

A GUIDE TO ANALYZING FORESTRY PROFIT POTENTIAL



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INTRODUCTION

“How can I make money from my forestland?” This is a common question that many landowners ask. In difficult economic times, forest assets are seen as a potential source of additional income; however, timber prices may also be depressed during these difficult economic times, causing landowners to be hesitant to harvest their timber, much less spend money on planting, herbicides, or other treatments to improve their forests. Forest management, therefore, must be viewed as an investment for the future. Although no one can foresee the exact outcome of an investment, there are some tools that can be used to evaluate land management options. This publication explains how landowners can analyze those options and provides instructions for using the Forestry Investment & Financial Analysis (FIFA) Tool, a spreadsheet application for keeping records and for simplifying forestry-based financial calculations.

Estimating the profit potential of forestland is difficult because of the variety of products produced. For example, southern forests can produce many useful products, with timber products being just one option. Examples of common timber products include saw timber, pulpwood, and poles. Other sources of income from forestland include hunting permits, pine straw harvesting, agroforestry, and other recreational permits such as fishing or camping. Forest management often involves a long planning horizon that can span many years, and this can complicate estimating profit potential because the value of a dollar today is not the same as that of a dollar in the future.

To help you better understand forest investments and how they are evaluated, this publication is divided into four sections. The first section looks at how time and inflation influence the value of forestry investments. The second section includes information and records that landowners need to maintain to make informed forestry-investment decisions. The third section outlines methods for analyzing investment profitability. The final section outlines how to use the spreadsheet-based FIFA Tool to examine your investment options.

HOW TIME AND INFLATION INFLUENCE THE VALUE OF FORESTRY INVESTMENTS

Handling Time - The Concept of Present Value

The concept of *present value* can be applied to both income and costs in the evaluation of forestry investments. It depends on what is called the *discount rate*, or the best interest rate on your alternative investment. For example, if you are to receive (or pay) 1 dollar 1 year from now and the current interest rate (discount rate) is 10 percent, then the present value of that future dollar is about 91 cents. The present value is like earning interest in reverse! It is lower than the face value of the dollar to be received (or paid) in the future.

Handling Inflation - Real vs. Nominal Interest Rates

You may hear people use the terms *real* and *nominal* interest rates when valuing investments. Real interest rates reflect returns on dollars of constant value, which *does not include* inflation. Nominal interest rates reflect returns in dollars of current value—that is it *includes* inflation. Confused? If so, take a look at the following example.

Assume that you have a savings account for which the bank pays you 7 percent interest. If you put \$100.00 in the account today and did nothing else, at the end of the year the total in your account would have increased to \$107.00. This is a current value, or *nominal* increase. If at the same time inflation were 3 percent, the *real* value (in terms of purchasing power) would be about \$104.00. The *real* rate of interest would be about 4 percent rather than 7 percent.

Forestry investments are often evaluated in terms of real interest rates. Be aware of this difference if you compare them to nominal rates of other investments such as savings accounts, certificates of deposit, or retirement accounts.

INFORMATION AND RECORDS NEEDED TO EVALUATE A FORESTRY INVESTMENT

When making forest-management and investment decisions, you need good information. This section covers some basic terminology you need to know and information you need to collect and maintain to help you analyze forestry investments.

Investment Period – A timberland investment, like any other investment, has a certain *investment period*, or timeframe that must be taken into account. This timeframe is called the *rotation*. The rotation length is the time it takes for a tree to grow from a seedling to a merchantable size. This is often between 30 to 50 years for southern pines and often greater than 50 years for hardwoods.

Site Index – To know how much your forest investment will be worth in the future, you must know what kind and how much timber will be growing in your forest at any given time. The rate at which timber will grow depends on the tree species and the capability of the land to grow trees. This ability is referred to as

the *site index*. Site index is the average height of the dominant and codominant trees at a given age, usually 25 or 50 years. A period of 25 years is often used for pine plantations, while 50 years is used for natural pine stands. For more information on site index and how it is calculated, see the Alabama Cooperative Extension System publication ANR-1424, *Site Index for Longleaf Pine*.

Growth and Yield – Another factor to consider when estimating forest values is how your trees will grow. Forest stand growth can be projected through the use of a *growth and yield model* or a *stand table projection*. These models will project the volume of wood produced throughout the rotation and may include management variables such as thinning, herbicide, and fertilization treatments. A registered forester or other land manager can help you determine which growth and yield model is best for your forestland.

Discount Rate – The *discount rate* is a key component in any investment. The discount rate may be the interest rate associated with borrowing money to complete forestry activities. If a loan is not needed, the landowner may have forgone other investment opportunities to complete those activities. In this case, the discount rate would be the rate the timberland investment would need to exceed to be viable. Nonindustrial, private landowners should consider how much money they could make on other investments when determining if investing in timberland is a good option for them.

Costs – *Costs* associated with a piece of timberland may include the purchase price of the land, site preparation, seedlings, planting, herbicide treatments, fire line and road construction, pre-commercial thinnings, and annual taxes, although not every landowner will have all of these expenses. Costs should be tracked and documented because they are truly investments in the future of your forests. For information on current costs of forest-management practices, contact your county Cooperative Extension System office or a

registered forester or land manager. Cost trends for forestry practices may also be found in the Alabama Cooperative Extension System publication FOR-2001, “Costs and Trends of Southern Forestry Practices, 2012” at <http://www.aces.edu/pubs/docs/F/FOR-2001/FOR-2001.pdf>.

Revenue – *Revenue* from forestland may occur on a regular basis, such as income from hunting permits or pine-straw raking, or it may occur periodically from timber harvests. Revenues from timber sales will differ based on the area, time of year, weather patterns, and general market behavior. Market values of timber, or stumpage prices, are reported in *Timber Mart-South* quarterly. In *Timber Mart-South*, stumpage prices, or the price paid to a landowner for trees “on the stump,” are reported for merchantable tree sizes, such as pulpwood, chip and saw, saw timber, veneer, and poles, and are given separately for hardwoods and pines. Contact your local Cooperative Extension System office for quarterly *Timber Mart-South* stumpage price updates.

Cost-Share Programs – Landowners can apply for *cost-share programs* to help offset some of the costs associated with forest management, such as planting and forest-stand establishment. These plans change from time to time and often have set times established for when a landowner may apply. While these programs can be of great help to landowners, they may have limitations as well. Be sure to understand all requirements and expectations before signing up for any assistance program. Information about current programs can be found at your county Forestry Commission, Cooperative Extension System, or Natural Resource Conservation Service office.

Taxes – Beyond basic land taxes, this can be a very complicated topic and often requires the assistance of a certified public accountant or tax attorney. Some basic guides are also provided by the USDA Forest Service and can be found at <http://www.fs.fed.us/spf/>

coop/programs/loa/tax.shtml. It is always a good idea to consult a professional for tax advice and guidance.

Now that you are aware of some of the information you need to help analyze your forest's profit potential, let's examine how we can analyze financial profitability to make the most of your woodland-management decisions.

METHODS FOR ANALYZING FINANCIAL PROFITABILITY

There are three ways that forestry investments are commonly evaluated: net present value (NPV), land expectation value (LEV), and benefit/cost ratio (B/C). Each of these criteria can help you determine the financial profitability of your woodland-management activities, but it is important to understand which measure is best for your situation.

