

State of North Carolina
Department of Environment and Natural Resources



Division of Forest Resources

Continuation Review Legislative Report on the
Forest Development Program

3-1-2009 Final Report

Table of Contents

<u>Executive Summary</u>	3
<u>Current Environment, Programs, Services and Resources</u>	6
Program Description and Objectives	9
Statutory Link	15
Service Statements	16
Resource Allocation.....	18
<u>Program Performance</u>	23
Performance Measures and Data.....	23
Have Objectives Been Achieved?.....	31
<u>Link between Funding and Societal Impact</u>	32
Effect of an FDP discontinuation on NC state personal income tax revenue	32
Loss of Private Business Revenue as a Result of a FDP Discontinuation	33
<u>Program Justification</u>	34
Rationale for Recommended Funding Level	34
Consequences of Discontinued Funding.....	35
Random survey of FDP landowners from 2000-08	38
Landowner Testimonials on the Importance of FDP Funding.....	39
<u>Recommendations to Improve Efficiency and Effectiveness</u>	40
Improving Services	40
Reducing Costs and Duplication.....	42
Recommended Statutory/Budgetary/Administrative Changes	43
<u>External Factors</u>	44
Policy Issues for the General Assembly	44
Other Relevant Information	45
<u>Bibliography</u>	49
<u>Appendix</u>	50

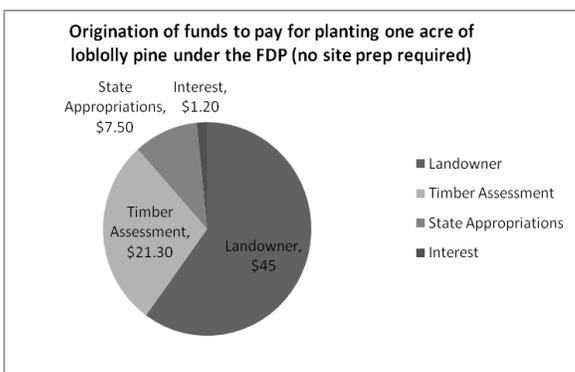
Executive Summary

The 1977 North Carolina General Assembly passed the Forest Development Act (NCGS 113A-176) which established a voluntary cost sharing program to “provide financial assistance to eligible landowners to increase the productivity of the privately-owned forests of the State.” The Primary Forest Product Assessment Act (NCGS 113-189) of 1977 created an assessment on primary forest products processed by North Carolina sawmills and other timber industries. This assessment (typically \$2,000,000/year) along with Legislative appropriations (often \$589,500/year), provides funding for reforestation and forest improvement work cost shared under the Forest Development Program. This partnership to improve reforestation rates and provide for a long term supply of timber is a shared goal and responsibility between the State and forest industry.



The Continuation Review analysis has found evidence that:

- Landowners have planted nearly 1,200,000 acres of forestland under the FDP since 1978. This would cover an area more than twice the size of Wake County, NC. This figure includes 3,057 acres of hardwood/wetland species and 44,601 acres of longleaf pine. A review of North Carolina longleaf planting accomplished under cost share programs from 1997-2006 revealed that 25,000 acres of the 60,000 longleaf pine acres planted were done under the FDP.
- Records of North Carolina’s statewide reforestation accomplishments by small forest landowners between 1999-2008 indicate 75,000 to 100,000 acres are typically planted each year. The FDP has accounted for the planting of 50,000+ of those acres annually. The FDP also maintains a waiting list of fully-qualified but unfunded landowners each year due to a lack of funding. The work on this waiting list averages over \$2,200,000 annually and represents another 25,000+ acres/year that could be reforested. FDP funding should be expanded by \$2,200,000/year to address this need and opportunity.
- The FDP partnership successfully leverages state money with funds from private citizens and timber industry. Landowners usually pay 60% of expenses, and FDP funds typically reimburse the other 40%. Of that 40%, 71% have historically come from assessments paid by timber industry; 25% from appropriations; and 4% from earned interest on the account.
- The FDP is the Division of Forest Resources’ (DFR) “gateway program”. Many forest landowners contact the DFR solely for FDP financial assistance, but ultimately improve their knowledge of water quality protection, wildlife management and other stewardship practices that benefit society.
- The FDP assists forest landowners in carrying out expensive practices such as site preparation prior to tree planting. Landowners don’t always have income from a timber sale to offset expenses if they are planting an agricultural field or carrying out timber stand improvement work. Landowners must often “carry these costs” for 20 years or more before they see financial benefits from their forests. This financial risk is exacerbated by potential timber loss due to wildfire, hurricanes, ice damage, insect and disease, etc.





NCDFR-Greg Pate

- Communication and sharing of information must continue to improve between the DFR and the Department of Revenue. This relates to DFR needing financial information access under GS § 105-259 (b) (“*Secrecy required of officials*”).
 - The FDP cost shares prescribed burning and other activities that effectively manage forest vegetation. Managed forests such as those established under the FDP help reduce the risk of devastating wildfire.
 - FDP accomplishments help realize the goals of other natural resource groups, state agencies and initiatives. This includes watershed protection; climate change mitigation through carbon sequestration; woody biomass for energy production; and wildlife habitat.
- Nearly all FDP funds are used by citizens who own small forests. Between 1999-2008, the average FDP applicant was funded for just 32 acres of work. There are approximately 469,000 “family” forestland owners in North Carolina that own 61% of the State’s forested acreage. Another 23% of the forests are held by other types of private entities numbering over 56,000¹. The FDP successfully reaches over 1,500 of these forest owners each year, resulting in over 50,000+ acres reforested and improved annually. This partnership is critical where 84% of the forest is held in privately-owned parcels that are often less than 50 acres. FDP reforestation provides the raw material that drives the State’s forest-based industry, which is now the number one manufacturing industry in terms of employment and wages².
 - A random survey of 462 landowners who had planted trees with FDP cost share showed that 50% of their acreage would not have been planted if FDP assistance was not available. A discontinuation of the FDP would result in nearly 25,000 fewer acres planted annually. The resulting lost work to businesses specializing in reforestation services is estimated at over \$3,100,000.
 - Discontinuation of the FDP would result in a reduction of forest productivity and timber income. This would reduce personal income tax revenue by approximately \$644,000³. FDP appropriations are currently \$589,500, so the discontinuation of the FDP would mean a net loss of \$54,500 for the State.
 - The Primary Processor Act specifies that timber assessments shall be suspended if the Legislature fails to make appropriations to the FDP. This emphasizes the partnership aspect of this program between the State and forest industry. If the State discontinues appropriations, legislative action will be required for the FDP to continue. If all State funding to the FDP is eliminated and the timber assessment rate is increased, political pressure from several groups could jeopardize the existence of the FDP program.
 - The FDP helps landowners manage their forestland and qualify for a critical present-use value tax break. This financial benefit reduces their personal property tax burden and the pressure to sell the land for development. Discontinuing FDP will make it more difficult to retain our State’s working forests. Over 1,000,000 acres of North Carolina forestland were lost between 1990-2002.

¹ Based on the U.S. Forest Service’s “Family Forest Owners of the U.S., 2006”

² Based on N.C. Employment Security Commission data from 2nd Qtr, 2006

³ Based on a 2009 N.C. Division of Forest Resources economic analysis study



Photo by Chris Evans, River-to-River CWMA, Bugwood.org

Introduction-The Continuation Review Process

House Bill 2436 of the 2008 General Assembly requires a Continuation Review of certain funds, programs, and divisions. Section 6.7 (a) of House Bill 2436 requires the Department of Environment and Natural Resources to provide a written report to the Appropriations Committees of the Senate and House of Representatives on the Forest Development Program. The report must include the following elements:

1. A description of the fund, agency, division, or program mission, goals, and objectives.
2. The statutory objectives for the fund, agency, division, or program and the problem or need addressed.
3. The extent to which the fund, agency, division, or program's objectives have been achieved.
4. The fund, agency, division, or program's functions or programs performed without specific statutory authority.
5. The performance measures for each fund, agency, division, or program and the process by which the performance measures determine efficiency and effectiveness.
6. Recommendations for statutory, budgetary, or administrative changes needed to improve efficiency and effectiveness of services delivered to the public.
7. The consequences of discontinuing program funding.
8. Recommendations for improving services or reducing costs or duplications.
9. The identification of policy issues that should be brought to the attention of the General Assembly.
10. Other information necessary to fully support the General Assembly's Continuation Review Program along with any information included in instructions from the Fiscal Research Division.

Instructions and guidelines for completion of the Continuation Review were sent to DENR on October 3, 2008 from the NC General Assembly's Fiscal Research Division. As specified in Session Law 2008-107, an interim draft report was submitted on December 1, 2008. The following is the final report.

Research methodology for this Continuation Review process included the following:

- Analysis of historical program statistics dating back to 1978.
- Input gathered from a Forest Community stakeholder meeting on 11/20/2008, as well as information from DFR personnel who implement the FDP at the field level.
- A review of FDP statutory objectives and accomplishment reporting trends.
- A telephone survey of 462 NC forest landowners who had planted trees under the FDP during the last ten years. This was to determine how much of an incentive FDP funds were to them, and to determine the potential reduction in planted acreage if the FDP was discontinued.
- A review of US Forest Service Forest data on silvicultural activities carried out in North Carolina, including site preparation, tree planting and timber stand improvement work.
- Literature review on cost-share incentive programs and their impacts on forest management activities.
- Review several of the DFR accomplishment databases in order to determine how widespread the FDP's benefits are across the state.
- Review of Results-Based Budgeting service statements and field-level actions carried out under the FDP.

Current Environment, Programs, Services and Resources

The story of a typical North Carolina forest landowner

Mr. Smith is a husband, a father of 3 and a proud North Carolina forest landowner. His 2 oldest children are applying to college, and he has extensive medical bills from when his wife was in the hospital earlier this year. He had inherited 30 acres of forestland from his father years ago, and his family has always enjoyed being good stewards of the property. They like mature trees as much as anyone, but given his financial circumstances it appears that now might be the time to harvest the timber and utilize the income.

Mr. Smith contacts the NC Division of Forest Resources (DFR) and requests an inspection of his stand of trees. A County Ranger and Service Forester meet with him to discuss his management objectives and then inspect the property. The majority of the mixed stand of pine and hardwood are fifty years old and ready to be harvested. The Ranger and Forester provide Mr. Smith with a management plan summarizing their findings and recommend he work with a private consulting forester to proceed with a potential timber sale and harvest.

After meeting with several consulting foresters to discuss their fees and recommendations, Mr. Smith decides on a consulting forester. The consultant sets up the timber sale and oversees the harvest of the timber. Mr. Smith receives a check for the timber and sits down one night at his dinner table to review his situation. The income from the harvest was not as much as he had hoped for since his forest had a significant number of lower-value hardwood trees. After factoring in his wife's hospital bills and the initial costs of two college tuitions, there is hardly any much money left.

