



Sustainable Forestry and African American Land Retention Program – Measuring Success

U.S. Endowment for Forestry and Communities



FOREST2MARKET

Global Wood & Fiber Supply Chain Experts



Sustainable Forestry and African American Land Retention Program – Measuring Success

PREPARED FOR:

U.S. Endowment for Forestry and Communities

Alicia Cramer
Senior Vice President
908 East North Street
Greenville, SC 29601
alicia@usendowment.org

PROVIDED BY:

Forest2Market, Inc.
15720 Brixham Hill Avenue,
Suite 550
Charlotte, NC 28277

Jay Engle
Senior Advisor
980-233-4029
Jay.Engle@forest2market.com

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1 EXECUTIVE SUMMARY

1.1 Purpose and Process

The Sustainable Forestry and African American Land Retention Program (SFLR) was initiated in 2012 with the intent of providing assistance to African American landowners to enable them to create sustainable intergenerational forest ownerships. The U.S. Endowment for Forestry and Communities, one of the Program’s founders, requested the assistance of Forest2Market in better understanding the benefits arising from the SFLR Program. The USDA Natural Resources Conservation Service (NRCS), another Program founder, provided funding for this work. The purpose of this report is to identify, describe and, where possible, quantify the various benefits derived by participation in the Program.

This report divides program benefits into the five following categories:

1. Value of unencumbered property title
2. Access to agricultural cost-share programs related to forestry
3. Improved forest stand management
4. Access to professional forestry services and wider forest product markets
5. Trust, guidance and education

Values for the first four categories were developed based on publicly available information, Forest2Market’s unique stumpage database and by employing several example forest management scenarios. Two pine plantation comparisons—one for a lower productivity site (loblolly site index 60), and one for a higher productivity site (loblolly site index 75), each having an intensive and less intensive management scenario—were used. Three comparison scenarios on a single site quality (red oak site index 65) were used for natural hardwood management, providing for two comparisons.

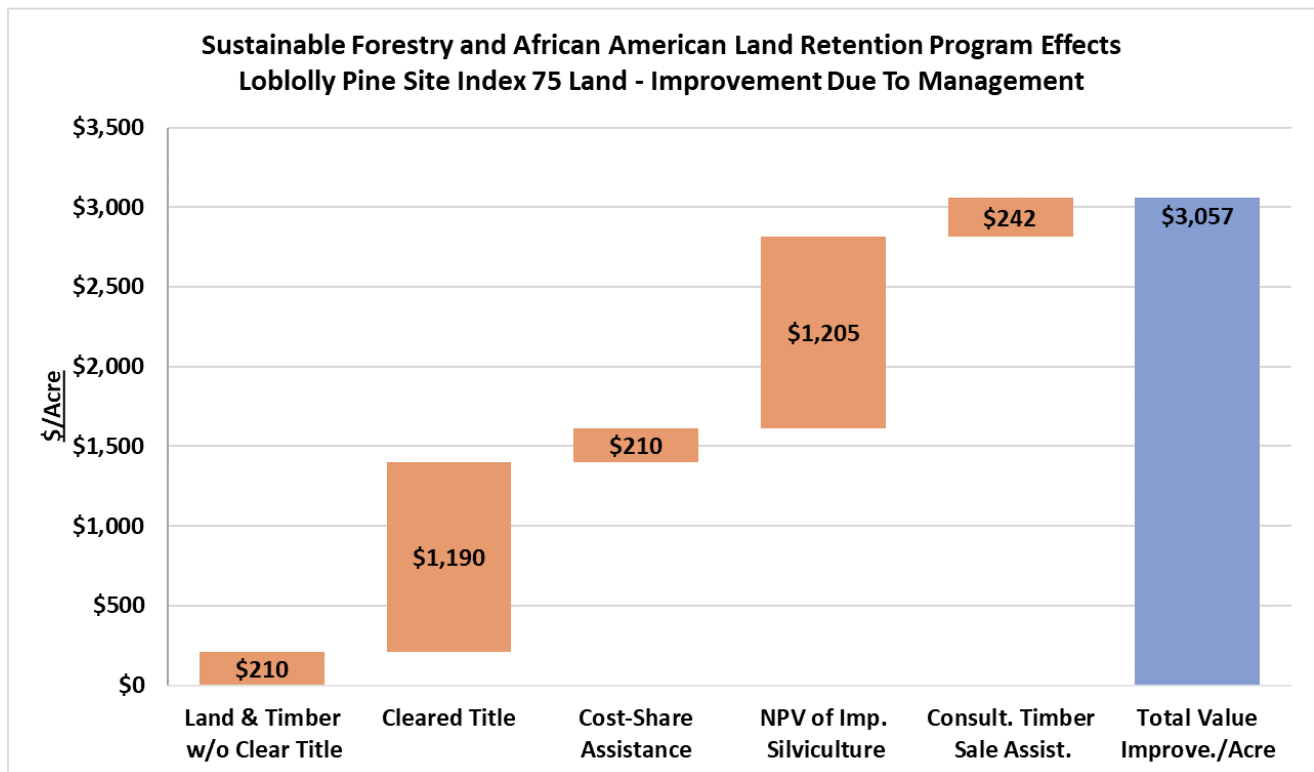
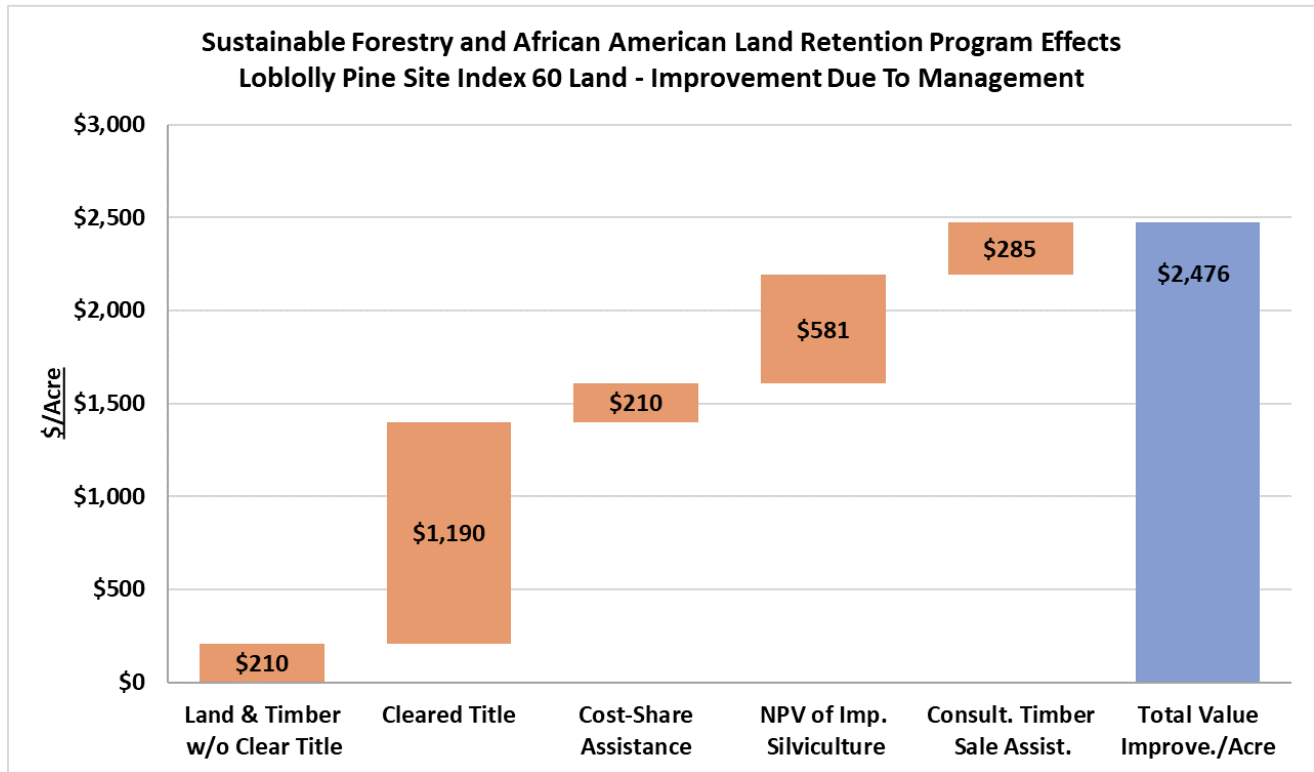
1.2 Key Findings