NET PRESENT VALUE

NPV is a good way to evaluate long-term investments such as those related to forestry because it provides a dollar amount of how much your investment will return, at a given rotation length, with relation to the given discount rate. NPV is defined as the difference between the present value of all future income and the present value of all costs, at a given discount rate. In other words, it will tell you how much your forestry investment will return. A positive NPV tells you that your investment will return more money than another investment at the interest rate you choose for discounting. NPVs are sometimes negative, which means that the investment is not financially practical. For example, a negative \$5,000.00 NPV means that the forestry investment would need \$5,000.00 more in revenue in today's dollars to make a return.

LAND EXPECTATION VALUE

LEV is used to analyze the value of the timberland into perpetuity. LEV uses the present value of all revenues and expenses to estimate how much money can be produced in a timberland investment that will be managed as forestland forever. You may also hear LEV referred to as soil expectation value, the Faustmann formula, or bare land value. This measure is most commonly used to value even-aged forest stands, although it can also be used to value uneven-aged stands. It is important to remember that in analyzing investments using LEV, practices will continue in the same manner endlessly. LEV is typically used for defining the best management practice and the optimal rotation age for forest stands.

NPV and LEV financial criteria are affected by site quality, costs, prices, and interest rates. The site quality will affect the timber volume yield and, therefore, the revenues gained. Variability in costs and prices will also affect these two financial criteria. Interest rates, or discount rates, will affect these criteria also. When evaluating options, you must remember that present value should be greater than zero for any investment to be feasible.

BENEFIT/COST RATIO

B/C is used to analyze many investments, including timberland. This ratio is used to determine if the revenues outweigh the costs. As an estimate of a project's return per dollar of investment, the value given by this ratio should always be greater than or equal to one to be realistic. If the B/C of an investment is greater than one, the present value of the revenues is equal to or greater than the present value of the costs associated with a project.

WHICH IS BEST? MAKING A DECISION

If you are considering making any significant forestry investment, you will want to assess its profit potential using the methods described above. But which one is best? It depends on your situation.

Generally, NPV is the most useful and reliable method. You can use NPV to evaluate either an established or new timber stand. By considering the value of the current forest stand and estimating future value, growth, and costs, you can determine the stand's optimum harvest age. LEV is a special case of NPV which assumes an infinite timeline of projected costs and revenues, so it makes all investments equal in terms of time. B/C estimates the returns per dollar invested and is often used to determine if a project should be accepted or rejected.

USING THE FORESTRY INVESTMENT & FINANCIAL ANALYSIS TOOL

Now that you have some idea of what information is needed to determine the profitability of your forest-management activities, let's take a look at a tool that can help you maintain your records and analyze your investment options. The Forestry Investment & Financial Analysis (FIFA) tool is a spreadsheet application that was developed to help you maintain a historical record of activities on your forestland and determine the financial impact of certain forest-management decisions. The FIFA tool has been divided and color coded into several sections: Directions, Activity Journal, Information, Revenues, and Expenses worksheets. Once revenues and expenses are entered, present value for each subsection of revenues and expenses has been referenced to the Financial Totals worksheet. To download your own copy of the FIFA tool, go to <http://www.aces.edu/go/497>.

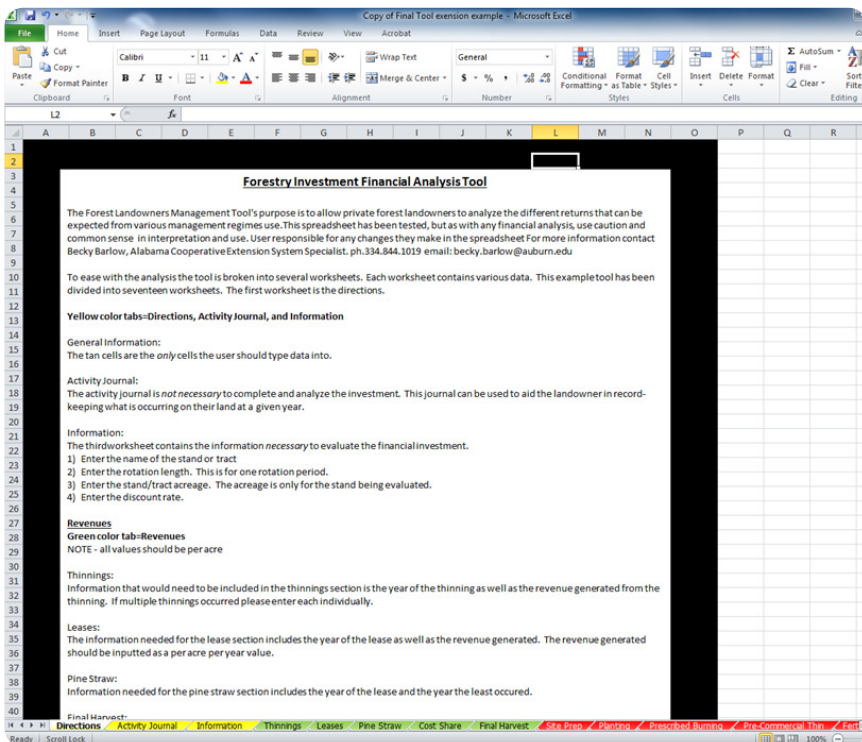


Figure 1. Screen shot of Directions worksheet found in the FIFA tool

DIRECTIONS, ACTIVITY JOURNAL, AND INFORMATION WORKSHEETS

The first three worksheets in the FIFA tool include the Directions worksheet, the Activity Journal worksheet, and the Information worksheet. The Directions worksheet shown in Figure 1 provides the user with detailed information about what this tool is and how it should be used. This worksheet also provides the user with definitions for the three financial criteria used, NPV, LEV, and B/C ratio, and with information about how the financial criteria should be analyzed.

1	Date	Detail of Activity	Revenue	Expense						
2			\$0.00	\$0.00						
3			\$0.00	\$0.00						
4			\$0.00	\$0.00						
5			\$0.00	\$0.00						
6			\$0.00	\$0.00						
7			\$0.00	\$0.00						
8			\$0.00	\$0.00						
9			\$0.00	\$0.00						
10			\$0.00	\$0.00						
11			\$0.00	\$0.00						
12			\$0.00	\$0.00						
13			\$0.00	\$0.00						
14			\$0.00	\$0.00						
15			\$0.00	\$0.00						
16			\$0.00	\$0.00						
17			\$0.00	\$0.00						
18			\$0.00	\$0.00						
19			\$0.00	\$0.00						
20			\$0.00	\$0.00						
21			\$0.00	\$0.00						
22			\$0.00	\$0.00						
23			\$0.00	\$0.00						
24			\$0.00	\$0.00						

Figure 2. Screen shot of Activity worksheet found in the FIFA tool

The second worksheet is the Activity Journal (Figure 2). This worksheet is not needed to complete your financial analysis using the FIFA tool; however, good records are a necessity, and this worksheet can be used to keep track of activities that have occurred on the forest throughout the rotation.