The consulting forester and the Division of Forest Resources both recommended he reforest the tract. Mr. Smith contacts the DFR again and requests they review the property and tell him what his options are in terms of reforestation. The DFR staff visit the cutover and note the condition of the trees and vegetation still present. They also review the site to ensure that all of the mandatory Forest Practices Guidelines (FPGs) related to Water Quality have been met and all the appropriate Forestry Best Management Practices (BMPs) are in place. Mr. Smith receives a management plan outlining the current conditions of the tract. There is still a large amount of vegetation and woody debris on the tract that would pose a problem to tree planting and seedling survival. The recommendation to Mr. Smith is to carry out some mechanical site preparation this summer, then plant pine trees this coming winter. The estimated cost for the mechanical site preparation and tree planting is approximately \$350 per acre. For thirty acres, this would amount to a \$10,500 bill. Mr. Smith likes the idea of replanting the tract, but he does not have that kind of money available. On top of that, the downturn in the economy has him worried and hesitant to spend what little money he does have.

The County Ranger understands Mr. Smith's financial constraints and outlines an option that may make it possible to carry out the work. He provides Mr. Smith with details on the Forest Development Program, which can help him reforest the tract properly by reimbursing him up to 40% of the expenses. This would mean it would only cost him 60% of the estimated bill, or \$6,300 to do the work. It will still be a challenge to come up with the money, but he believes he can make it work. He may not be around to see the next final harvest income, but maybe it can improve the value of the forest for his children and help them keep it in the family.

Mr. Smith reviews his management plan and works with the DFR to fill out the FDP application form. It is straightforward, and he understands that he must not carry out any work until he gets official approval; ensure that appropriate Forestry BMPs are utilized during the work; and maintain the stand of trees for a minimum of ten years. The DFR staff forward Mr. Smith's FDP application to their Central Office, and Mr. Smith receives a letter several weeks later that his application has been approved. The County Ranger informs him he is fortunate because historically many landowners have been put on a waiting list due to a lack of FDP funding. This can delay work for 1-3 years and increase costs dramatically.

Mr. Smith contacts several private contractors who specialize in site preparation and tree planting work. The contractors meet with Mr. Smith and review the tract, then make plans to carry out the work. As the work is being done, the County Ranger reviews the site to ensure that everything meets the DFRs strict guidelines. Mr. Smith gets a bill from the contractors providing details on the work that was completed and the number of acres site prepared and planted. The County Ranger reviews the finalized work and measures the tract with a mapping-grade GPS unit to confirm the accomplished acreage. Their documentation and Mr. Smith's bills are processed by the DFR Service Forester and Central Office staff. Mr. Smith receives a check in the mail the following month, and he pays the contractors for their services.

The County Ranger visits the tract the following year to ensure the tract has adequate seedling survival. Mr. Smith's stand of trees look healthy, and his future forest is growing quickly. He stops by to see Mr. Smith, tells him the good news, and leaves him some literature on managing young timberland for wildlife.

North Carolina Forest Statistics

North Carolina has 31,174,963 million acres of land (USFS Southern Research Station data). Appendix O ("Forest Inventory and Analysis Factsheet-North Carolina 2002") provides a snapshot of the state of North Carolina's forest resource. In 2002, 59% of North Carolina's land area (or 18.3 million acres) was considered forestland. Of this, 97% or 17.7 million acres was classified as timberland. The remaining 3%, or 552,000 acres, was "reserved forestland" in the Great Smoky Mountains National Park, national park wilderness areas, and State parks.

The area of timberland in the State has decreased for the last 4 US Forest Service Forest Inventory and Analysis (FIA) surveys. Timberland decreased by 800,000 acres between 1974 and 1984. There was only a minimal decline between 1984 and 1990. However, between 1990 and 2002, timberland fell by 5 percent or 1.0 million acres. The resulting 17.7 million acres of timberland represent the smallest amount in North Carolina since the survey began. The net loss was largely driven by conversion to urban and other land uses. Conversion to agricultural uses was a far second. (Brown & New, 2006) This loss of timberland to other uses likely would have been greater had it not been for financial assistance offered under the FDP.

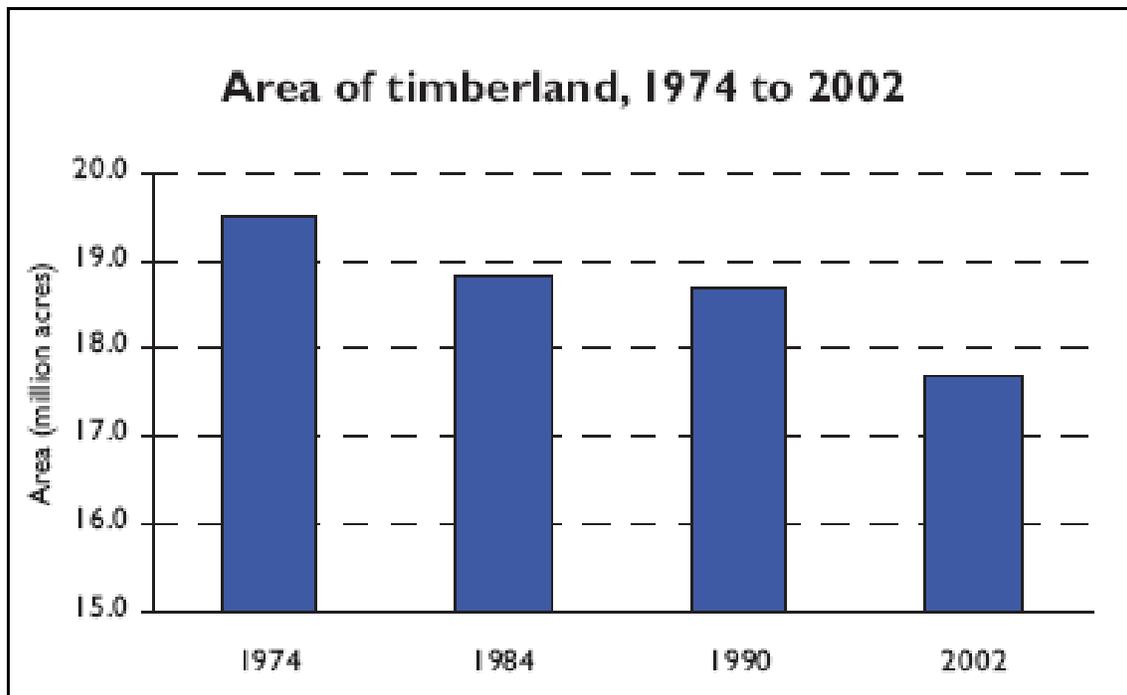


Figure 1: Loss of North Carolina timberland 1974-2002

North Carolina forestland by forest-type group

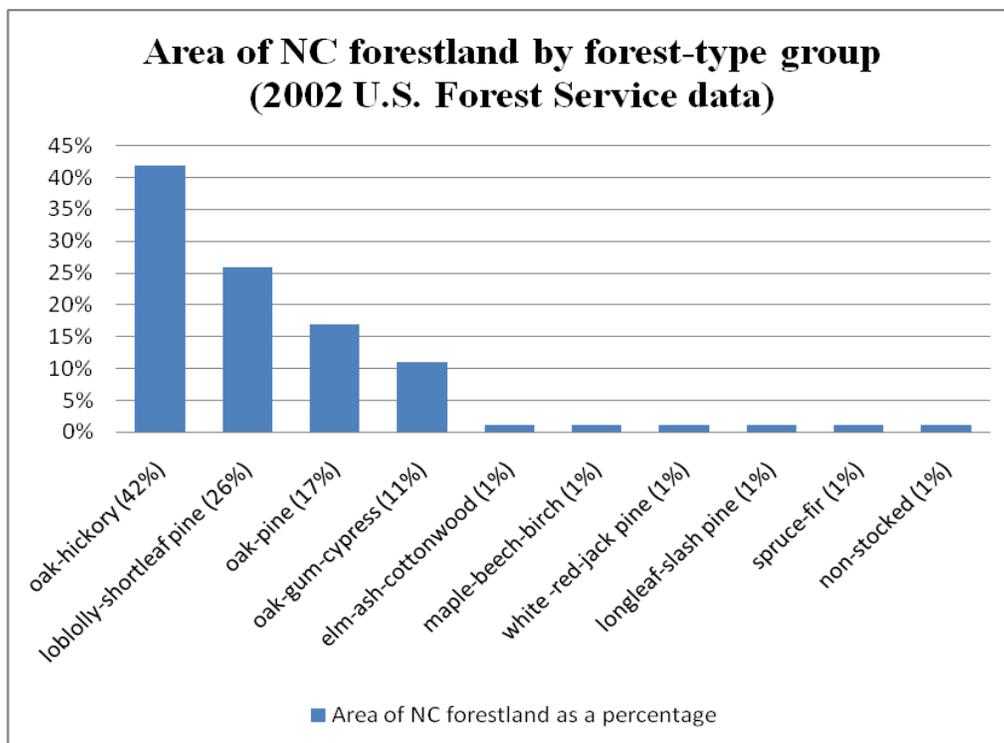


Figure 2: Area of NC forestland by forest-type group (2002 US Forest Service FIA data)

Figure 2 summarizes data released in 2002 by the U.S. Forest Service’s Forest Inventory and Analysis group. It illustrates that hardwood forest types make up 72% of North Carolina’s timberland, with yellow pine types accounting for 27%. Planted stands occupied 15%, or 2.6 million acres, of timberland. Most of these acres were in pine types.⁴

With nearly three-quarters of the State in hardwoods and many harvested areas coming back as a hardwood-pine mixture, there is a high degree of diversity across North Carolina. When considering concerns about species composition of our forests, it is important to remember that some of the landowners who utilize the FDP choose to apply for the “plant-only” option. In this case intense site preparation is not employed during tree establishment. The FDP also allows for the preparation and encouragement of natural seed where the amount and quality of the source is appropriate for timber production.

Reforestation in North Carolina

Pages 4-11 of the National Council for Air and Stream Improvement, Inc. “*Characteristics of Public Data Related to Reforestation*”⁵ paper highlights the availability of reforestation data. Reforestation acreages for the State of North Carolina can be viewed in this document’s Appendix section⁶. The DFR maintains records of reforestation and afforestation work by small forest landowners carried under cost share programs that it oversees or has involvement in. The Division also has data on some of this work if a landowner did not utilize a cost share program as long as the DFR provided the management plan recommending the work. There is no statewide report that captures all of the annual acreage reforested by large industrial forest landowners.

U.S. Forest Service “Forest Inventory and Analysis” data indicates that between 1990 and 2002 a final harvest occurred on an average of 199,500 acres per year in North Carolina⁷. Records of North Carolina’s statewide reforestation accomplishments by small forest landowners typically vary from 75,000 to 100,000 acres per year. The FDP has accounted for the planting of approximately 50,000 of those acres in each of the last ten years.

Program Description and Objectives

The Forest Development Program (FDP) was designed to encourage private woodland owners to reforest their land after harvest, and to put idle or unproductive land into trees. The significant lack of reforestation on harvested tracts of forestland owned by private, non-industrial landowners was one of the primary drivers behind this effort. Legislation was passed in 1977 creating the State’s cost-share program and the companion Primary Forest Product Assessment Act. This program offers cost-share assistance to private landowners as an incentive to encourage reforestation, and thereby eases the financial burden of their long-term investment. These landowners typically will not realize any return on this investment for 25 years or longer.

