximately $9,500/year over the past three years. These were assumed at $10,000/year going forward.

As part of the appraisal, Blue Source, LLC, was engaged by the appraisers to provide a carbon assessment for the subject. Their report was included as an addendum to the appraisal. Blue Source evaluated the carbon market potential using two different approaches know respectively as an "Improved Forest Management Project" and an "Avoided Conversion Project". While Blue Source found potential to produce revenue under the Avoided Conversion Project model, the deed restriction on the property limiting management to “forestry purposes” was found to exclude that avenue for revenue generation, this option was not considered further.

Interim management (2016-2017)

After the new inventory and appraisal were received and analyzed, the decision was made to harvest a portion of the over-mature stands. According to College records, 90 acres were harvested in 2016 and 2017, generating $1.67MM for the school from 4.6 MMBF. In addition, 75 acres were thinned.

Update and Refinement of Inventory (2017)

In the summer of 2017, the College hired Hines Consulting to review the information and to outline their options. We then re-engaged Cliff Barnhart and Stuntzner to help refine the timber information from the prior inventory and appraisal. Specifically, Stuntzner was engaged to do the following:

1. Update the 2015 inventory for interim harvesting and growth;
2. Analyze the 2016-2017 harvest data;
3. Design a harvest plan for the over-mature stands within the constraints of the OR regulations; and
4. Provide a new 10-year annual cash flow model based on the new harvest plan, the updated inventory, while considering both the 2016-2017 actual harvest results and today’s market conditions.

Hines Consulting participated in this work along with Cliff Barnhart and the College Forest Director to complete the analytical work necessary to provide a foundation for providing viable financial options to present to the College to guide future management of the Blodgett.

As a result of this exercise, we chose to make a modest downward adjustment to the remaining mature acres left to harvest, and to the likely volumes that would be harvested, which are reflected in our new cash flow model. The College owns the risk around the quality of the inventory estimates and stand boundaries in any option. In a sale process, buyers will do their own cruises. The risk will be born out either through their cruises, or the continued operation of the Blodgett by the College.

The new harvest plan designed by Stuntzner was done on a stand by stand basis, using specific stand boundaries and set aside areas, and incorporating the applicable adjacency and green up requirements. The plan calls for harvesting the remaining 771 acres of over-mature timber as follows: year one 345 acres, year two 216 acres, then a three-year pause for green up requirements in the Oregon regulations, then year six 139 acres, and year seven 71 acres.

Strategic Options for Consideration by the College

Implement the New Harvest Plan Developed by Stuntzner

This option would generate an estimated $14.6MM in cash flow over the first seven years. $10.5MM would occur in the first two years, followed by a three-year gap without revenue but with some baseline management expenses, followed by an anticipated $4.1MM of cash flow in years six and seven. This scenario would involve six of the next 10 years with slightly negative cash flows.

Additionally, because of the uneven age class distribution, following year seven when the second harvest is completed, the model projects very modest cash flows over the next 15 years, averaging $250,000/year, before cash flows from a sustainable harvest plan increased up to approximately $500,000 to $700,000/year thereafter.

Note: If we use the College's actual results achieved in 2016-17, the resulting total cash flows are about 5% below the model's projection.

The NPV of this option at 5% is $17.2MM, but note that $4.6MM of this is the assumed NPV of the residual forest after 10 years. Importantly, this NPV is not from near term cash flow.

Administration of this accelerated harvest option is not without complications and must be considered carefully in light of the composition of existing forest management staff and the location of the Blodgett relative to Corvallis, where staff is located. Three options could be considered:

Status quo: Internal staff administration, and sell timber on a delivered log basis.

The College's internal staff has managed significant sales off the forest as recently as 2016 and 2017. This is administratively intensive, and the staff would not be able to handle harvesting 561 acres in the next two years without additional external help. That said there are companies that can provide this help, and the costs of administration in the model should cover those expenses.

The advantage of this approach is it would maximize each log's value, based on its best end market. The disadvantages are the administrative intensity, the need for external help, and the cash flows occur only after incurring harvesting and delivery costs.

Hold a timber stumpage sale on a lump sum, up front basis.

The advantage of this approach is that the buyer would pay up front, and would be responsible for all the logging and hauling, in compliance with all necessary regulations, and the merchandising. The buyer would also assume the risk of casualty from the time of the sale. OSU needs only to monitor the harvests, roads and regeneration. The disadvantage of this approach is that there are several marketable products coming from these stands, and no one buyer wants them all, so any buyer would need to remerchandise the logs they did not intend to utilize. This could reduce the attractiveness.

However, a single lump sum sale of all the mature timber would also entail a buyer paying today for wood that cannot be cut for six to seven years, and assuming the casualty risk during that period. This would be very unusual in the market, and it is unclear if a sale under these conditions could occur. We would not recommend this.

A more "normal" market alternative we would recommend would be to do one lump sum sale for the first two years, and then wait until year five for the second lump sum sale for the year six and seven harvests. The advantages for the buyer in breaking the sale into two tranches would include not having to pay as much, not be waiting five to seven years for the second wave of logs, and not having casualty risk during that time. This would be better received in the market and is perceived as more customary.

The disadvantage is that the College would likely get only $9.8MM now (the net present value of years one and two cash-flows), and then would need to wait five years for the next $4MM sale, which would likely bring in about $3.5MM. In addition, the College would retain casualty risk in the interim, and there would be slightly negative cash flows in the three-year time period between the first and second sale.