The following table shows the potential value improvements from SFLR program efforts for pine plantation forestland.

| Value Categories | SFLR Program Value Improvements - Pine Plantation Forestland | | | | | |
|--|--|-----------------|------------------|-----------------|-----------------|------------------|
| | Site Index 60 | | | Site Index 75 | | |
| | Per Acre Values | 25 Acre Example | 100 Acre Example | Per Acre Values | 25 Acre Example | 100 Acre Example |
| Land & Timber w/o Clear Title | \$210 | \$5,250 | \$21,000 | \$210 | \$5,250 | \$21,000 |
| Cleared Title | \$1,190 | \$29,750 | \$119,000 | \$1,190 | \$29,750 | \$119,000 |
| Cost-Share Assistance | \$210 | \$5,250 | \$21,000 | \$210 | \$5,250 | \$21,000 |
| NPV of Imp. Silviculture | \$581 | \$14,525 | \$58,100 | \$1,205 | \$30,125 | \$120,500 |
| Consult. Timber Sale Assist. | \$285 | \$7,125 | \$28,500 | \$242 | \$6,050 | \$24,200 |
| Example Property Effects Totals | \$2,476 | \$61,900 | \$247,600 | \$3,057 | \$76,425 | \$305,700 |



Using the value of land and timber without clear title as the base indicates that on lower productivity land, the improvement is about \$2,250 per acre and on 25- and 100-acre properties would create a total value increase of \$56,650 and \$226,600, respectively. On the higher productivity site, the per acre increase is about \$2,850, which indicates a \$71,175 and \$284,700 total value improvement for the 25- and 100-acre properties, respectively. These same results are depicted in the following two waterfall charts.