⁴ Refer to Appendix O-“Forest Inventory and Analysis Factsheet-North Carolina 2002 (from 2002 USFS FIA data)”

⁵ See Weatherford, Wigley, & Van Deusen, 2008

⁶ Refer to Appendix M “Pine and Hardwood Planting in NC by Non-Industrial Private Landowners (1999-2008)” and Appendix K “Percentage of North Carolina Site Preparation, Planting, and Timber Stand Improvement Activities with FDP Funding”

⁷ Appendix K “Percentage of North Carolina Site Preparation, Planting, and Timber Stand Improvement Activities with FDP Funding”

The overall purpose of the program is to encourage commercial production of the timber resources of the state to insure future needs are met, while providing protection of the State's natural resources and supplying beneficial wildlife habitat.

The assessment levied on primary forest products processed from North Carolina timber historically provides over 70% of the funding for the FDP program. This applies to “individuals, groups, associations or corporations that procure forest products at their point of concentration for conversion to secondary products for shipment to others for such conversion”⁸. The vast majority of these assessments are paid by producers of pulp, lumber, plywood and other solid wood products. The General Assembly also appropriates funds to supplement the funds from the assessment. Appropriations have on average provided 25% of the funds for the program, with forest industry providing 71% and earned interest accounting for the remaining 4% of funds. Once again, these monies make up the amount reimbursed to the landowner for reforestation and timber stand improvements, with the remaining out-of-pocket expenses paid by the landowner.

The program guidelines were designed to allow all legitimate means of regeneration or establishment. This includes techniques such as traditional site prep and tree planting, as well as, site preparation for natural seeding, planting without site preparation, and plantings involving multiple tree species. This approach encourages beneficial species and genetic diversity.

From the program's beginning in 1978 through 1982, the cost-share rate was 60% state funds and 40% paid by the landowner. The demand for funds rapidly drained the available money, and a waiting list was created during the first year of program operation. This list continued to grow until it reached 18-24 months in length of time for landowners to receive cost-share funds.

In an effort to reduce this long waiting period, and to spread available dollars to more landowners, the cost-share rate was changed to 50/50 on July 1, 1983 and subsequently to 40/60 on July 1, 1984. In addition, a “prevailing rate” schedule for each practice is utilized. No payment may exceed these rates even if the cost to the landowner is higher. These rates are reviewed annually, and revised as needed to reflect actual rates charged by private contractors.

Beginning as a trial basis during the 1983-84 fiscal year, some of the FDP funds were set aside for “Plant Only” projects. Initially, funds for the “Plant Only” practice were derived from money released from canceled projects or from projects not using all the funds allotted to them. Landowners received priority funding status on acres which just needed planting or on acres that the landowner had paid in full for the site preparation, reducing the per acre cost of the program. Due to the success of the “Plant Only” program, a special allocation was established on July 1, 1986. This allowed a specific portion of existing FDP funds to be set aside for the program. At the same time, a special designation was established for the reforestation efforts in the Mountain Region, with an emphasis on hardwood regeneration. These “Plant-Only” and “Mountain” pots of money did not come from any extra funding of the FDP. Rather, they are simply a targeted application of some of the monies coming from the general FDP fund.

In July 1993, prompted by recent forest surveys indicating a steady decline in longleaf pine acreage, a “longleaf pine initiative” was undertaken by the DFR to increase the species in its natural range and to restore this important ecosystem. Additional attention was also focused on hardwood production and the planting of desirable species in wetland areas. To make restoration of longleaf, hardwood and wetland species more equitable and attractive, the cost-share reimbursement rate for these practices was raised to 60% vs. the typical 40% for most pine species. Results to date are 3,057 acres of hardwood/wetland species planted and 44,601

⁸ Primary Forest Product Assessment Act-Appendix B

acres of longleaf pine during the thirteen years since implementing the higher FDP cost share rate. A review of North Carolina longleaf planting accomplished under cost share programs from 1997 through 2006 revealed that 25,000 acres of the 60,000 longleaf pine acres planted were done under the FDP⁹.

During the late 1990s, there was a substantial increase in timber harvests due to salvage efforts following significant acreage of timber damage caused by hurricanes and ice storms. Although this produced more assessment dollars for cost-share purposes, it increased demand for reforestation. The actual assessment rate being paid by the primary processors (timber industry) has not changed since the original rate was established in 1977.

In August 1997, legislation was passed which provides for (1) the recovery of funds paid as forest development cost-share payments when trees are not maintained for at least ten years and (2) the conversion of the forest development fund to an interest bearing account.

Streamlining efforts reduced the waiting list for several years, and in most cases landowners were receiving approval for cost-share the same month they applied. However, an increase in the waiting period has been experienced over the last few years due to program demand and the loss or reduction in alternative programs due to limiting federal funding. Some of these Federal cost share programs include the Fran Reforestation and Rehabilitation Program; Forest Recovery Program; Forestry Incentives Program; Stewardship Incentives Program; and Forest Land Enhancement Program.

Current funding levels are not adequate for the FDP Program's demand. At the end of FY2007-08 there were at least 346 qualified landowners waiting to receive assistance on 14,032 acres. Additional funding in the amount of \$1,175,595 would be needed to satisfy this waiting list.

In July of 2005, the Legislature authorized new Forest Stand Improvement Practices to "improve tree growth and overall forest health". These new practices were specified and approved in Administrative Code in November 2006. As of July 1, 2007 landowners could apply for such improvement practices as Prescribed Burning; Fertilization; Crop-Tree Crown Release; and Cull-Tree Removal.

From the beginning of the program in July 1978 through June 2007, the program has assisted 44,625 landowners, reforested 1,133,727 acres, and paid out \$57,948,466. This figure represents approximately 40% of the landowners' FDP-reimbursed expenses during this time. That would mean that the estimated 60% out-of-pocket expense for landowners during this time was \$86,922,699, for a conservative estimated total bill of \$144,871,165 primarily aimed at reforestation activities. An additional consideration is that site preparation, tree planting and forest improvement work can often cost more than the "ceiling rate" that is cost-shared up to under the FDP. Once the price goes past this threshold, landowners bear 100% of the cost.

Over the life of the program, the average per acre cost to the landowner is \$127.00 and the average per acre cost share payment is \$51.00. The state has collected \$48,444,147 in assessments and earned \$2,340,144 in interest. State appropriations to date have totaled \$17,765,000.

⁹ Source: NC DFR 4220 Forest Management Accomplishment Reporting Database report. Accessed 4-12-2007

Examples of where funds would originate from to pay for typical activities under the FDP

Scenario 1: Landowner plants loblolly pine (no mechanical site preparation required). Cost is \$75.00 per acre. The landowner pays the entire bill up front, and upon turning in their copy of the paid bill to the NCDFR the FDP would reimburse 40%. For a \$75.00/acre cost, this would mean the payment of the bill would be broken down as follows:

Total Cost: \$75.00/acre.

Landowner pays 60%, or \$45.00/acre.

The FDP pays 40%, or \$35.00/acre. The timber products assessment portion of the FDP fund pays \$21.30/acre; the state appropriations pay for \$7.50/acre; and interest generated from the FDP fund pays \$1.20/acre.

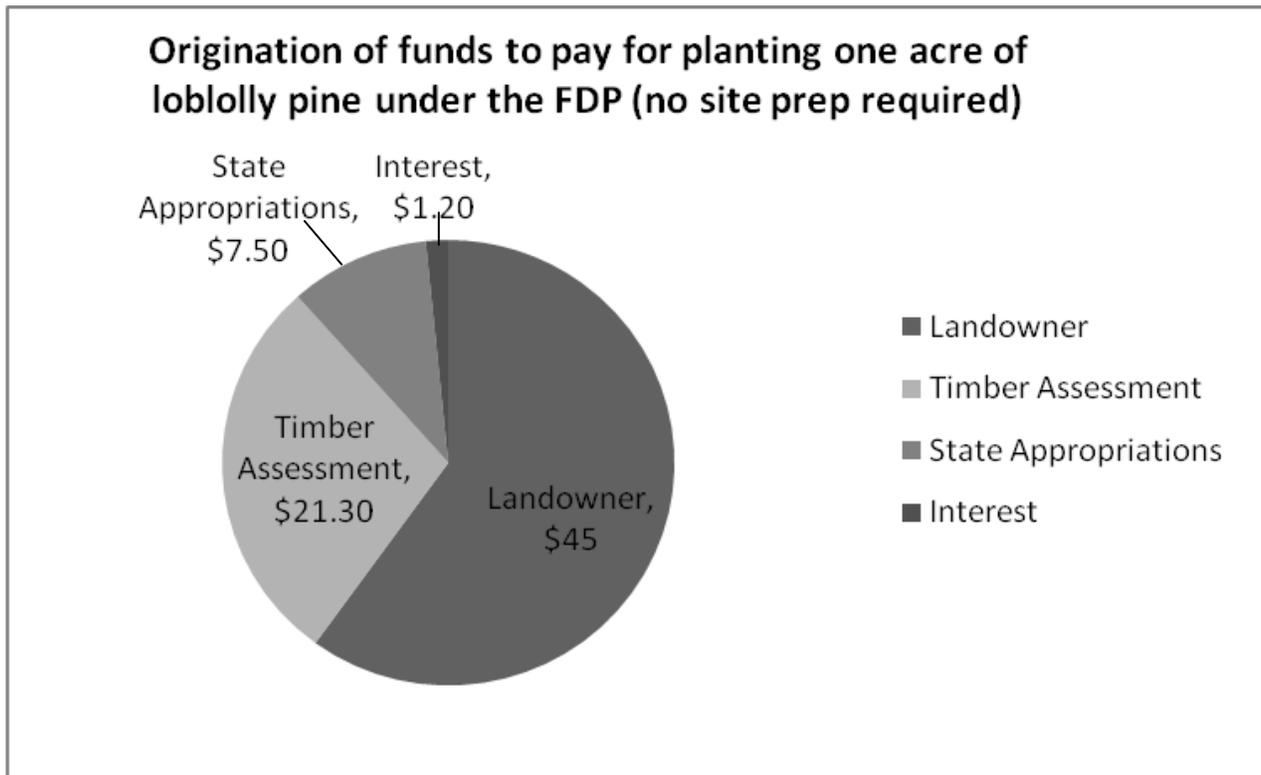


Figure 3: Origination of funds to pay for planting one acre of loblolly pine under the FDP (no mechanical site prep required)

Scenario 2: Landowner plants loblolly pine (mechanical site prep is required). Costs include mechanical site preparation (“KG & pile” = \$270.00/acre; “single bedding = \$80.00/acre)¹⁰ and tree planting (\$75.00/acre) for a total expense of \$425.00/acre. This would mean that the payment of the bill would be broken down as follows:

Total Cost: \$425.00/acre.

Landowner pays 60%, or \$255.00/acre.

The FDP pays 40%, or \$170.00/acre. The timber products assessment portion of the FDP fund pays \$120.70/acre; state appropriations pay for \$42.50/acre; and interest generated from the FDP fund pays \$6.80/acre.