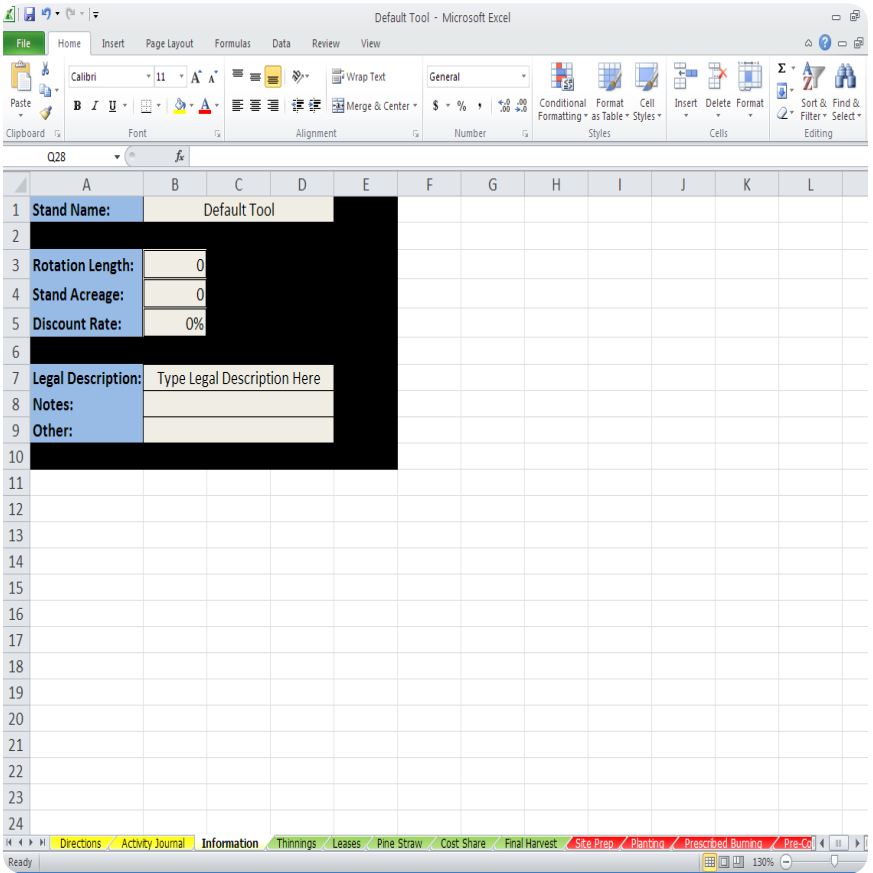


Figure 3. Screen shot of Information worksheet found in the FIFA tool

The third worksheet is the Information Worksheet (Figure 3). This worksheet contains data that is necessary for FIFA to work. The information the user must include is the rotation length, the stand acreage, and the discount rate. Information such as stand name, legal description, and notes can also be entered on this page.

REVENUES AND EXPENSES

All revenue and expense subcategories have been color coded to differentiate between revenues and expenses. Green worksheets represent revenues, and red worksheets represent expenses (Figure 4). Subcategories in the revenues section include the Thinnings worksheet, Leases worksheet, Pine Straw worksheet, Cost-Share worksheet, and a Final Harvest worksheet. Subcategories in the expenses section include the Site Prep worksheet, Planting worksheet, Prescribed Burning worksheet, Pre-Commercial Thinning

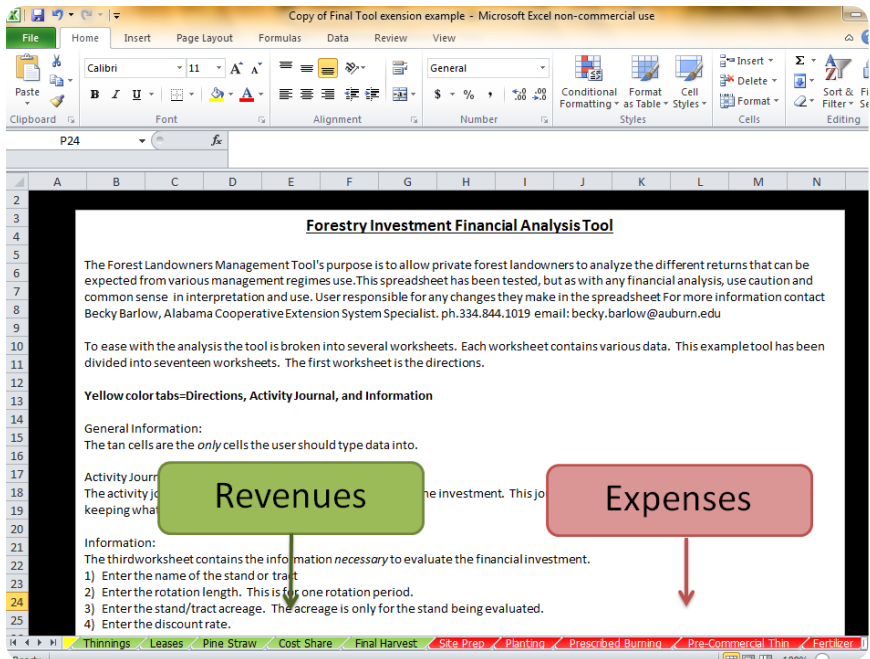


Figure 4. Screen shot of Revenue and Expenses worksheets found in the FIFA tool

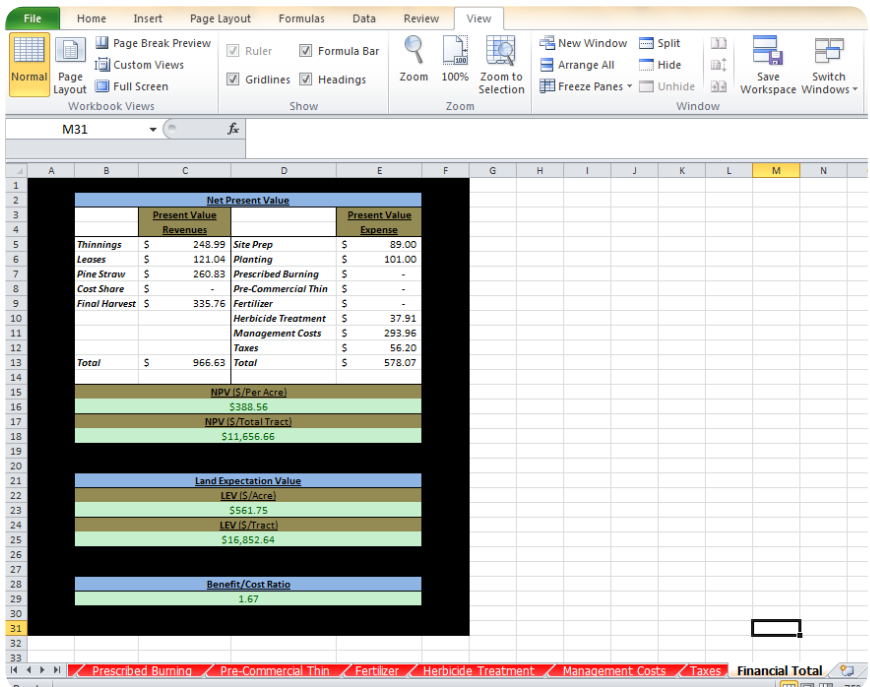


Figure 5. Screen shot of Financial Total worksheet found in the FIFA tool

worksheet, Fertilizer worksheet, Herbicide Treatment worksheet, Management Costs worksheet, and a Taxes worksheet. The user is required to enter data in the tan-colored cells only. From this entered information, FIFA will then calculate the present value for each revenue subcategory and expense subcategory. These present values are then referenced in the Financial Total worksheet (Figure 5).