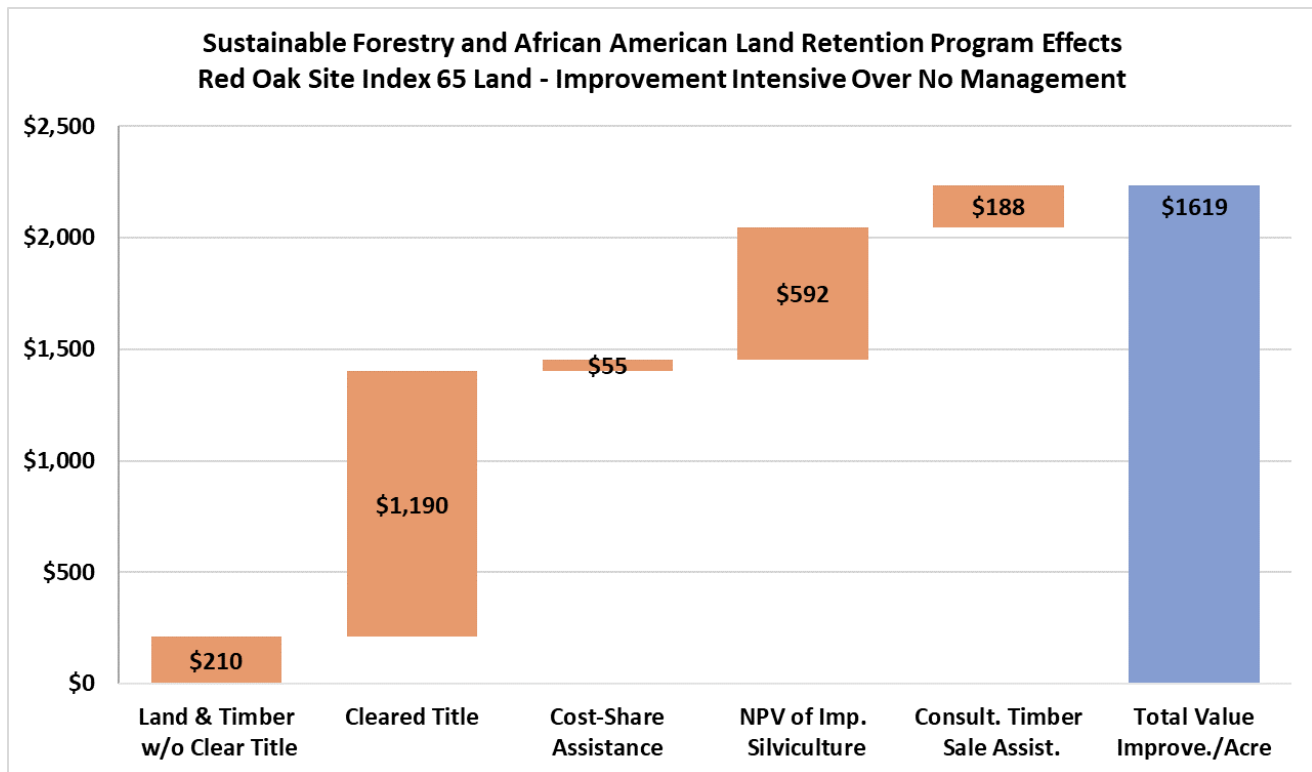


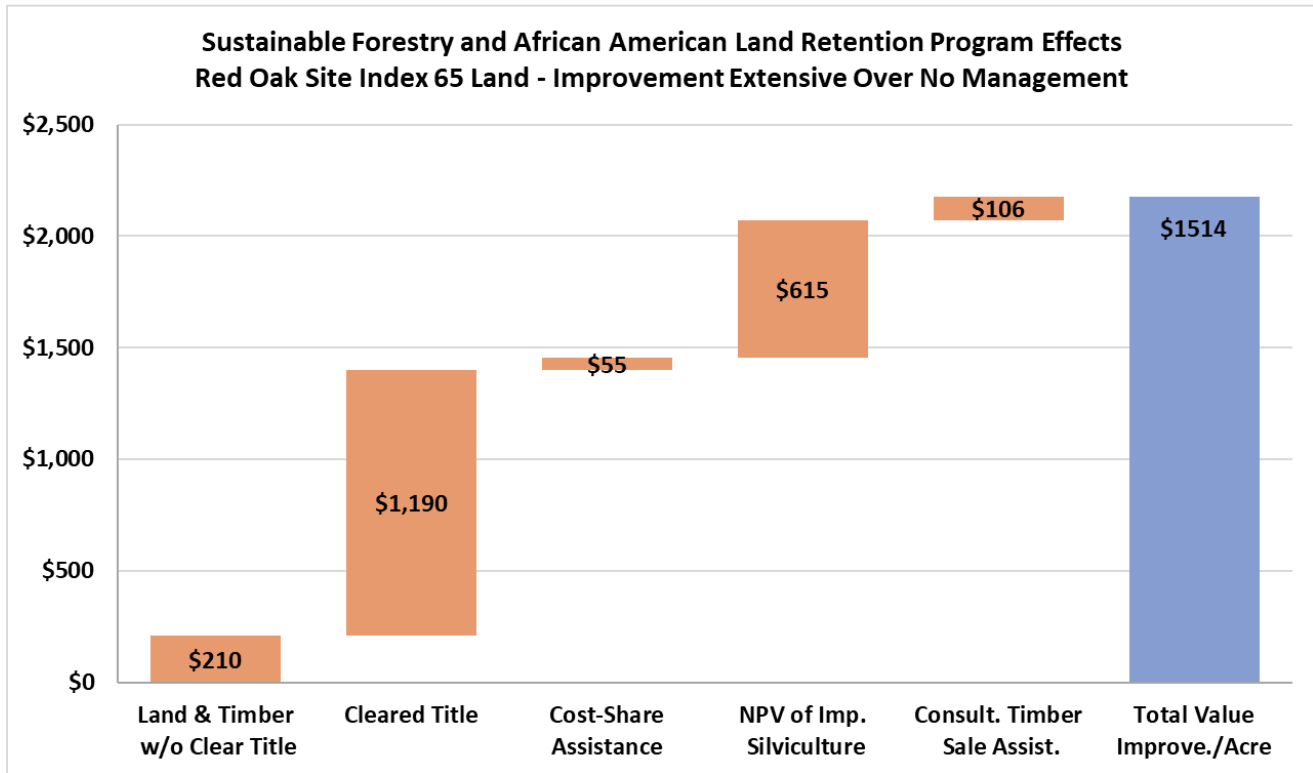


The table below shows the potential value improvements from the SFLR program based on the natural hardwood forestland scenarios presented in this report.

| Value Categories | SFLR Program Value Improvements - Natural Hardwood Forestland | | | | | |
|--|---|-----------------|------------------|------------------------------|-----------------|------------------|
| | Intensive Over No Management | | | Extensive Over No Management | | |
| | Per Acre Values | 25 Acre Example | 100 Acre Example | Per Acre Values | 25 Acre Example | 100 Acre Example |
| Land & Timber w/o Clear Title | \$210 | \$5,250 | \$21,000 | \$210 | \$5,250 | \$21,000 |
| Cleared Title | \$1,190 | \$29,750 | \$119,000 | \$1,190 | \$29,750 | \$119,000 |
| Cost-Share Assistance | \$55 | \$1,375 | \$5,500 | \$55 | \$1,375 | \$5,500 |
| NPV of Imp. Silviculture | \$592 | \$14,800 | \$59,200 | \$615 | \$15,375 | \$61,500 |
| Consult. Timber Sale Assist. | \$188 | \$4,700 | \$18,800 | \$106 | \$2,650 | \$10,600 |
| Example Property Effects Totals | \$2,235 | \$55,875 | \$223,500 | \$2,176 | \$54,400 | \$217,600 |

Again, the value of land and timber without clear title is considered the base for the comparisons. The more intensive management regime indicates an advantage of about \$2,025 per acre, which for 25- and 100-acre properties would create a total value increase of \$50,625 and \$202,500, respectively. Comparing the extensive management to the base increases the per acre value \$1,966, which yields a \$49,250 and \$196,600 total value improvement for the 25- and 100-acre properties, respectively. These results are also shown in the following two waterfall charts.





In general, the results indicate that where pine plantation management is applicable, the SFLR program has the potential to improve property value between \$2,000 and \$3,000 per acre. For a typical 25-acre property, that results in a total property value increase of between \$55,000 and \$70,000.