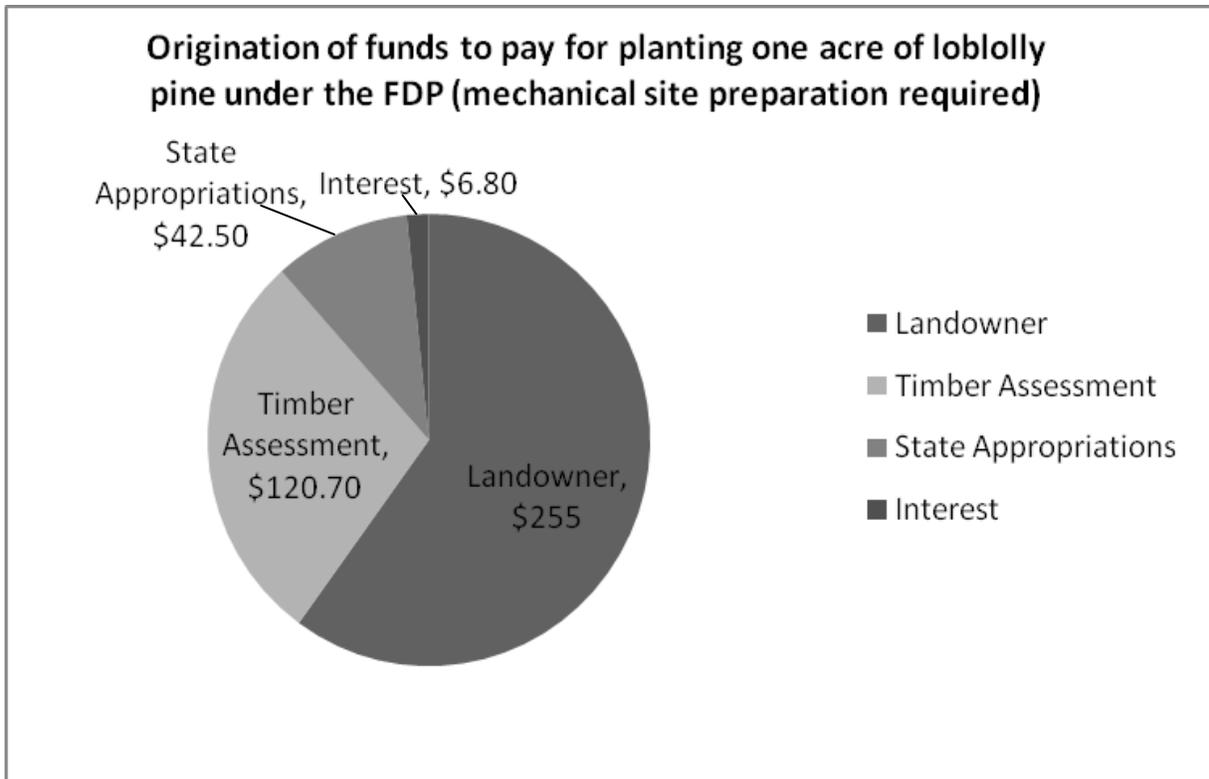


Figure 4: Origination of funds to pay for planting one acre of loblolly pine under the FDP (mechanical site prep required)

¹⁰ “KG & pile” involves a heavy tractor moving large, woody debris out of the way for tree planting; “bedding” creates raised areas of soil so the roots of planted trees are kept out of water...it is usually done in wet locations

Scenario 3: Landowner plants longleaf pine (site preparation is required). Costs include site preparation (“ground application of herbicide” = \$125.00/acre and “site preparation burn” = \$45.00/acre) and longleaf tree planting (\$115.00/acre) for a total expense of \$285.00/acre. As a reminder, FDP usually reimburses landowners 40% of the bill up to a ceiling rate; the only exception is when FDP reimburses landowners 60% for longleaf/hardwood/wetlands species tree planting. So for scenario #3, this would mean that the payment of the bill would be broken down as follows:

Total Cost: \$285.00/acre.

Landowner pays 40%, or \$148.00/acre.

The FDP pays 60%, or \$137.00/acre. The timber products assessment pays \$97.27/acre; state appropriations pay for \$34.25/acre; and interest generated from the FDP fund pays \$5.48/acre.

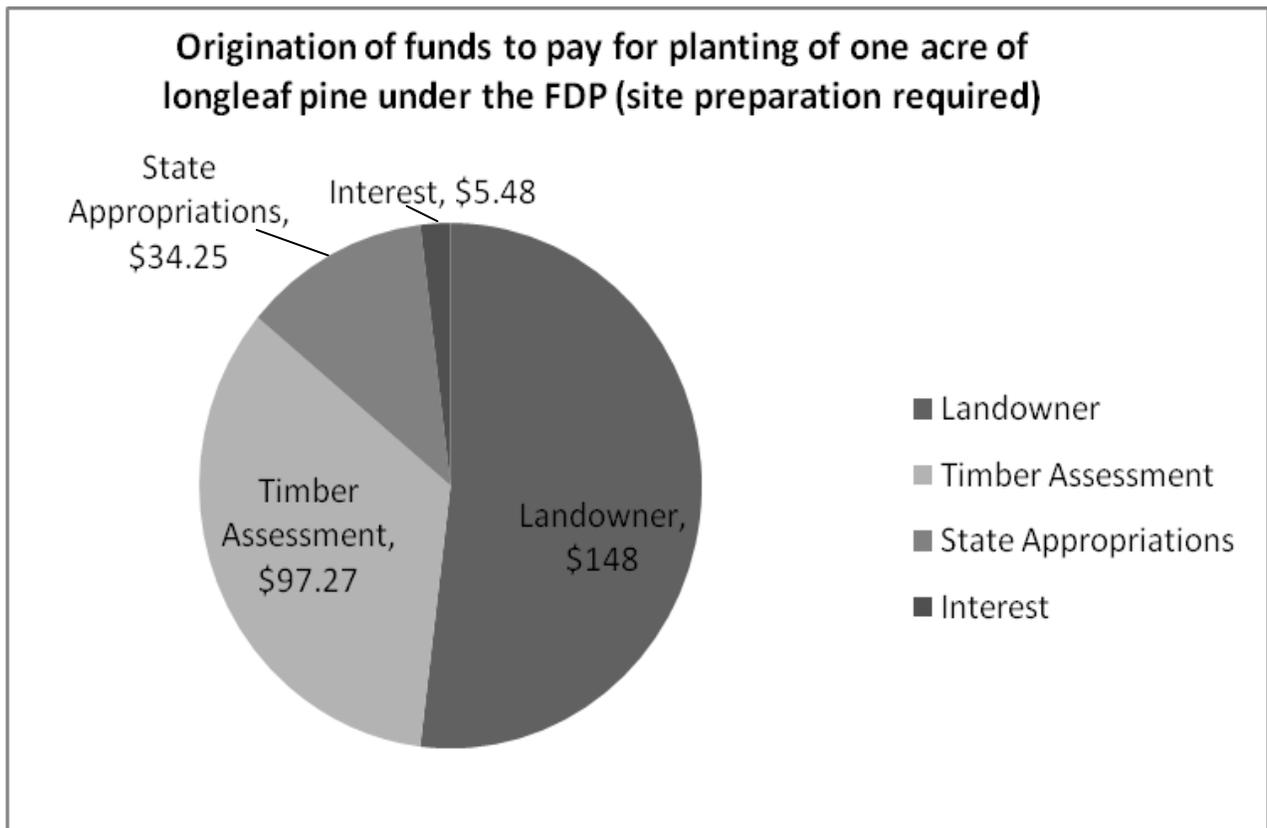


Figure 5: Origination of funds to pay for planting one acre of longleaf pine under the FDP (site prep required)

Statutory Link

Appendices A through D contain the statutory language associated with the FDP. The FDP's overall mission and objectives have been clearly defined by this text. The Forest Development Act states the following:

“§ 113A-177

- (a) *The General Assembly finds that:*
 - (1) *It is in the public interest of the State to encourage the development of the State's forest resources and the protection and improvement of the forest environment.*
 - (2) *Unfavorable environmental impacts, particularly the rapid loss of forest land to urban development, are occurring as a result of population growth. It is in the State's interest that corrective action be developed now to offset forest land losses in the future.*
 - (3) *Regeneration of potentially productive forest land is a high priority problem requiring prompt attention and action. Private forest land will become more important to meet the needs of the State's population.*
 - (4) *Growing demands on forests and related land resources cannot be met by intensive management of public and industrial forest lands alone.*
- (b) *The purpose of this Article is to direct the Secretary to implement a forest development program to:*
 - (1) *Provide financial assistance to eligible landowners to increase the productivity of the privately owned forests of the State through the application of forest renewal practices and other practices that improve tree growth and overall forest health.*
 - (2) *Insure that forest operations in the State are conducted in a manner designed to protect the soil, air, and water resources, including but not limited to streams, lakes and estuaries through actions of landowners on lands for which assistance is sought under provisions in this Article.*
 - (3) *Implement a program of voluntary landowner participation through the use of a forest development fund to meet the above goals.*
- (c) *It is the intent of the General Assembly that in implementing the program under this Article, the Secretary will cause it to be coordinated with other related programs in such a manner as to encourage the utilization of private agencies, firms and individuals furnishing services and materials needed in the application of practices included in the forest development program.”*

This program is needed for a variety of reasons, some of which are outlined in the statutory directive above. Even in 1977, the accelerated conversion of forestland to urban use was identified as a threat to the future of the State, and FDP-assisted reforestation of harvested forest stands was identified as a need. The importance of this objective is emphasized by more recent efforts in protecting green space and the preservation of North Carolina's natural heritage. Another statutory objective was to ensure a viable stream of commercial timber originating from private forestlands. It is important to provide forest landowners with income from their property to reduce the temptation to sell their land and have it converted to another land use. It is also vital to North Carolina's forest industry, which ranked as the State's #1 manufacturing industry¹¹ as of 2007. Forest

¹¹ Refer to Appendix P-“Forest Products Industry Emerges as North Carolina's Largest Manufacturing Industry”

resource protection, which includes protecting soil, water, and air resources, is also clearly defined as a mandatory objective of the program.

There are a number of beneficial side effects resulting from the FDP's actions that are not referenced in the statutory language. These include:

- The retention and increase of forestland to sequester carbon and mitigate climate change impacts. The production of commercial timber supplies to support emerging biofuels and biomass-based energy.
- Watershed protection resulting from canopy cover and soil stabilization.
- Restoration of species in decline, such as the longleaf pine.
- Enhanced early-successional habitat for wildlife species such as quail and rabbits.

Service Statements

North Carolina's forestland is a tremendous benefit to the state, providing great economic value and adding to the quality of life for its citizens. The Division of Forest Resources' primary purpose is to ensure adequate and quality forest resources for the state to meet present and future needs. The forest products industry is the largest manufacturing industry in the state, contributing approximately 6.1 billion dollars annually to the State's Gross Product and providing over 100,000 jobs for North Carolinians¹².

The Division of Forest Resources is mandated and directed by Chapters 77, 113 and 143 of the North Carolina General Statutes and by Title 15, Chapter 9 of the North Carolina Administrative Code to protect, manage and develop the forest resources of the state. The techniques used to accomplish this mandate involve management of existing resources, development and creation of new and better forests, and protection of these valuable resources.