FINANCIAL TOTAL

The Financial Total worksheet contains all three of the financial criteria associated with a forestry investment: NPV, LEV, and B/C

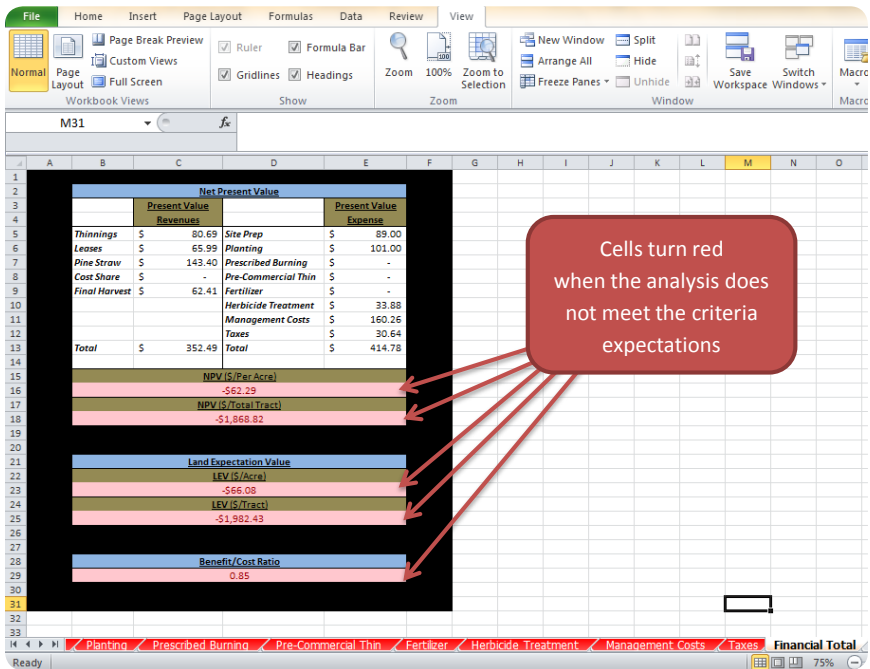


Figure 6. Screen shot of Financial Totals worksheets found in the FIFA tool showing an unacceptable investment result

ratio. This worksheet has been color-coded orange and uses the information entered from the previous worksheets to calculate the results for each of the criteria.

All three criteria can be used to analyze the investment. Each cell that contains the value of the criteria will change color based on whether the value meets the criteria. If the value does not meet the criteria, the cell will change to red (Figure 6). If the criteria are acceptable, the cell will turn green (Figure 7).

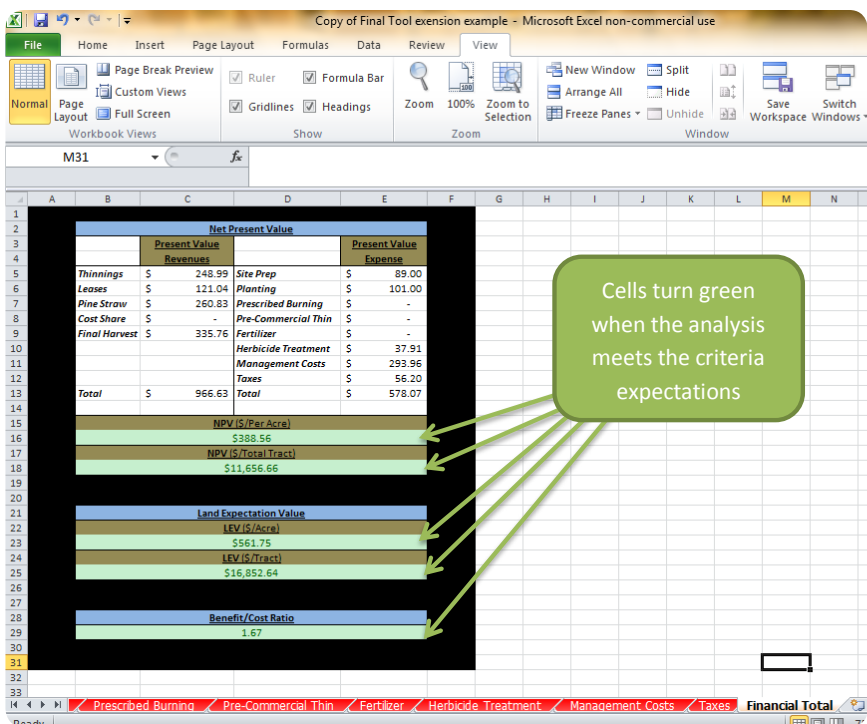


Figure 7. Screen shot of Financial Totals worksheets found in the FIFA tool showing an acceptable investment result

AN EXAMPLE OF HOW TO USE THE FIFA TOOL

Assume you have a 35-acre woodlot in northwest Alabama. You already own the property and are not planning to sell the land and invest the money elsewhere. Approximately 30 of the 35 acres were recently clear cut, with the remaining 5 acres left untouched as a streamside management zone (SMZ). You must now make a decision that is common to most woodland owners—how should you manage your woodlot? Should you plant it, hope for the best, and come back and see how things look in about 30 years? Or, should you actively manage it for a variety of forest products?

For this example, let's assume that this forest is slightly above average in terms of loblolly pine site quality, with a site index at age 25 of 62 feet. You have contracted with a local vendor that you know and trust to prepare the site, using a subsoiling technique, and then plant approximately 450 loblolly pine trees per acre. You did not sign up in time to qualify for any cost-assistance programs, so you incur all the costs yourself. You have a 4 percent acceptable rate of return; that is, you could invest your money elsewhere and earn at least 4 percent. Table 1 outlines your expected costs and revenues. Table 2 illustrates expected timber production in tons for years 15, 25, and 30 for your 30-acre woodland. Figure 8 provides a sample of how you might record some of this information in the FIFRA Activity Journal.

Table 1. Example of Costs and Revenues for Various Forest-Management Activities

Year	Activity	Estimated Cost	Estimated Revenue
Year 0	Site preparation	\$ 89.00/acre	
Year 0	Planting	\$101.00/acre	
Year 2	Release spraying	\$ 41.00/acre	
Annual	Property taxes	\$ 3.25/acre	
Annual	Management expenses	\$ 17.00/acre	
Year 15	Pine pulpwood harvest		\$ 9.00/ton
Year 25	Pine chip-n-saw harvest		\$ 16.00/ton
Year 30	Pine pulpwood harvest		\$ 9.00/ton
Year 30	Pine saw timber harvest		\$ 26.00/ton

Table 2. Example of Tons Per Acre of Loblolly Pine That Could Be Harvested by Year and Product

Year	Pulpwood (tons/acre)	Chip-n-Saw (tons/acre)	Saw timber (tons/acre)
15	21	0	0
25	0	24	0
30	17	0	36