For natural hardwood forestland the potential per acre value improvement from the SFLR program being around \$2,000. This improvement has the potential of increasing a typical 25-acre property by around \$50,000.

In both the pine plantation and natural hardwood cases, clearing title is the largest and most influential factor in creating increased value. Without clear title, land value is greatly reduced limiting financial leverage, access to cost-sharing programs is unavailable or restricted and the sale of forest products is more difficult, if even possible, and at reduced prices.

Although trust, guidance and education are extremely important in helping to accomplish the objectives of the SFLR program, they are difficult to quantitatively value. However, without the attention given to these factors by the program's community-based organizations, value improvement would be greatly diminished.



2 INTRODUCTION

2.1 Program Background

Recognition that African American land ownership had drastically declined since the early 1900s was the impetus of the Sustainable Forestry and African American Land Retention Program. In 1910, approximately 17 million acres of farmlands were owned by African Americans; by 1997, the acreage had declined to around 2.4 million acres.

The SFLR Program was initiated in 2012 by the U.S. Endowment for Forestry and Communities (U.S. Endowment) in partnership with the USDA Forest Service (FS) and the USDA Natural Resources Conservation Service (NRCS). The intent of the program is to provide assistance to African American landowners to enable them to create sustainable intergenerational forest ownerships. This assistance is provided through trusted local community-based organizations (CBOs). There are currently seven CBOs participating in the program (see Appendix) in seven southeastern states (AL, AR, GA, MS, NC, SC & VA). Assistance comes in many forms including legal, technical forestry guidance, government grant guidance and product marketing expertise.

2.2 Report Purpose

The U.S. Endowment, with funding from the NRCS, requested the assistance of Forest2Market to better understand the impacts and benefits arising from the SFLR Program. The purpose of this report is to identify, describe and, where possible, quantify the various benefits derived by direct participation in the program.

3 PROGRAM BENEFITS

For the purposes of this report, program benefits are divided into the following five categories:

1. Value of unencumbered property title
2. Access to agricultural cost-share programs related to forestry
3. Improved forest stand management
4. Access to professional forestry services and wider forest product markets
5. Trust, guidance and education

While these are the broad categories, they are each made up of several finer branches. In examining and discussing the program it became apparent that, just like the trees in a forest, many of these branches are intertwined forming a web. This makes the separation of the benefits and values difficult and even arbitrary in places. Assigning a value on a category is further complicated by the unique circumstances and characteristics of each property. Due to this complexity, this report attempts to place the quantified benefits on a per-acre basis so that they can then be extrapolated and used for individual situations.

3.1 Value of Unencumbered Property Title

One of the principal reasons the SLRF program was created is to address issues that arise from what has become termed “Heirs’ Property.” Heirs’ property is the result of property being passed from one generation to another by intestate succession due to the lack of having a legal will. If there is more than one heir, they each have part ownership interests



and the property is then generally held under tenancy in common. Each state has laws governing tenancy-in-common property and this report will not attempt to discuss all the differences. Suffice it to say that this form of ownership is the most unstable form of land ownership in the U.S. One primary ramification of this ownership structure that is most challenging is that no single individual is responsible for care of the property, so obligations such as taxes are often in default and disagreements about property management can arise. These conditions have often created conditions where the property was either subdivided or forced to be sold. At the very least, this structure is not conducive to sound property management.

A simple example can serve to demonstrate how complex these situations can become:

- Imagine two similar properties passed to the owners' heirs without the explicit instruction of a will. Both properties have no outstanding debts, and each have two heirs. The tenants-in-common for the first property are in agreement and resolve to establish legal title to the property, which costs roughly \$2,000. The second property owners are not in agreement, so the property stays in tenancy-in-common. Both of these heirs pass away without establishing wills and since each of them have spouses and three children, for instance, there are now eight tenants in common. Since there are now also 18 grandchildren involved, it is easy to see how the number of tenants can rapidly escalate. In addition, the second property also accumulated significant tax debt. Even if everyone agrees and wants to establish legal title, the process might cost upwards of \$50,000 in legal fees.

The example above illustrates how easily two properties with similar starting circumstances can develop into two significantly different situations with drastically different resolution costs. Now, also imagine that the first property was 10 acres and the second was 100 acres. The legal fees to establish clear title are not solely driven by property size. In the example above, legal title costs would be \$200 and \$500 per acre. While these are steep charges, they might be worthwhile from the heir's point of view. If the acreages above were reversed, however, the legal title costs would be \$20 and \$5,000 per acre. Based on these costs, the first property will probably remain with the heirs while the second property will likely be liquidated due to the high costs associated with establishing clear title.

This example is presented to demonstrate the difficulty in assigning a value for establishing legal title due to the uniqueness of each property. In an attempt to quantify the benefit of establishing clear title to a property, we looked to the published values of forestland from the National Council of Real Estate Investment Fiduciaries (NCREIF). For the southern U.S. region, average timberland value was around \$1,800 per acre in 2018. Information from the National Agricultural Statistics Service was also examined and indicated that bare-land value of agricultural land in the southern U.S. averaged about \$3,400 per acre in 2017. Studies have shown that values for timberland are 27% of agricultural land indicating a bare-land value for timberland of about \$900 per acre. Considering the \$1,800 per acre timberland value along with the \$900 bare-land value indicates a timber value of around \$900 per acre. Since many of the Heirs' properties are not under sound management, a timber value of \$500 per acre was assumed in this analysis, yielding a value of \$1,400 per acre for unencumbered timberland.

The next question, then, is how much would the encumbered Heirs' property be worth? While there is not a lot of published information available on the subject, there was a 2011 opinion rendered in the Minnesota Court of Appeals that indicated the value of property with unmarketable title declines between 75% and 90%. This decision was discussed with two law firms, one in NC and the other in MS, and they confirmed these discounts to be valid if not conservative. The rationale is that for a buyer to accept the unmarketable title in a sale, they need to be willing to estimate that they will be able to establish clear title within the bounds of the discounted amount. This report assumes an average property



discount of 85%, reducing the unencumbered property value from \$1,400 to \$210 per acre with an improvement value due to clearing title of \$1,190 per acre.