The programs under these objectives are directed at the hundreds of thousands of private landowners who collectively own the majority of the state's 17+ million acres of timberland. Programs include reforestation services, forest fire prevention and suppression, and insect and disease control. The Division is also involved in the operation of tree seedling nurseries, long range forestry planning and technical development, water quality controls, urban forestry assistance, training, and support to volunteer fire departments and forestry education.

The Division is organized as follows:

- Director's Office -- Deputy Director and Assistant Director (Raleigh);
- Three Sections -- Administrative Services, Forest Protection, and Forest Management/Development (Raleigh);
- Three Regional Offices -- Coastal (Kinston), Piedmont (Jordan Lake) and Mountain (Asheville);
- 13 Districts headquartered at Asheville, Lenoir, Rockingham, New Bern, Rocky Mount, Fayetteville, Elizabeth City, Whiteville, Sylva, Lexington, Hillsborough, Mount Holly and Fairfield; and
- County Forest Ranger or Forester and staff (if any) in each county.

¹² Refer to Appendix P-“Forest Products Industry Emerges as North Carolina’s Largest Manufacturing Industry”

Each county signs an agreement with the Division and shares in the cost of the county program. The county share varies from 25 to 40%, depending on the tax base of the county. All personnel employed in the counties are state employees; however, the county board of commissioners participates in the selection of the county ranger.

The county ranger is responsible for carrying out all Division programs within his or her county. The county ranger is a forest technician who has completed either a two-year forest technician course at a technical school or a comparable in-service training program administered by the Division. Professional assistance in technical areas is provided by Division foresters and specialists. All Division foresters are Registered North Carolina foresters who have at least a four year degree from an accredited college or university.

The Mission of the Division of Forest Resources is:

“To develop, protect, and manage the multiple resources of North Carolina’s forests through professional stewardship, enhancing the quality of life for our citizens while ensuring the continuity of these vital resources.”

The Mission of the Forest Development Program is to:

- (1) *Provide financial assistance to eligible landowners to increase the productivity of the privately owned forests of the State through the application of forest renewal practices and other practices that improve tree growth and overall forest health.*
- (2) *Insure that forest operations in the State are conducted in a manner designed to protect the soil, air, and water resources, including but not limited to streams, lakes and estuaries through actions of landowners on lands for which assistance is sought under provisions in this Article.*
- (3) *Implement a program of voluntary landowner participation through the use of a forest development fund to meet the above goals.*

The FDP’s Mission supports the overall Mission of the Division. It develops the State’s forests by funding reforestation activities; it protects the forests by mandating that applicable Forestry Best Management Practices be applied on all cost-shared sites prior to payment; and it manages our forests by funding activities that improve existing forestland.

Figure 6: Comparison of DFR and FDP Mission Statements

2008-09 Division of Forest Resources Results-Based-Budgeting (RBB) service statements that relate to its Forest Development Program include the following:

“Ensure healthy and sustainable forest resources on private lands for the citizens of NC by providing landowner education and professional forestry services resulting in optimum production and resource development.”

Actions carried out under the FDP help to accomplish this RBB service statement by providing incentives for forest landowners.

“Enhance and solidify partnerships with other federal, state and private entities through improved cooperative agreements, assessment of shared programs, increase joint programs and projects, and the sharing of ideas and resources to improve cooperation and reduce duplication of effort.”

Actions carried out under the FDP help to accomplish this RBB service statement by promoting better land stewardship and management to protect soil, water and air quality and to improve habitat for wildlife.

“Evaluate and refine the Forest Development Program [FDP] to better meet the changing needs of landowners, to encourage them to improve their woodlands, which provide healthy forests for all the citizens of NC.”

Actions carried out under the FDP help to accomplish this RBB service statement by helping North Carolina maintain its “green infrastructure”.

The reforestation and forest improvement activities accomplished under the FDP also support the Department of Environment and Natural Resource’s (DENR) 2008-09 Strategic Plan. The Plan’s Vision Statement is “North Carolina: Green and Growing!” Several of the Strategic Directions include “Stewardship of Conservation Lands” and “Conservation on Private Lands, including Forestland”.

Resource Allocation

Appendix H (“FDP Funding from 1978-2008, including Timber Assessments, State Appropriations and Interest Earned) contains a year-by-year tabular breakdown of the FDP’s funding. Yearly totals for the last five years are as follows:

Fiscal Year	Total Assessment Dollars	Total State Appropriations	Interest Earned	Total FDP Combined Funding
2003-04	\$1,893,332.00	\$589,500.00	\$144,525.56	\$2,627,357.56
2004-05	\$1,930,345.00	\$589,500.00	\$106,364.97	\$2,626,209.97
2005-06	\$1,968,655.00	\$589,500.00	\$141,902.00	\$2,700,057.00
2006-07	\$1,896,031.00	\$1,189,500.00	\$217,515.70	\$3,303,046.70
2007-08	\$1,888,546.00	\$589,500.00	\$257,835.00	\$2,735,881.00
Average	\$1,915,381.80	\$709,500.00	\$173,628.65	\$2,798,510.45

Table 1: FDP Budget Figures (2003-08)

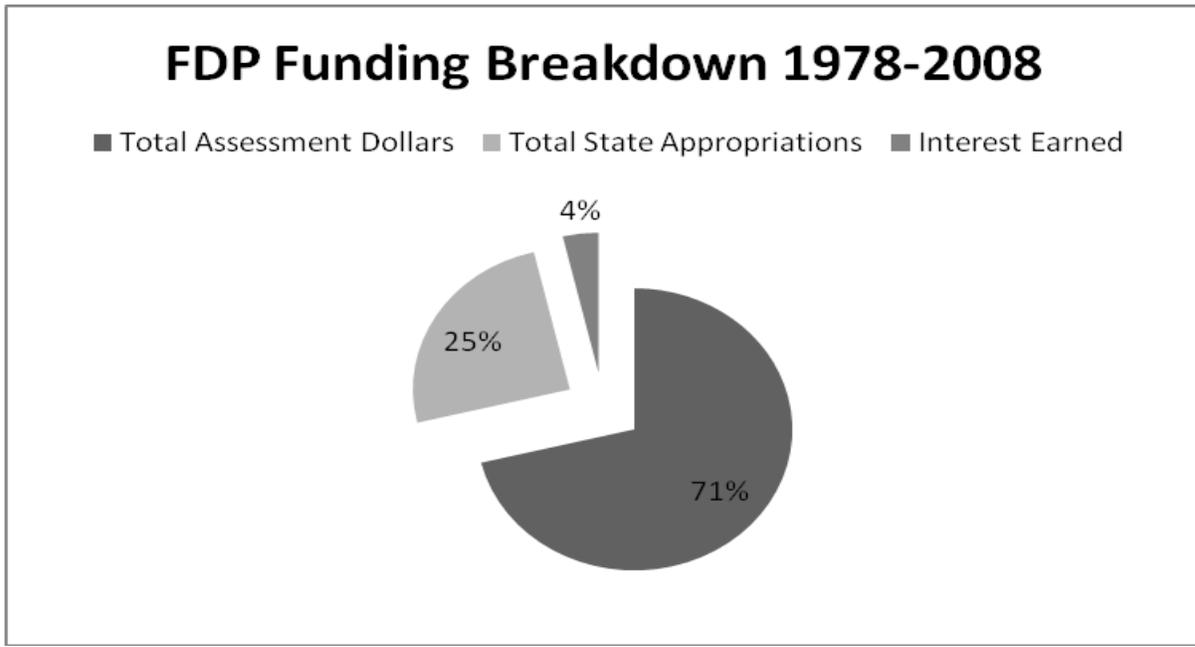


Figure 7: FDP funding breakdown (1978-2008)

The figure above shows that over the life of the FDP, approximately 71% of the funds have originated from the timber assessment; 25% have come from state appropriations; and about 4% have been generated as interest on the FDP account. This all makes up the 40% of expenses that are typically reimbursed to the landowner. Landowners typically pay for the other 60% of work expenses.

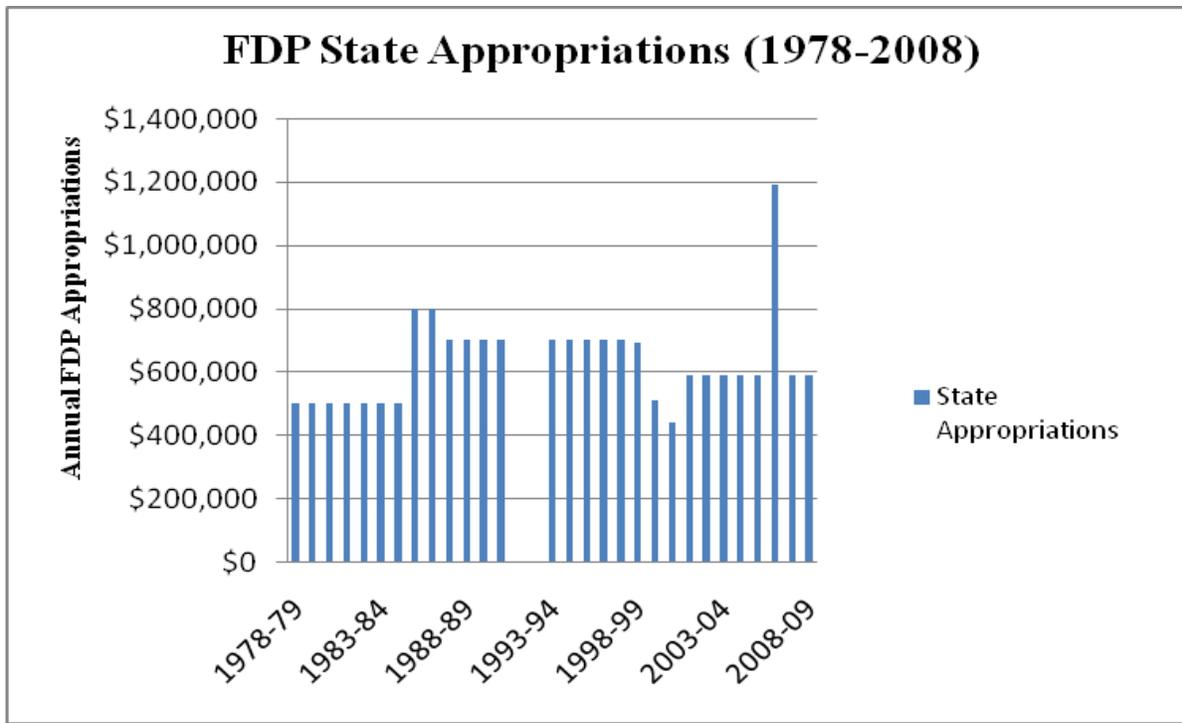


Figure 8: FDP State Appropriations (1978-2008)

Figure 8 shows how state appropriations to the FDP have remained relatively flat over the last thirty years. Despite this, North Carolina’s citizens have continued to enjoy the societal benefits associated with the FDP-planted forestland the entire time. These include ecosystem services such as watershed protection, wildlife habitat, carbon sequestration, aesthetics, etc. The state did not contribute any appropriated funds in fiscal years 1991-92 and 1992-93. In fiscal year 2006-07 the state contributed \$600,000 of non-recurring funds in addition to the \$589,500 amount that had been typical in previous years.