Sale of a 50-year Timber Deed

The team working with Hines Consulting studied this option at length and brought in outside counsel and private sector expertise with extensive experience in this unique arena. At the outset, this option appeared to be the preferred course of action because it allows the college to retain ownership of the underlying fee title to the land, while also receiving a majority of the appraised value of the timber up front. Furthermore, the investor in this option assumes all risks associated with the timber operation during the term of the lease.

We have concluded that this option is technically feasible, but we note several significant barriers to successfully completing this option:

The first barrier is the age-class distribution of the timber on the forest, which causes an imbalance in returns over time that has negative implications for potential purchasers of a long-term timber deed. As discussed above, the existing uneven age class distribution of the timber will result in the vast majority of the 50-year cash flow being realized in the initial seven years. Given this reality, the purchaser of the timber deed would be denied the opportunity to invest a substantial sum in the timber asset class by the rapid return of the initial invested capital. Further, a TIMO would suffer quick fee reductions, making it less economically attractive for the manager to invest in a timber deed of the Blodgett vs. other options.

The second and more significant barrier to selling a long-term deed of the timber rights on the Blodgett was revealed by a legal review conducted by both outside and University legal counsel. Said review concluded that since the underlying land would remain in University ownership, the timber would none-the-less be subject to the existing Oregon Revised Statutes and University Standards as though it were owned by the University and not the purchaser of the deed. As a result, the timber rights would be subject to the applicable log export rules for state-owned forestland.

The main restriction would be that any timber harvested would still be governed by the export log ban. Another significant implication of this conclusion is that current regulatory requirements would preclude any entity from bidding on a timber deed for the Blodgett who has exported logs from any private land it owns or controls over the preceding 24 months. Further, counsel advised that this restriction would remain even if the College precluded export of logs harvested on the Blodgett as a condition of the sale.

It is our conclusion that there is near certainty that these barriers would significantly "chill" the bidding environment and drive down both the number of potentially interested parties and ultimately the revenue the College could reasonably anticipate receiving from the sale of a timber deed. While there is no quantifiable data available to substantiate this conclusion, this was the unanimous conclusion of the independent experts engaged to assist Hines Consulting on this report.

Theoretically, the price the College would hope to receive in this sale would be the NPV of the first 50 years of timber flows in the domestic sale markets. This estimated to be $16.2MM. (This is found in the 50-year, export restricted model, total NPV less NPV of residual value).

An Outright Sale of the Forest

A new and updated appraisal of the forest is (may be) underway, but a rough estimate can be determined for purposes of this report based on adjusting the 2015 appraisal. The initial appraisal of $23MM included high comp sales, with the income approach at 5% estimating the net present value at $21MM. Given that the College harvested about 10% of the mature timber (worth roughly $2 million) since the 2015 appraisal was completed, the income approach would be estimated at $19MM. We had Stuntzner recalculate the 50-year cash flows based on the new inventory and prices, and this also resulted in an NPV just over $19MM. Therefore, a sale now could be assumed to bring approximately $19-21MM gross price. From this, the College can expect to pay a brokerage fee and related costs of 2-2.5%. Transactional sale of fee simple title could be expected to take approximately 180-210 days from decision to proceed through completion of the transaction.

Recommended Considerations

The biggest difference in the NPV of the College retaining ownership vs selling the property to a private party would be the ability to export logs. Therefore, we had our consultant run the 50-year cash flows for the forest, with the only difference being whether logs could be exported or not. We were very careful in our estimation of what logs could be exported or not, and what the prices would be. The NPV of the export model was $19.1MM, and the NPV of domestic only model was $17.1MM, a 10.5% reduction. This analysis does not account for the more restricted pool of buyers in the case of the sale of a timber deed which is likely to reduce our estimate of value by some unknown amount.

However, I believe the NPV of each option may be a misleading financial factor upon which to base the College's decision. The College requires a steady stream of cash to help achieve its objectives, as well as reduced risk, less management and administrative time.

Cash flows from owning the Blodgett and implementing the new harvest plan are subject to risks of fire, pests, ESA issues and local timber markets. They are also quite volatile. In the first ten years, there are four years of high flows and six of slightly negative flows. For the next 40 years, expected cash flows are quite low due to the age class gaps. Achieving these cash flows also requires a fair amount of administrative attention and cost on behalf of the school. Total cash flows in this scenario are estimated at only $14.6MM in the first ten years.

An outright sale would yield ($19-21MM) upon the sale, which may take 180-210 days. Proceeds from a sale could be invested in a diversified investment fund. Many university endowments pay out 4-4.5% currently, plus potential market growth (or declines). This is about $800,000/year in perpetuity. These flows are a much more steady and predictable stream of cash flows and would come with much less risk and management costs. The endowment represents a much more highly diversified investment with zero risk of fire, pests, or ESA issues, and zero local timber market risks. There would also be zero management costs. Of course, OSU would then be subject to broad financial market risks.

Exhibits

CV: Hines

2015 Stuntzner appraisal, which includes the 2015 Pacific Rim inventory report, the Blue Source report and the 50-year cash flow model

2017 – Stuntzner prepared updated 10-year annual cash flows, and 50-year cash flows in five-year buckets, each with domestic and then with export prices