In addition to increasing the property value and ability to sell the land, establishing clear title is a key element for improving the management of Heirs' property. Once established, it clears the way for securing loans to invest in the property and it has been a necessary requirement for participation in agricultural cost-share programs, which is the subject of the subsequent section.

3.2 Access to Agricultural Cost-Share Programs Related to Forestry

Over the last several decades, there have been many governmental programs geared towards aiding general agriculture and forestry. These have originated at both the federal and state levels, however, the federal programs are better funded and the state programs generally tap into or are associated with the federal programs. Some of the better-known programs are offered through the Natural Resources Conservation Service (NRCS), including the Conservation Reserve Program (CRP), Conservation Reserve Enhancement Program (CREP), the Wetlands Reserve Program (WRP), the Conservation Stewardship Program (CSP) and the Environmental Quality Incentives Program (EQIP). While these federal programs can have application to forestland, EQIP is the program that offers the best incentives and is most broadly applied by the community-based organizations in the SFLR program. As a result, this report is focused on the beneficial impacts of EQIP.

The impacts of these programs generally fall into two groups: reforestation and stand management. Cost-share for reforestation includes site preparation, seedlings, planting and both herbaceous and brush competition control. Some of the forest management practices that qualify for financial assistance include pre-commercial thinning and forest stand improvement. There are other practices that qualify of funding, but these are the primary methods considered in this report. A management plans is generally required to receive cost-share funds, and the cost of plan preparation can also qualify for payment.

A fairly recent development involves efforts made to create a model statute to address many of the problems related to Heirs' property. The Uniform Partition of Heirs Property Act (UPHPA) has been adopted by a number of states and was referenced in the 2018 federal Farm Bill. The bill makes some of the government programs available to Heirs' property owners in states that have enacted UPHPA and allows the landowners to apply for and be assigned the important farm number that is a requirement for cost-share funding. Although this new development might ease qualifying for cost-sharing, it does not alleviate the previously discussed burdens of encumbered title or unlock the potential of the properties.

Since there is significant forestland variation due to differences in site quality, species and present conditions, several forest scenarios were included to establish the benefits from cost-sharing. While the EQIP program can cover 75% of the practice cost and, for some underserved groups up to 90%, a cost-share rate of 50% was used in the scenarios. Based on the program practices, cost-share value ranged from \$55 to \$210 per acre.

3.3 Improved Forest Stand Management

To quantify the benefits of improved forest management, two low-intensity versus high-intensity comparisons involving four scenarios were created for pine plantations. One comparison was for a lower site quality (loblolly pine base age 25 site index of 60) and the other for a higher site quality (loblolly pine base age 25 site index of 75). For natural hardwood



stands, three scenarios representing unmanaged, low level and higher intensity management regimes were created for the same site land (red oak base age 50 site index of 65). The following table shows some of the loblolly pine scenario background information used to input the scenarios into a propriety growth and yield model.

| Pine Plantation Management Factors | Low/High Management Comparisons | | | |
|------------------------------------|---------------------------------|------------|-------------|------------|
| | Lower Site | | Higher Site | |
| | Scenario 1 | Scenario 2 | Scenario 3 | Scenario 4 |
| Site Index | 60 | 60 | 75 | 75 |
| Planted TPA | 680 | 550 | 680 | 550 |
| 1st Year Survival | 70% | 95% | 70% | 95% |
| % Hardwood BA | 30% | 5% | 30% | 5% |
| Thin Age | - | 17 | - | 15 |
| Final Harvest Age | 30 | 25 | 27 | 23 |
| Total Tons | 130 | 190 | 170 | 261 |
| NPV | \$258 | \$1,124 | \$618 | \$2,065 |

Scenarios 1 and 3 represent a reduced plantation management regime where the sites are planted without much more than the previous harvesting efforts for site preparation and without at-planting fertilization. Seedlings of first-generation genetics were planted and no competition control was applied. No mid-rotation thinning or fertilization was used. Basically, these scenarios represent a “plant and let go” minimal management scheme.

Scenarios 2 and 4 were the higher intensity comparison management regimes. They utilized mechanical/chemical site preparation and phosphorous fertilization at planting. Seedlings were third generation genetics and follow-up chemical competition control was employed. Thinning was used near mid-rotation and followed by nitrogen and phosphorous fertilization the year after thinning.

One of the difficulties of assigning values to the benefits of forest management practices is the relatively long period of time involved and the time value of money effects. These scenarios all used a 1.5% inflation rate for prices and expenses and were brought back to net present value (NPV) using a 6% discount rate. As shown in the table, the effects of better management improved the NPV in both comparisons with the effect being much greater for the higher site quality scenario. Since the higher intensity scenarios assumed professional forestry (consultant) assistance, prices used in those scenarios were adjusted according to the information presented in the following section. Due to this, some of the NPV difference is attributed to professional sales assistance and the rest to silvicultural improvements. For the scenario 1 vs. scenario 2 comparison, \$581 of the \$866 NPV differential is attributed to silvicultural improvements and for the scenario 3 vs. scenario 4 comparison, \$1,205 of the \$1,447 differential is due to silvicultural improvements.

Natural hardwood stands generally are managed less intensively than pine plantations and have fewer options for stand establishment. Hardwoods typically regenerate with many more stems per acre than will be present at harvest age. As a natural process, stands must go through a self-thinning phase or phases to reduce the number of trees as the stand matures. Timber stand improvements, usually in the form of cleanings or thinnings, are the principal methods employed in hardwood stand management. The following table shows some of the background information used for the three scenarios to project stand development under the southern variant of the U.S. Forest Service’s Forest Vegetation Simulator.



| Natural Hardwood Management Factors | Low/High Management Comparisons | | |
|-------------------------------------|---------------------------------|------------|------------|
| | Scenario 1 | Scenario 2 | Scenario 3 |
| Site Index | 70 | 70 | 70 |
| Initial TPA | 5000 | 5000 | 5000 |
| Regeneration Harvest Age | - | 0 | 0 |
| Cleaning Age | - | - | 15 |
| Pre-commercial Thin Age | - | - | 25 |
| Commercial Thin Age | - | - | 45 |
| Final Harvest Age | 75 | 65 | 65 |
| Total Tons | 92 | 150 | 144 |
| NPV | \$50 | \$771 | \$830 |

For the natural hardwood comparisons, all three scenarios begin with an understocked stand that has slightly over 50 merchantable tons of wood per acre with 40 tons classified as hardwood pulpwood. Scenario 1 is basically a “let it grow” regime. The initial stand is not harvested until the end of the period. The only difference in scenario 2 is that the original stand is harvested, and the regeneration is allowed to mature without the effects of the overstory shade and competition. Scenario 3 also starts by harvesting the original stand and then uses a cleaning, a pre-commercial thinning and a stand improvement thinning during the rotation to lower the number of trees per acre, improve the species composition of the residual stand and also increase the average diameter of the final stand.