FDP Administrative Costs Directly Deducted from the Program’s Funds

The table below includes the direct annual administrative cost to the Division of Forest Resources to administer the FDP. It also lists the administrative cost to the NC Department of Revenue associated with timber assessment collection and oversight (as reported by that Department).

Fiscal Year	DFR Admin. Cost	Dept. of Revenue Admin. Cost
2003-04	\$124,718	\$83,180
2004-05	\$137,471	\$158,351
2005-06	\$138,131	\$112,771
2006-07	\$155,199	\$110,623
2007-08	\$102,509	\$118,262

Table 2: Direct FDP administrative costs to the DFR and DoR (2003-08)

The chart below summarizes the FDP cost trend:

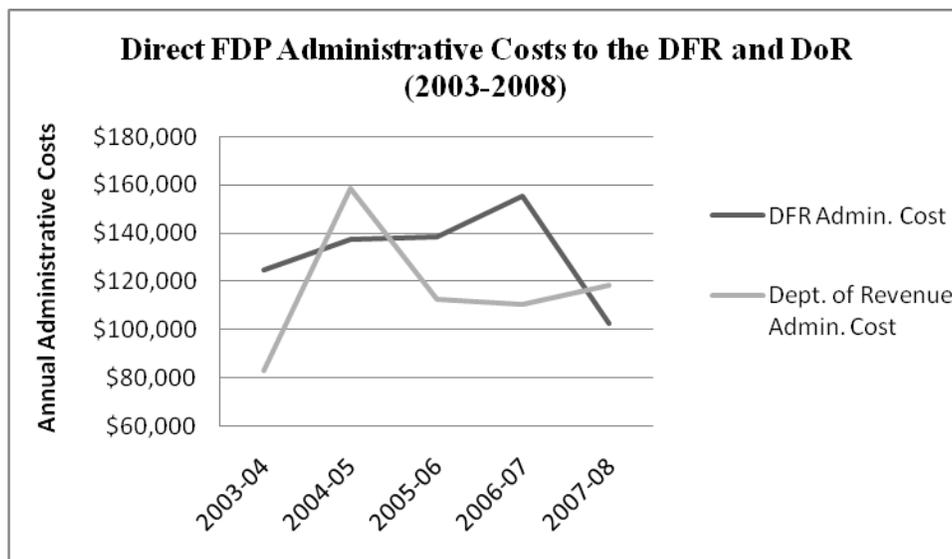


Figure 9: FDP direct administrative cost per year for the DFR and DoR (2003-08)

For a number of years, 3 full-time employees’ salaries were paid for with FDP funds. In FY 2007-08, that number was reduced to two full-time positions funded. As a result, the FDP direct administrative cost to DFR dropped to \$102,509. One of the remaining positions is the FDP Program Administrator who works out of the DFR Central Office in Raleigh. This staff member coordinates FDP cost-share applications and the payment of

landowner reimbursement checks, as well as maintains the central FDP database. The other position is a full-time Management Ranger in DFR's Rocky Mount District. This staff member assists with the training of numerous DFR field staff in skills required to implement the FDP at the ground level. The Rocky Mount District historically leads the state in reforestation accomplishments, and there is a high level of FDP activity concentrated there.

In FY 2008-09, it was decided that 25% of the FDP Program Administrator's position would be fund-shifted to DFR's Southern Pine Beetle Prevention Program to more accurately reflect the position's work plan. This means the FDP program will pay for the equivalent of 1.75 positions in FY 2008-09, with an expected cost to the FDP of \$102,333.

It is worth noting that no FDP funds are used for equipment purchases even though this is allowed under Section § 113A-179 (d) of the Forest Development Act.

NC Department of Revenue Expenditures to Administer the Primary Forest Products Assessment

Since the inception of the Forestry Development Program, the Department of Revenue determined it would require two full-time equivalents (FTE's) to administer the Primary Forest Products Assessment. Annual and daily activities to administer the assessment include:

- 1) Receiving and opening the more than 750 Primary Forest Products Tax returns received per year.
- 2) Costs associated with preparing the payment for deposit, which includes the labor to manually prepare payment vouchers for each Primary Forest Products Assessment payment received by the Department, along with paper, supplies, printer maintenance etc., to generate the payment vouchers, costs associated with the courier making the daily bank deposit, etc.
- 3) Costs associated with imaging and capturing the data from the assessment return and payment through the Department's scanners in order to properly post the assessment return data and payment information to the appropriate account to the Department's Integrated Tax Administration System (ITAS). This would also include maintenance and supplies associated with the scanning equipment.
- 4) Mailing and postage costs associated with notifying individuals/companies of their liability for filing and remitting the assessment.
- 5) Costs associated with maintaining the assessment return on the Department's website.
- 6) ITS costs associated with maintaining assessment data and administering the assessment via the Department's Integrated Tax Administration System (ITAS).
- 7) Expenses associated with personnel in interpreting the General Statutes to answer assessment questions, responding to telephone inquiries from other states looking to implement similar programs, etc.
- 8) Costs associated with reviewing each Primary Forest Products Assessment return, reconciling the volumes of the four categories of wood reported against the amount of assessment remitted, and corresponding with individuals/companies should the volumes and assessment reported not reconcile.
- 9) Other activities include tracking the data from the assessment returns and reporting the information quarterly to the Department of Environment and Natural Resources.
- 10) Costs associated with the Department's Financial Services Division to administer the reporting of the penalties collected on Primary Forest Products assessments and the 20% Collection Assistance Fee assessed on final assessment notices.

The expenses reimbursed by the Department of Environment and Natural Resources, Division of Forest Resources have strictly been for only the salaries and benefits (social security, retirement, medical and longevity) for the two designated positions. Based on the data provided by DENR, the Department of Revenue

has not exceeded the 5% maximum (based on total assessments reported by DENR) up until the Fiscal Year 2004-05. As legislative increases have been granted, the salaries for the two designated positions have continued to increase. The Auditor position banded at a journey class had been previously filled by a seasoned employee, at the upper range of the pay class until August 31, 2008, when the employee retired. The position was recently filled at a lower annual salary. The Department does expect to see a decline in expenditures for FY 2008-09 as the position was filled in the fall of 2008 at a salary of \$22,000 less than the previous employee's salary. It is projected the Department's expenses to administer the Primary Forest Products Assessment will, for the current fiscal year, exceed the 5% cap, by an estimate of 0.65%.

(Information contributed by the Financial Services Division, NC Department of Revenue)

FDP implementation/administrative costs absorbed by other funding sources

The FDP is a “gateway” program for the DFR in that some landowners contact the Division strictly for the financial assistance but end up benefiting in many other ways. This includes on-the-ground assistance; technical guidance; making contacts with other natural resource professionals who can assist them; and greater knowledge of more complete land management approaches. The FDP is implemented at the ground-level by approximately 60 DFR Foresters and 200 Rangers. The field time attributed to the FDP (aside from the two full-time positions previously described in this section) is a cost covered by the salary of appropriated positions. The funding for many of these field positions, such as County Rangers and Assistant County Rangers, is funded partially by state appropriated funds as well as money from the county they work in. This county funding contribution can vary from 35-40% of the position's salary, and often depends on each county's financial ability to pay. This arrangement is beneficial to the counties seeing as how these positions increase that county's forest management accomplishments and wildfire control capacity. These DFR personnel are the ones who meet with forest landowners to discuss their management objectives; examine their forestland to determine current stand conditions and possible management alternatives; write the management plans that summarize landowner options; and help the landowner through the cost-share application and utilization process. There are additional DFR staff members (ex. 13 District Clerks and several Central Office Program Managers) that spend time on the FDP, but the majority of the time and effort devoted to the FDP is by the Division's field staff. Whenever DFR personnel spend time working on the FDP, they have been instructed to indicate such time on their BEACON state timesheet by the use of the timesheet code “0220”.

An analysis of the last four years worth of DFR time worked revealed the following work hours recorded under the “0220” FDP BEACON time code (the total number of DFR hours worked is also listed):

Year	FDP Hours Recorded by DFR Personnel	All Hours Worked by DFR Personnel	% of Overall DFR Work time Attributed to FDP
2004	43,487	1,232,960	4%
2005	41,587	1,259,738	3%
2006	32,276	1,296,956	2%
2007	30,462	1,290,254	2%
Total	147,812	5,079,908	3%
Average	36,953	1,269,977	3%

Table 3: Hours worked by DFR staff on FDP activities (2004-07)

If you take the 4-year average of 36,953 DFR work hours per year spent on FDP implementation and administration and multiply it by \$25/hour (an hourly rate that more than reasonably represents the costs of the typical employee in question), the figure is \$923,825/year. Assuming there was a significant drop in reforestation and forest improvement assistance requests if the FDP was discontinued, DFR foresters and rangers would utilize that “freed-up time” to service other types of requests. DFR offers a large number of services (wildfire control; pre-harvest planning; water quality inspections; insect and disease exams; environmental education outreach programs; etc.), and many of our programs currently have backlogged requests. DFR personnel would still be able to reach some of the forest landowners in North Carolina, but the number of landowners “walking through the DFR gate” and learning about water quality, wildlife management, etc. would decrease. The discontinuation of the FDP would result in a decrease in planted and improved forest acreage, but these Forester and Ranger positions would still be needed to complete their other duties.

Program Performance

Performance Measures and Data

One indicator of the FDP’s effectiveness is the fact that over the last ten years small private landowners in North Carolina have typically reforested between 75,000 and 100,000 acres annually¹³, and 50,000 acres of that has been accomplished under the FDP program. This represents 50% -75% of the total reforestation being carried out by this class of landowners who own over 60% of the timberland in the state¹⁴.