	A	B	C	D	E	F	G	H	I	J
1	Date	Detail of Activity	Revenue	Expense						
2	9/2/00	Site preparation subsoil 30 acres	\$0.00	\$2,670.00						
3	12/22/00	Planting - 450 loblolly pine trees/acre	\$0.00	\$3,030.00						
4	1/1/01	Management costs/acre - boundary lines, etc.	\$0.00	\$17.00						
5	10/1/01	Taxes/acre	\$0.00	\$97.00						
6	1/1/02	Management costs/acre - boundary lines, etc.	\$0.00	\$17.00						
7	5/15/02	Release spraying 30 acres	\$0.00	\$1,230.00						
8	10/1/02	Taxes/acre	\$0.00	\$97.00						
9	1/1/03	Management costs/acre - boundary lines, etc.	\$0.00	\$17.00						
10	10/1/03	Taxes/acre	\$0.00	\$97.00						
11	1/1/04	Management costs/acre - boundary lines, etc.	\$0.00	\$17.00						
12	10/1/04	Taxes/acre	\$0.00	\$97.00						
13	1/1/05	Management costs/acre - boundary lines, etc.	\$0.00	\$17.00						
14	10/1/05	Taxes/acre	\$0.00	\$97.00						
15	1/1/06	Management costs/acre - boundary lines, etc.	\$0.00	\$17.00						
16	10/1/06	Taxes/acre	\$0.00	\$97.00						
17	1/1/07	Management costs - boundary lines, etc.	\$0.00	\$13.00						
18	1/1/08	Management costs - boundary lines, etc.	\$0.00	\$13.00						
19	1/1/09	Management costs - boundary lines, etc.	\$0.00	\$14.00						
20	1/1/10	Management costs - boundary lines, etc.	\$0.00	\$14.00						
21	1/1/11	Management costs - boundary lines, etc.	\$0.00	\$15.00						
22	1/1/12	Management costs - boundary lines, etc.	\$0.00	\$15.00						

Figure 8. Example of expenses as recorded in the FIFA tool

Once you have determined the activities you would like to conduct on your forest and the potential costs and revenues associated with those activities, you can begin to fill in the remaining sheets in the FIFA tool.

ENTERING REVENUES - EXAMPLE

Starting with expected revenues, or the green tabs, select the Thinnings tab and enter the expected revenues from your thinnings. As noted above, in consultation with a land-management professional, it is decided that you will plan for two thinnings: one at age 15 and a second at age 25 to improve tree growth and wildlife habitat. The first thinning you expect to harvest approximately 21 tons of pulpwood per acre (Table 2). Current timber stumpage

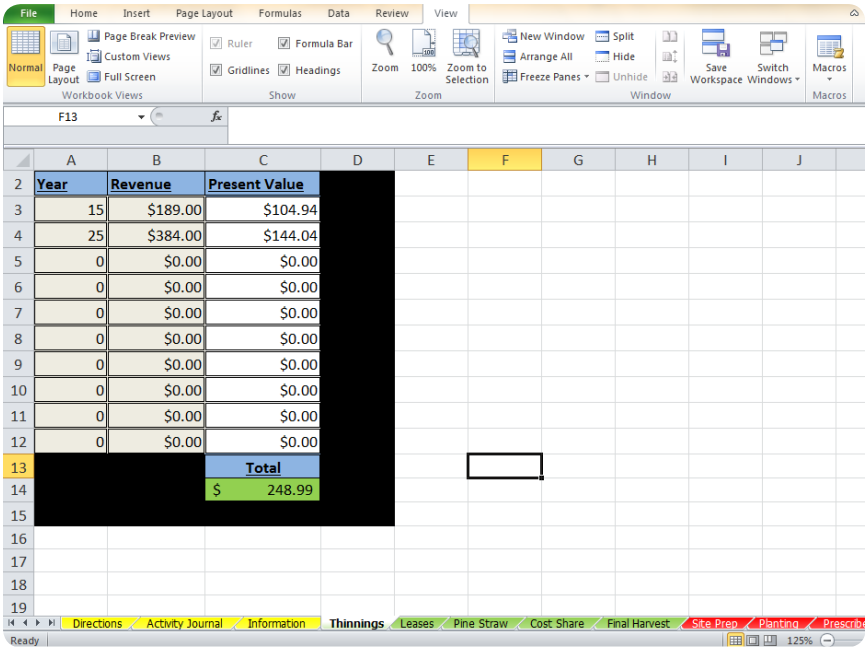


Figure 9. Example of thinning revenue per acre in years 15 and 25 and resulting Present Value per acre as entered into the Thinnings tab in the FIFA tool

prices for pulpwood are \$9.00 per ton (Table 1). If you multiply 21 tons by \$9.00 per ton, that gives you an estimated \$189.00 per-acre revenue from the first thinning. That number should be entered on the first line of the Thinnings tab in the FIFA tool (Figure 9). The same process should be completed for the second thinning at age 25 and that number entered on the second line of the Thinnings tab. The FIFA tool then calculates the present value for each activity and totals it at the bottom of the table (Figure 9). Repeat this process for your final harvest, remembering to total the revenue from both the pulpwood and saw timber harvested. The sum of those two numbers is then entered into the Final Harvest Tab (Figure 10). **Remember to enter all values as per acre and not the total for the entire woodlot!**

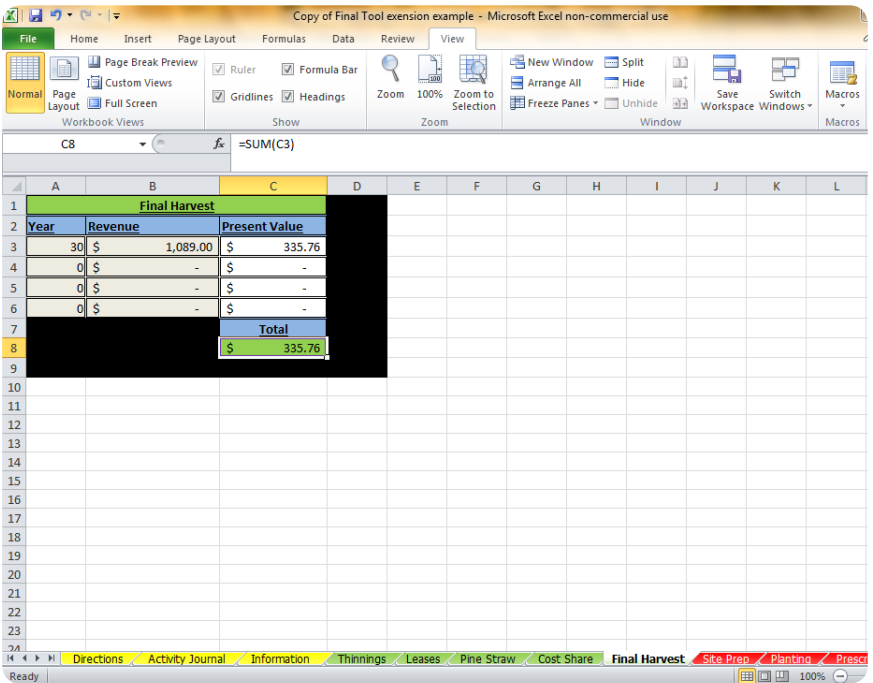


Figure 10. Example of final harvest revenue per acre in year 30 and resulting Present Value per acre as entered into Final Harvest tab in the FIFA tool

ENTERING EXPENSES - EXAMPLE

Expenses should be entered in a similar manner. Site prep (\$89.00 per acre) and Planting expenses (\$101.00 per acre) each occur in Year 0, or the beginning time period. These expenses should be entered into the Site Prep and Planting tabs as shown in Figures 11 and 12.