Again, the more intensive regime produced a higher NPV than the two lower intensity scenarios. However, it is interesting to note that just the professional recognition that the understocked stand could benefit by a regeneration harvest resulted in a positive response that produced slightly more total tons over the same period as the more intensive scenario. Comparing the NPV for the higher and lower intensity regimes shows an improvement of \$780 per acre. Again, part of that improvement is due to professional sales assistance and the rest to silvicultural improvements. In the case of the high to low intensity hardwood scenario, about \$592 per acre is attributable to silvicultural improvements.

3.4 Access to Professional Forestry Services and Wider Forest Product Markets

Professional forestry services can come in a wide variety of methods. Perhaps the most concrete measure of the value of these services is available through Forest2Market’s stumpage price database. Only actual stumpage transactions are included in this database and one of the parameters noted is whether or not a consultant was involved in the sale. In order to reduce the possibility of seasonal or time effects skewing the information, data for the full ten-year period from 2009 through 2018 were used to quantify the effects on stumpage price due to the use of professional forestry consultants. Overall, use of consultants increased stumpage prices by around 10%. The following table shows the improvement in volume weighted average stumpage prices through the use of consultants by timber stand acreage class. This information only included sales from private lands and did not include sales classified as salvage, real estate cuts or diameter limit harvests. As shown, consultants were most successful on sales under 50 acres in size, which is where Heirs’ properties are most commonly classified.



| Acreage Classes | Consultant Used | | Inc./Dec. |
|--------------------|-----------------|---------|-----------|
| | No | Yes | % |
| < 25 | \$15.21 | \$17.88 | 18% |
| 26 to 50 | \$17.45 | \$19.86 | 14% |
| Over 50 | \$18.56 | \$19.91 | 7% |

The following table lists the average volume weighted prices for individual products over the ten-year period from 2009 to 2018 on sales that were under 50 acres in size. These prices were used in the scenarios discussed in the previous section based on whether or not professional forestry services were indicated.

| Products | Consultant Used | | Inc./Dec. |
|--------------------|-----------------|---------|-----------|
| | No | Yes | % |
| Hardwood Pulpwood | \$7.58 | \$7.94 | 5% |
| Hardwood Sawtimber | \$32.20 | \$32.01 | -1% |
| Pine Chip n Saw | \$18.06 | \$18.80 | 4% |
| Pine Pulpwood | \$10.28 | \$10.66 | 4% |
| Pine Sawtimber | \$28.05 | \$28.95 | 3% |

Based on the information from the scenarios, NPV increased where professional forestry consultants were used by \$285 per acre for the better site index pine plantation and \$242 on the lower site plantation. For the hardwood scenarios, NPV was improved by \$188 per acre for the higher intensity management and \$106 for the lower management regime.

While improved timber price is an important factor resulting from the use of professional forestry services, it is not the only benefit. Other benefits include professional management expertise in forming plans, coordination and monitoring management activities, associations with other nearby landowners that can be used to leverage better prices for products or management services, as well as knowledge about, and relationships with, loggers and timber product markets. Some of these are incorporated in pricing results and others are imbedded in silvicultural and property management and are difficult to differentiate and quantify.

3.5 Trust, Guidance and Education

This category of benefits is difficult to assign a monetary value to. Like the other categories, there is overlap in the way the criteria impact each other. The community-based organizations that administer the SFLR program (see appendix) do not all function in the same manner. Some house everything under one roof while others house some of the necessary parts but coordinate with other organizations to get the needed services. Regardless of the structure, all must confront the issue of trust. Many property owners are leery of those offering professional assistance, and it is not uncommon and certainly understandable that it may take a significant amount of time to develop a trusting relationship. Exactly how much time and at what cost can vary, but it is necessary to develop trust to accomplish the program goals.



Guidance is also something that takes time to develop but is necessary to accomplish program goals. Assistance in navigating the process of clearing title and being able to negotiate through the steps to get cost-sharing benefits is crucial. Again, the time and cost of guidance is difficult to quantify but without it, not much change takes place.

Education is vitally important. The education surrounding the need for clear title and how good estate planning can be used to keep it clear is essential to preventing reversion into Heirs' property in the future. Education about good alternative forest management can make the difference in keeping property in family ownership or having to sell the property because it becomes more of a financial burden than a self-sustaining asset.