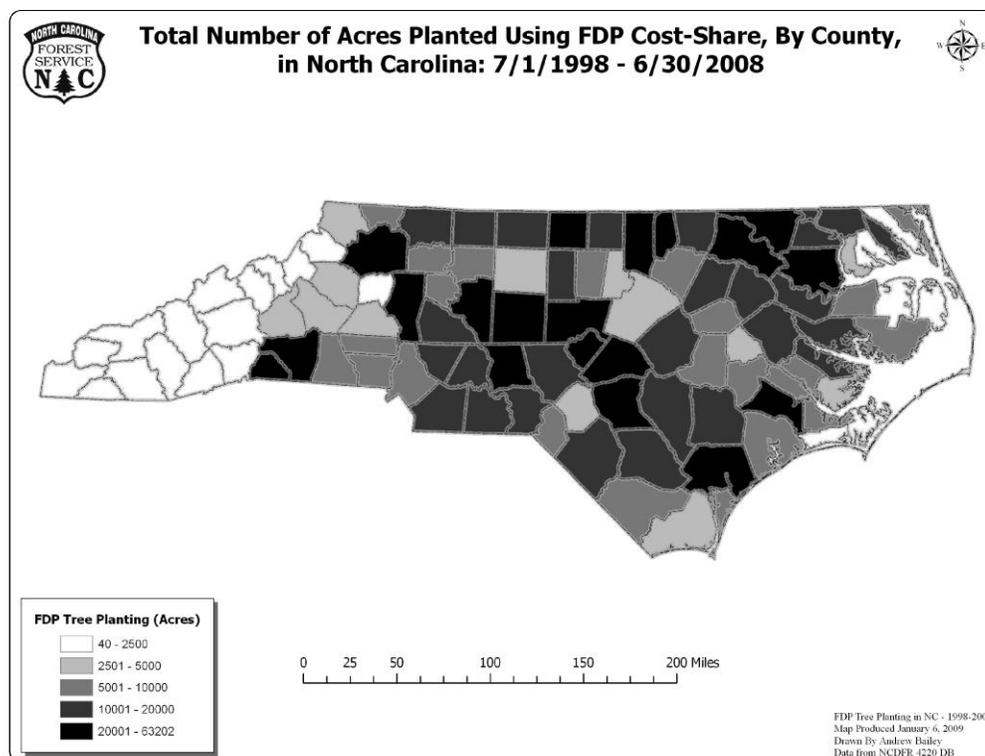


Figure 10: Total Number of Acres Planted Using FDP Cost-Share, by County, in North Carolina (1998-2008)

¹³ Refer to Appendix M-“*Pine and Hardwood Planting in NC by Non-Industrial Private Landowners (1999-2008)*”

¹⁴ Refer to Appendix E-“*Forest Ownership in North Carolina, 2006*”

Appendix L (“Total acres planted with FDP funds, by North Carolina County, between 7/1/1998 and 6/30/2008”) has a county-by-county listing of the total number of acres planted under FDP during this ten-year period. FDP-planted forests account for a significant percentage of all the private timberland in many counties. Examples include 8.1% in Caswell County; 8.5% in Northampton County; 8.8% in Person County; and 11.8% in Montgomery County.

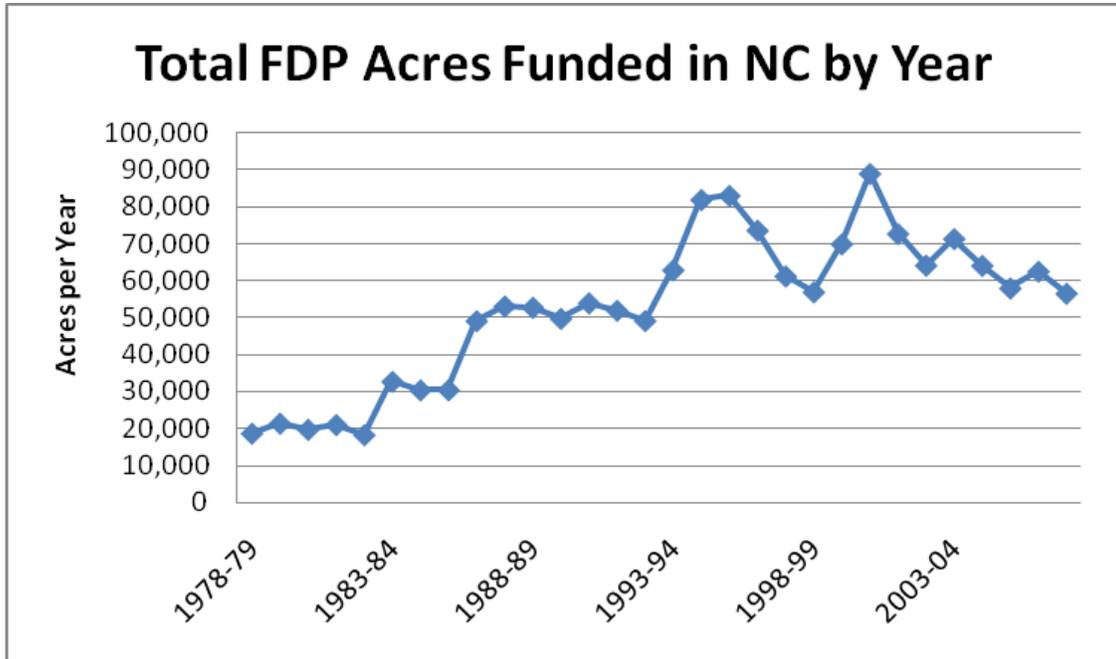


Figure 11: Total acres funded by the FDP annually

Between 1999-2008 the FDP has funded an average of 50,000+ acres annually.

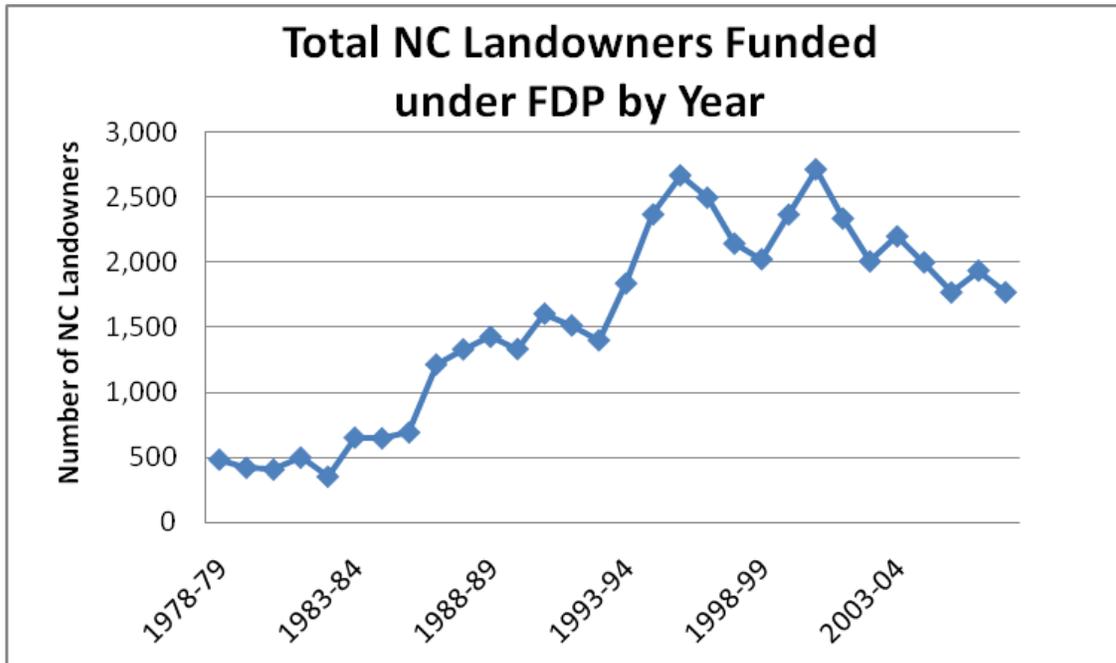


Figure 12: Total number of landowners funded under the FDP annually

An average of 1,552 landowners are funded each year under the FDP.

Spikes in the number of acres and landowners funded annually are typically associated with years following significant hurricane activity and timber loss where demand for reforestation is higher following salvage logging. Continued statewide loss of timberland acreage due to conversion for development may be influencing slight downward trend in number of acres and landowners.

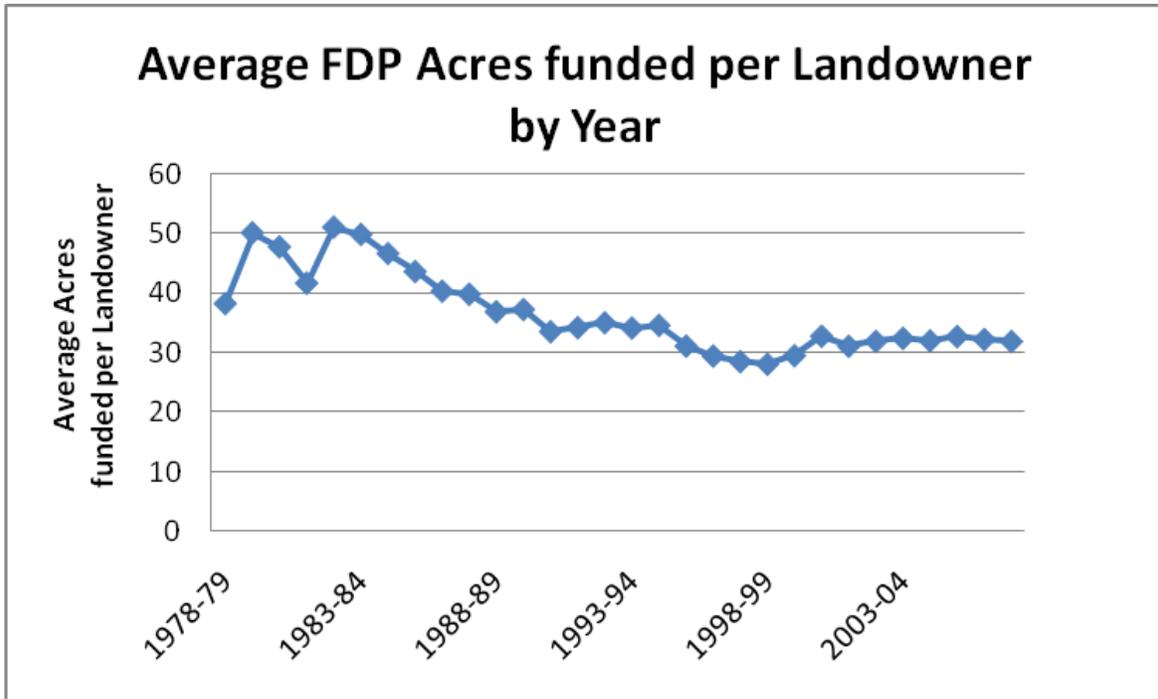


Figure 13: Average FDP acres funded per landowner annually

Between 1998-99 and 2007-08 the average FDP applicant was funded for just 32 acres of work. This relatively small number supports the claim that the FDP is a program aimed at and primarily utilized by small forest landowners.

The chart below summarizes the amount of acres reforested by state and federal cost-share programs in North Carolina since 1970. It is a visual representation of the success of the program. Many other state and federal cost share programs have come and gone due to funding limitations, but the FDP has succeeded because it is a good, simple program that works. Of the eleven programs shown below, only six remain today. Other than some limited funding for forestry projects that may be available under the emerging Environmental Quality Improvement Program (EQIP), the FDP is now the only significant forestry program available to NC landowners who are looking to reforest and grow commercial stands of timber.