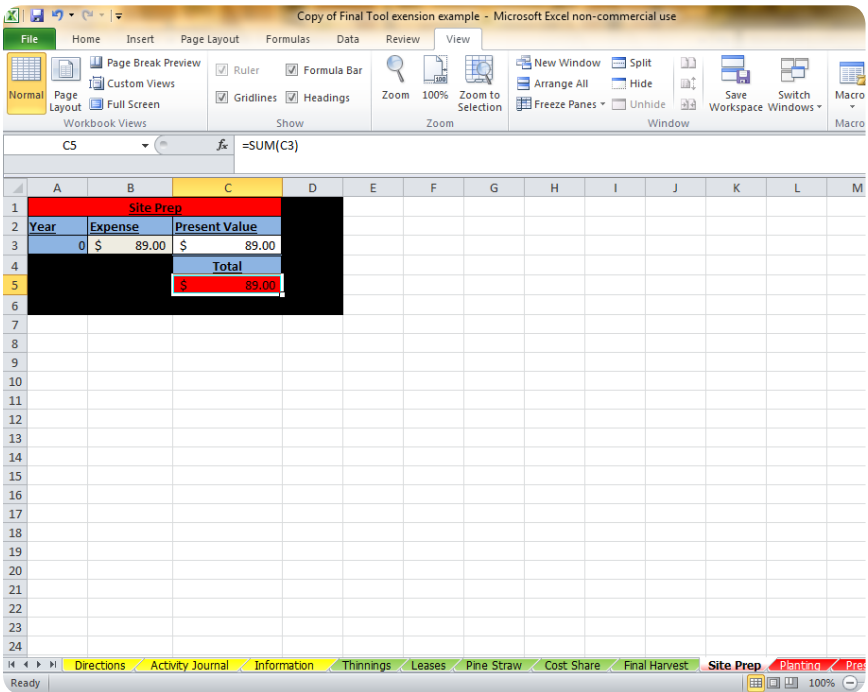


Figure 11. Example of site preparation expenses per acre in year 0 and resulting Present Value per acre as entered into Site Prep tab in the FIFA tool

Other treatments such as herbicides may occur at any time during the rotation, so they should be entered in the corresponding year cell on the appropriate tab. For this example, you plan to spend \$41.00 per acre in year 2 to control unwanted understory brush. That value should be entered in the Expense column for year 2 on the Herbicide Treatment tab (Figure 13). If you planned herbicide treatments in more than one year, then you would simply enter

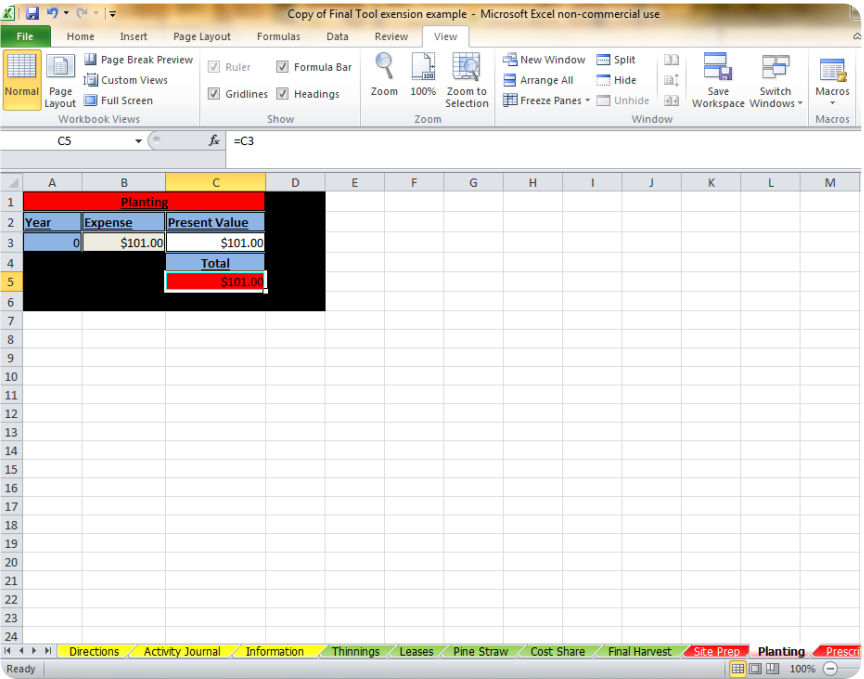


Figure 12. Example of planting expenses per acre in year 0 and resulting Present Value per acre as entered into Planting tab in the FIFA tool

those per-acre costs into the corresponding cells for the year in which they would occur. For expenses that occur at more than one time during a rotation, such as management costs or taxes, enter those each time that they occur. For example, you expect to pay taxes of approximately \$3.25 per acre each year. You also expect to have management-related expenses such as fence and gate repair or boundary-line marking about almost every year, so you estimate an annual cost of \$17.00 per acre to cover those expenses. These costs should then be entered each year through the end of the rotation as shown in Figure 14.

EXAMINING THE RESULTS

Based on this example, take a look at the Financial Total tab (Figure 15). How does it look? The NPV for this scenario is a *positive* \$6.68 per acre. You will recall that a positive NPV means that the investment is worthwhile and will offer a higher return than the alternative rate, which, in this case, was 4 percent. Similarly, B/C for this scenario is 1.01, which is just slightly more than 1. Remember that as an estimate of a project's return per dollar of

Herbicide Treatment		
Year	Expense	Present Value
1	\$0.00	\$0.00
2	\$41.00	\$37.91
3	\$0.00	\$0.00
4	\$0.00	\$0.00
5	\$0.00	\$0.00
6	\$0.00	\$0.00
7	\$0.00	\$0.00
8	\$0.00	\$0.00
9	\$0.00	\$0.00
10	\$0.00	\$0.00
11	\$0.00	\$0.00
12	\$0.00	\$0.00
13	\$0.00	\$0.00
14	\$0.00	\$0.00
15	\$0.00	\$0.00
16	\$0.00	\$0.00
17	\$0.00	\$0.00
18	\$0.00	\$0.00
19	\$0.00	\$0.00
20	\$0.00	\$0.00
21	\$0.00	\$0.00
22	\$0.00	\$0.00

Figure 13. Example of herbicide expenses per acre in year 2 and resulting Present Value per acre as entered into Herbicide Treatment tab in the FIFA tool

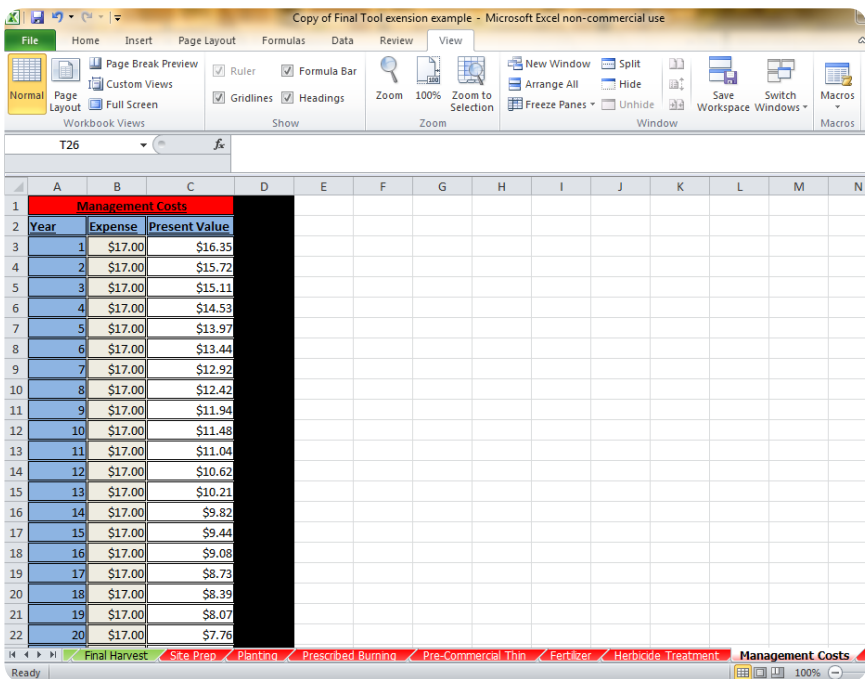


Figure 14. Example of recurring management expenses per acre in years 1 through 30 and resulting Present Value per acre as entered into Management Costs tab in the FIFATool