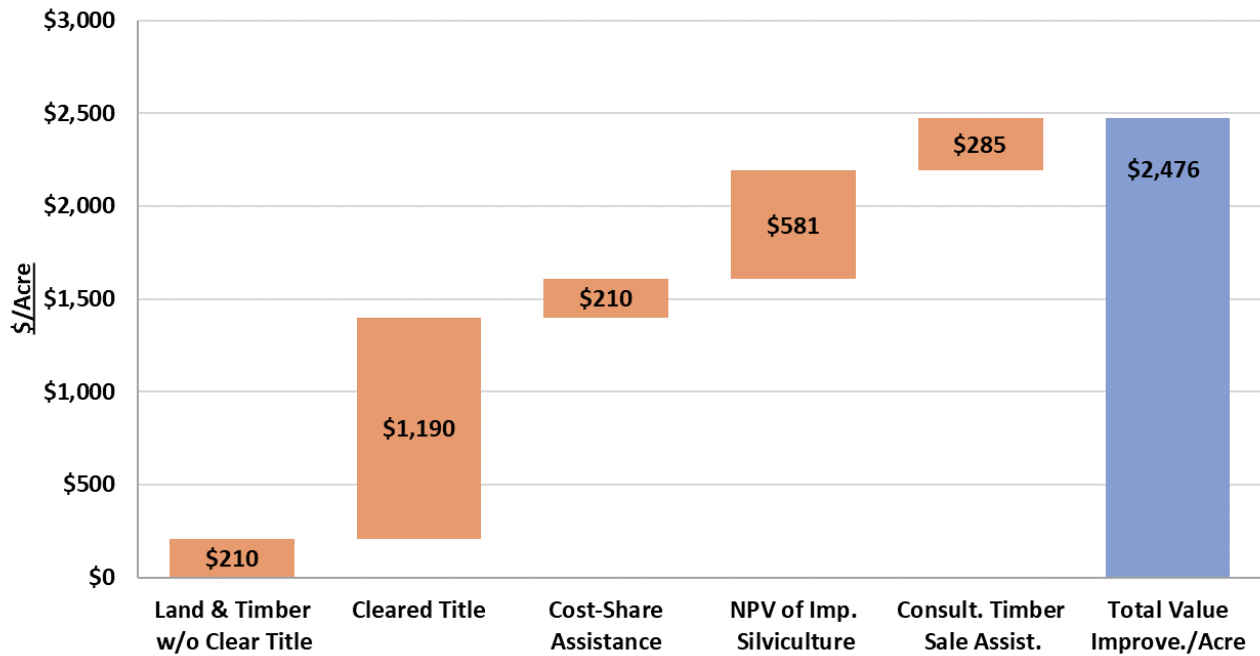
4 SUMMARY

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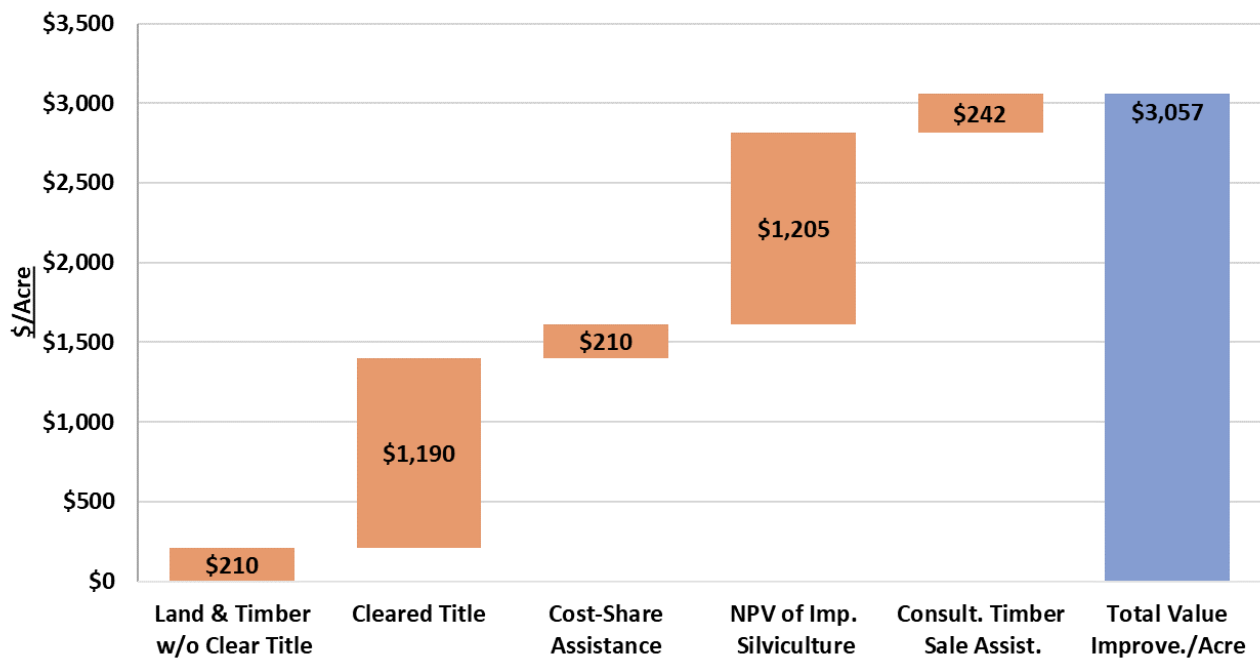
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Sustainable Forestry and African American Land Retention Program Effects Loblolly Pine Site Index 60 Land - Improvement Due To Management



Sustainable Forestry and African American Land Retention Program Effects Loblolly Pine Site Index 75 Land - Improvement Due To Management

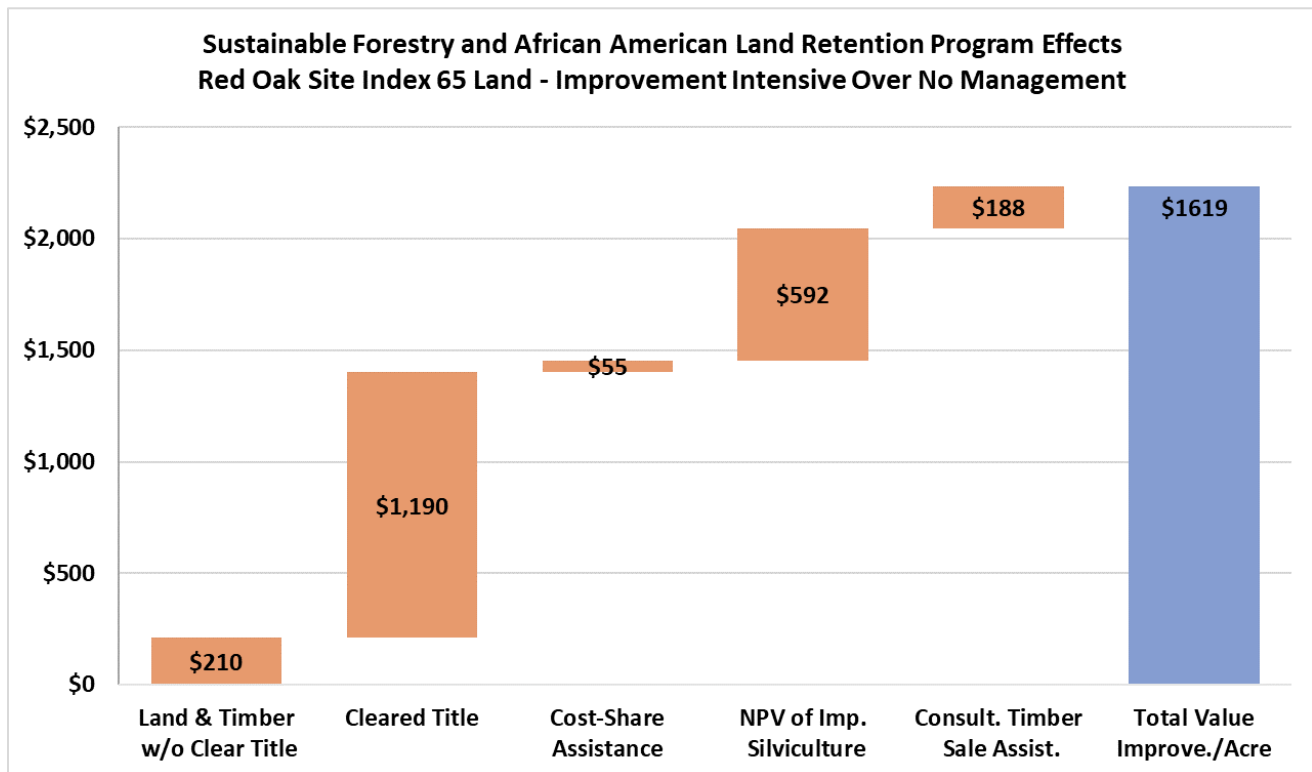


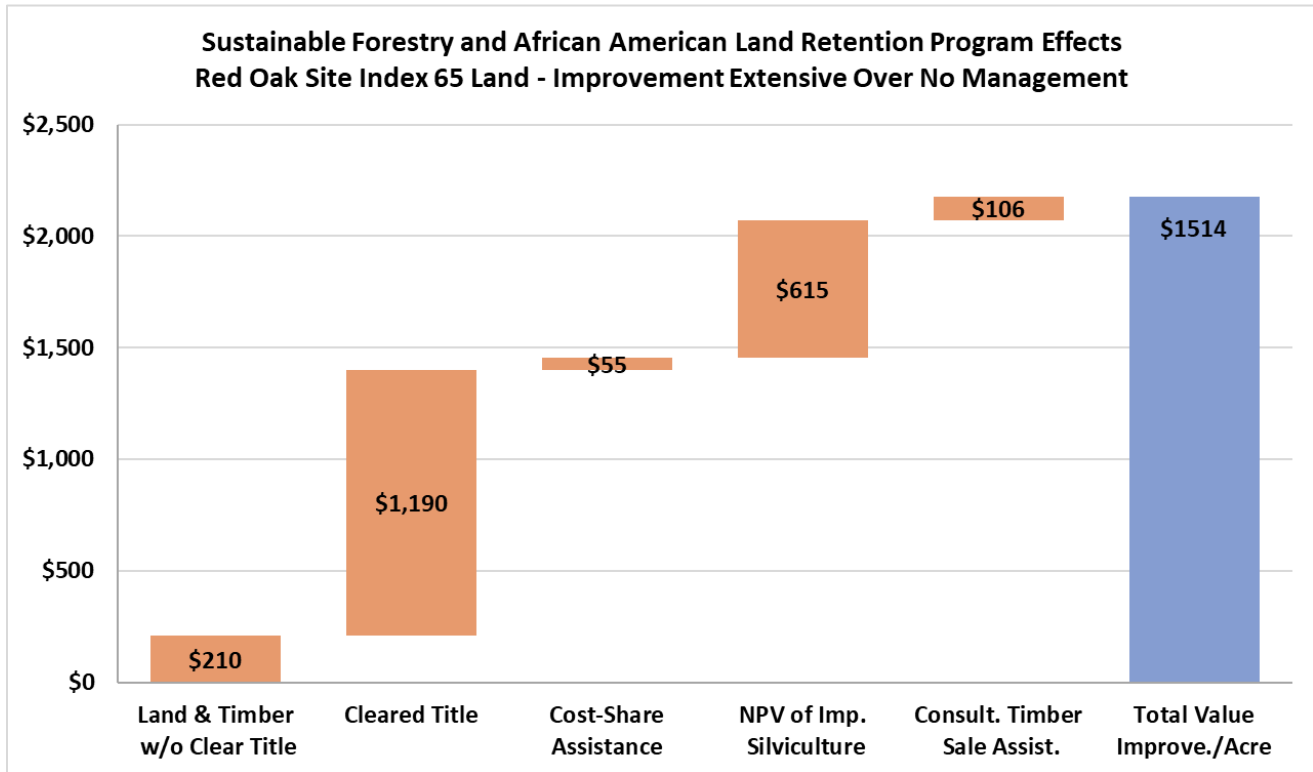
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| Example Property Effects Totals | \$2,235 | \$55,875 | \$223,500 | \$2,176 | \$54,400 | \$217,600 |





5 CONCLUSION

In general, the results indicate that where pine plantation management is applicable, the SFLR program has the potential to improve property value between \$2,000 and \$3,000 per acre. For a typical 25-acre property, that equates to a total property value increase of between \$55,000 and \$70,000.

For natural hardwood forestland, the potential per-acre value improvement from the SFLR program is around \$2,000. This improvement has the potential of increasing a typical 25-acre property by around \$50,000.

In both the pine plantation and natural hardwood cases, clearing title is the largest key factor in creating increased value. Without clear title, land value is greatly reduced limiting financial leverage, access to cost-sharing programs is unavailable or restricted and the sale of forest products is more difficult, if even possible, and at reduced prices.

Although trust, guidance and education are extremely important towards accomplishing the objectives of the SFLR program, they are difficult to quantitatively value. However, without the attention given to these factors by the program's community-based organizations, value improvement would be greatly diminished.



APPENDIX - COMMUNITY-BASED ORGANIZATIONS

- Black Family Land Trust (VA)
- Center for Heirs' Property Preservation (SC)
- Limited Resources Landowner Education Assistance Network (AL)
- McIntosh Sustainable Environment and Economic Development (GA)
- Roanoke Electric Cooperative (NC)
- University of Arkansas at Pine Bluff (AR)
- Winston County Self Help Cooperative (MS)