investment, this ratio should always be greater than or equal to 1 to be realistic. A B/C of greater than 1 means that the present value of the revenues is equal to or greater than the present value of the costs. So while this investment is considered to be acceptable, could it be better? Recently, timber prices have been lower, and costs of forest-management practices have increased. Because of this, many landowners feel that actively managing their forestland is just not worth the time and effort—but doing *nothing* is not a viable option if you want to responsibly manage your woodlot!

In reality, the example depicted here is not an unusual one for many forest landowners. As a result, more landowners are looking to

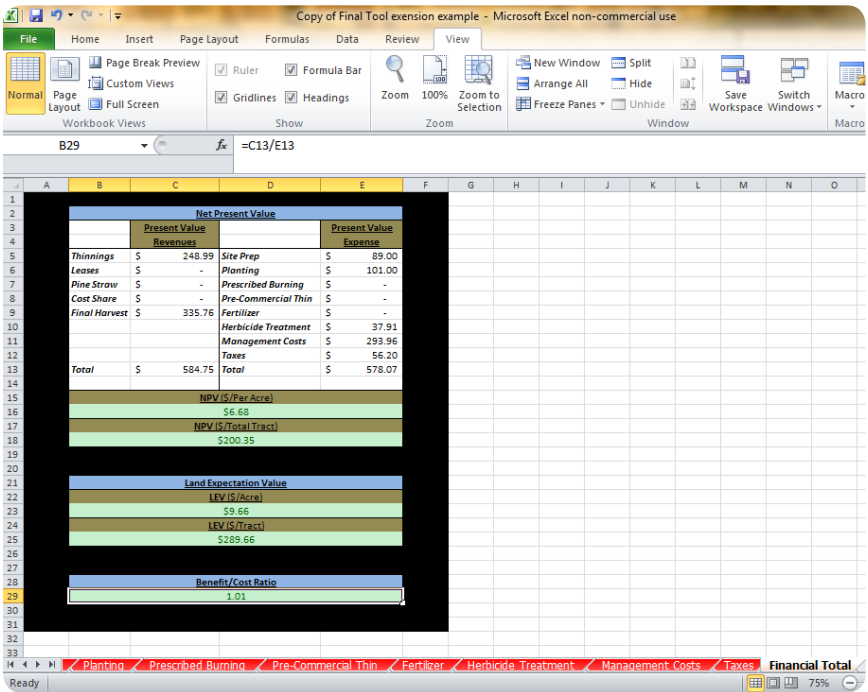


Figure 15. Example of results of management scenario illustrating a positive Present Value as shown on the Financial Total tab in the FIFA tool.

alternative sources of income from their woodland to supplement income and help pay for forest-improvement practices. They realize that active forest management is important. It can improve not only the forest resource but also wildlife habitat and recreational enjoyment on their lands. Some alternative sources of income many are beginning to consider include pine straw raking or permitting their property for other activities such as hunting or grazing. Using the example above, let's take a look at what additional revenue might be generated if we include pine-straw raking and hunting permits into our plan.

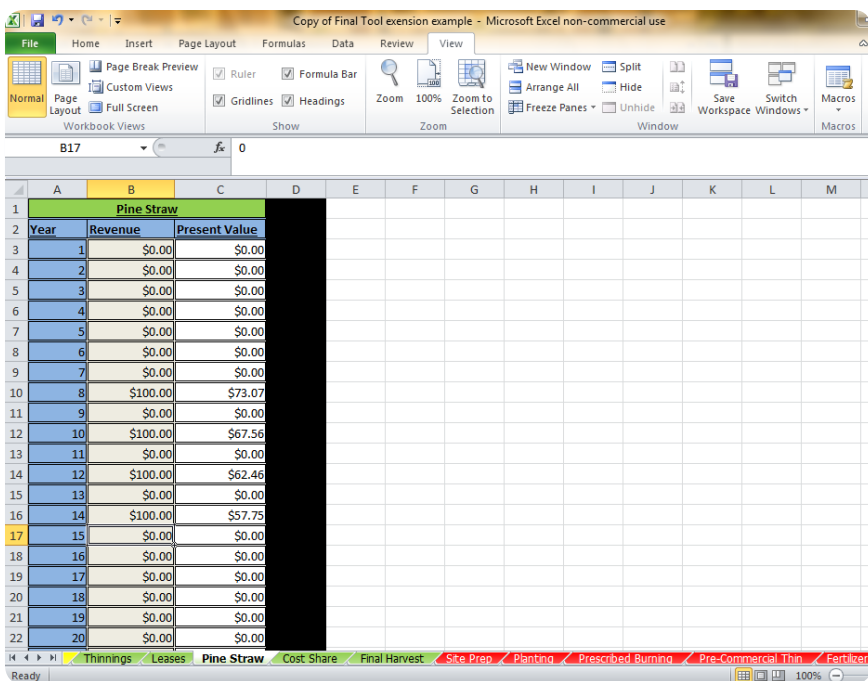


Figure 16. Example of pine-straw revenue per acre in years 8, 10, 12, and 14 and resulting Present Value per acre as shown on the Pine Straw tab in the FIFA tool

EXPLORING ADDITIONAL OPPORTUNITIES

Assume that you can reasonably expect to rake pine straw from your forest every other year between year 8 and year 15 when the first thinning occurs. If you can harvest 100 bales per acre and receive \$1.00 per bale, that would amount to \$100.00 per acre of additional revenue in years 8, 10, 12, and 14 (Figure 16). By adding this to your plan, you can increase per-acre NPV to approximately \$267.00 per acre and increase the total tract NVP to just over \$8,000.00 (Figure 17). The B/C ratio also increases to 1.46. While this may not be

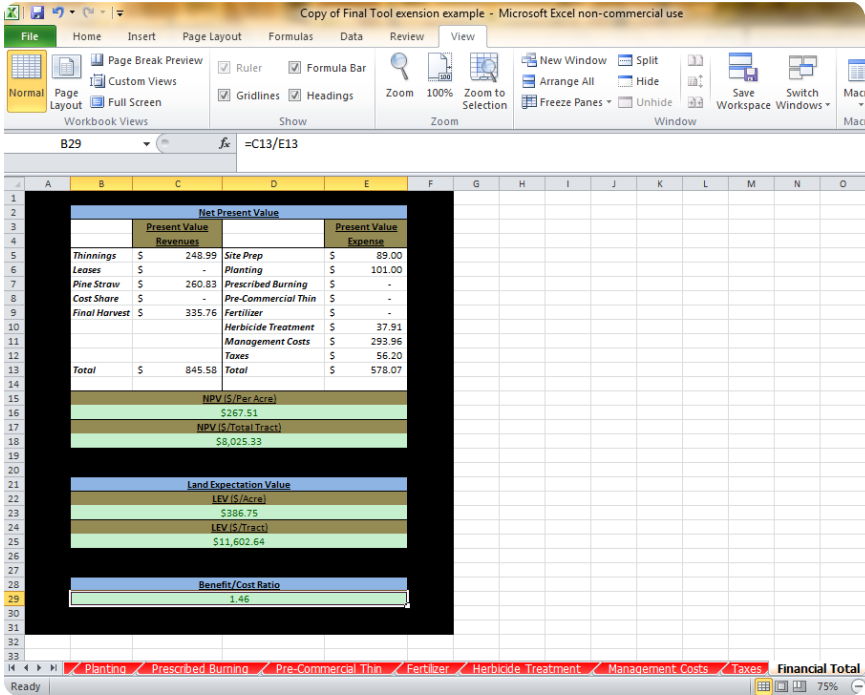


Figure 17. Example of results of management scenario including pine-straw raking as shown on the Financial Total tab in the FIFA tool

an option for every forest owner, there may be areas in your forest where pine-straw raking would be appropriate. For more information on pine-straw harvesting, see Alabama Cooperative Extension System publication ANR-1418, *Harvesting Pine Straw for Profit: Questions Landowners Should Ask Themselves* (<http://www.aces.edu/pubs/docs/A/ANR-1418/ANR-1418.pdf>).

Another popular activity many landowners are considering is permitting their lands for hunting. This means they allow an individual or an organized group to hunt on their property for a fee by issuing them a permit to use the property for hunting. Depending on the region of the state, this can bring between \$5.00 and \$10.00

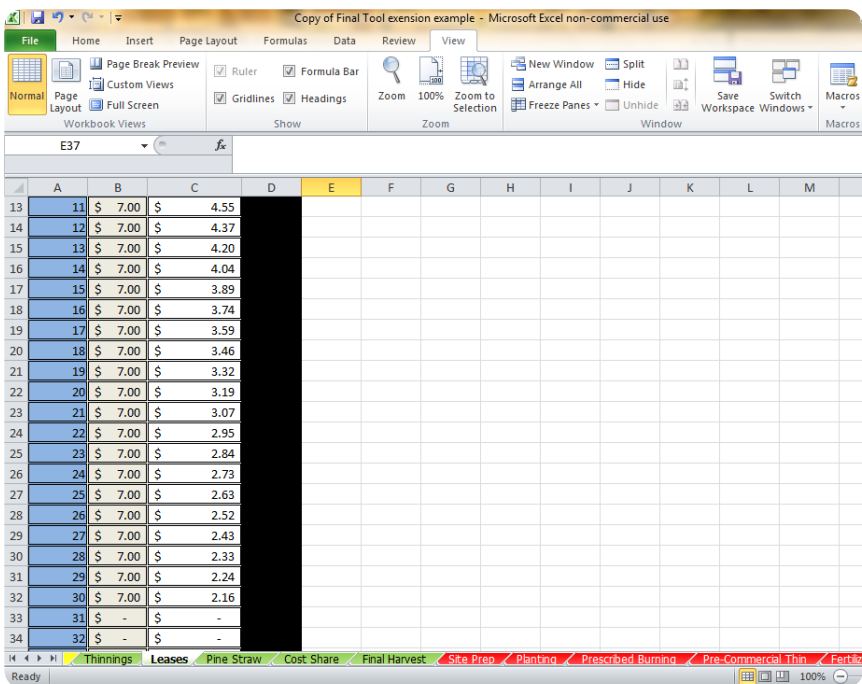


Figure 18. Example of hunting-permit revenue in years 1 through 30 and resulting Present Value per acre as shown on the Leases tab in the FIFA tool

per acre per year of additional income. It is important to work with an individual or group of hunters that you trust as well as with an experienced lawyer who will draw up and execute the proper permit documents.

For this example, we will assume that you can get \$7.00 per acre per year to permit your land for hunting. You would enter \$7.00 in the revenue column for years 1 through 30 on the Leases tab (Figure 18). This will give you an additional \$121.00 per acre NPV for a total NPV of approximately \$388.00 per acre, or a total of \$11,656.00 for the 30 acres (Figure 19). The B/C ratio is now increased to 1.67.

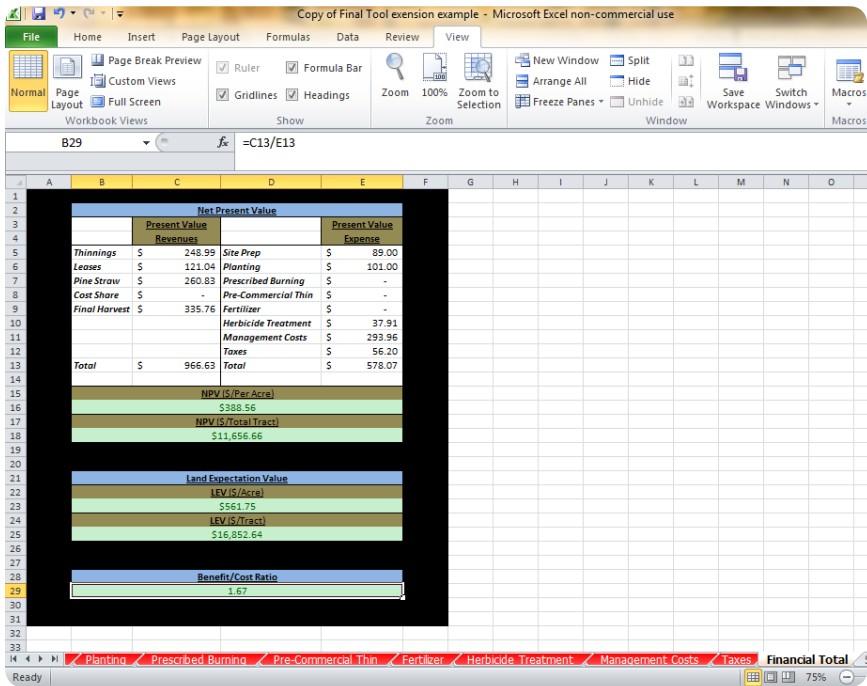


Figure 19. Example of results of management scenario including pine-straw raking and hunting-permit revenue as shown on the Financial Total tab in the FIFA tool

SUMMARY

Understanding the implications of forestry-management activities can be daunting, but by anticipating the financial benefits and costs of forestry activities, you as a landowner can make more informed land-management choices. For example, you may think that the cost of herbicide is more than you want to spend. But wise use of herbicides can improve crop-tree growth, remove unwanted understory vegetation, improve wildlife habitat, and make your forestland better suited for pine-straw production and raking. By trying different scenarios using the FIFA tool, you can estimate the profit potential for various land-management regimes before they are implemented.

This guide was developed to help you have a better understanding of forestry investments and how to use the FIFA tool to analyze them. This tool was not developed to replace the advice of a professional land manager. It is important to always have a qualified professional evaluate your property to determine proper management techniques and conduct financial analyses. However, this tool can be used along with growth and yield models to estimate the profitability of forestland and provide preliminary financial analysis information to assess the profit potential of a forest-management plan. Becoming familiar with the financial aspects of forest management will allow you as a landowner to make more informed management decisions before you spend valuable resources to implement management activities in your forest.



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