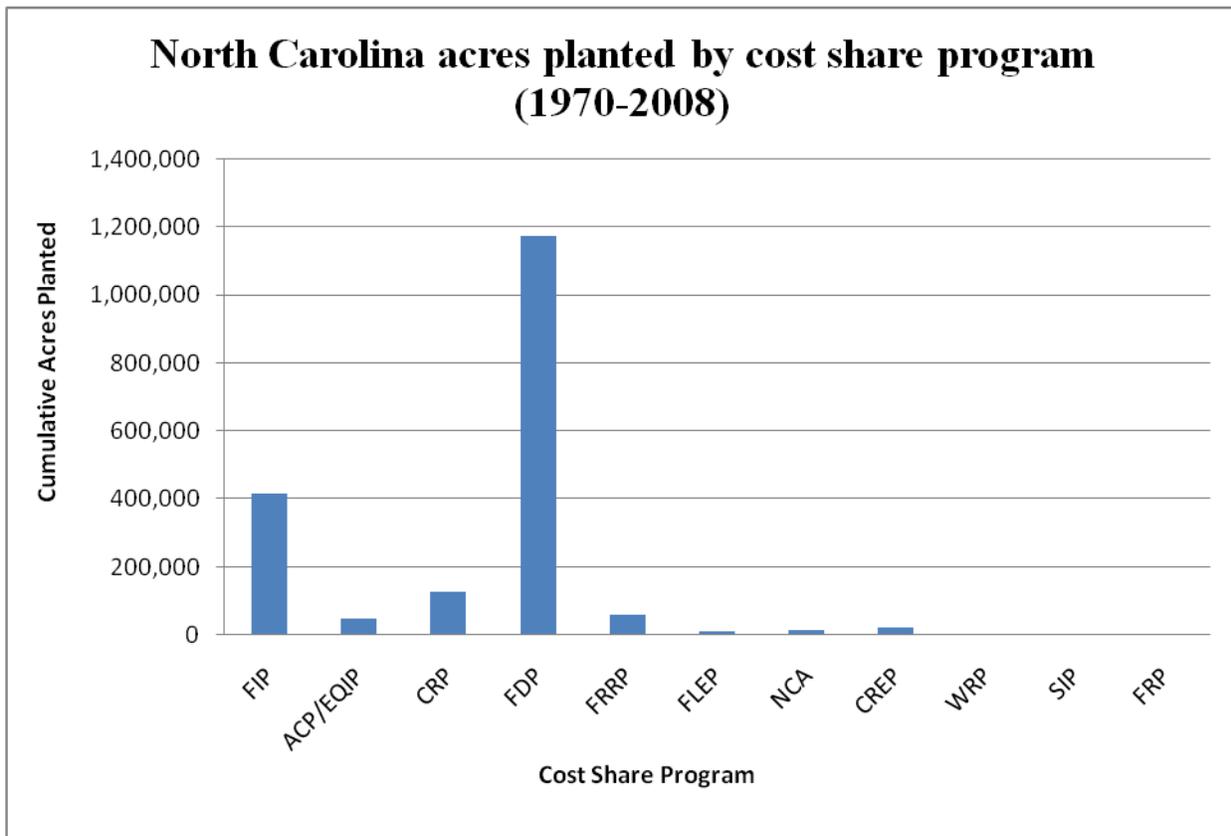


Figure 14: NC acres planted by cost share program (1970-2008)

NOTE: FIP=Forestry Incentives Program; ACP/EQIP=Agricultural Conservation Program/Environmental Quality Incentives Program; CRP=Conservation Reserve Program; FDP=Forest Development Program; FRRP=Forest Reforestation and Rehabilitation Program; FLEP=Forest Land Enhancement Program; NCA=NC Agricultural Cost-share Program; CREP=Conservation Reserve Enhancement Program; WRP=Wetland Reserves Program; SIP=Stewardship Incentives Program; FRP=Forest Recovery Program

The FDP supports the planting of many different species of trees, including longleaf pine, loblolly pine, shortleaf pine, white pine, cypress, atlantic white cedar, oak, and ash to name a few. The restoration of species in decline, such as longleaf and shortleaf pine, Atlantic white cedar and cypress, are encouraged by the FDP's slightly higher reimbursement rate of 60% for tree planting costs vs. the typical 40% given for most pine species. Their planting is encouraged where appropriate. The figures below summarize planting accomplishments for some of these species under the FDP.

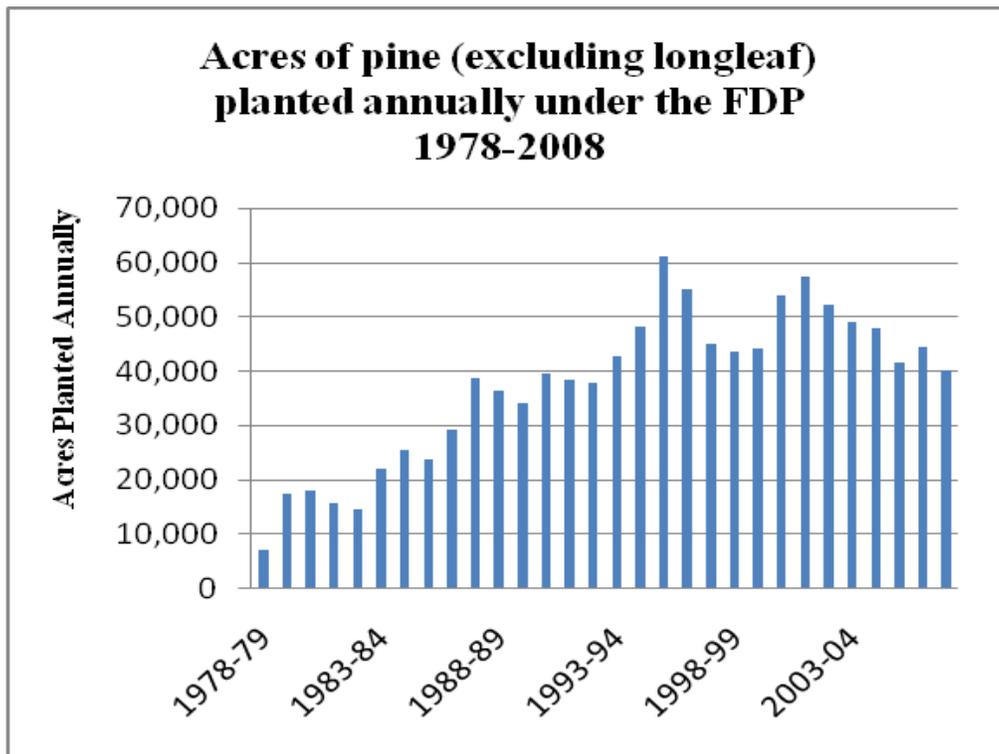


Figure 15: Acres of pine (excluding longleaf) planted annually under the FDP (1978-2008)

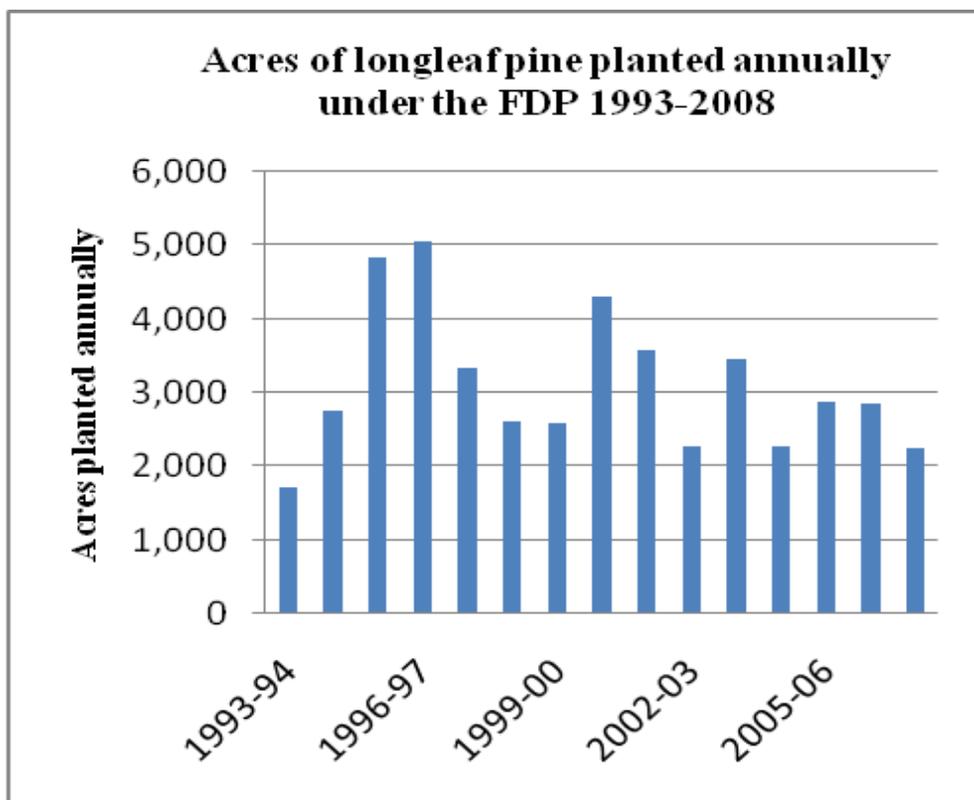


Figure 16: Acres of longleaf pine planted annually under the FDP (1978-2008)

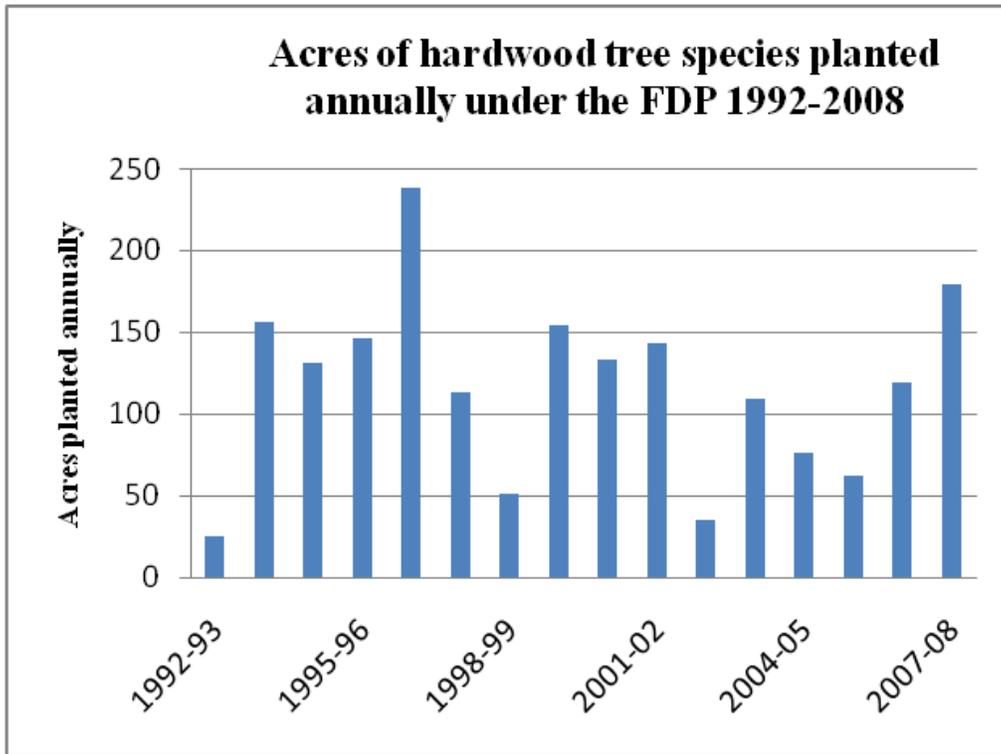


Figure 17: Acres of hardwood tree species planted annually under the FDP 1992-2008

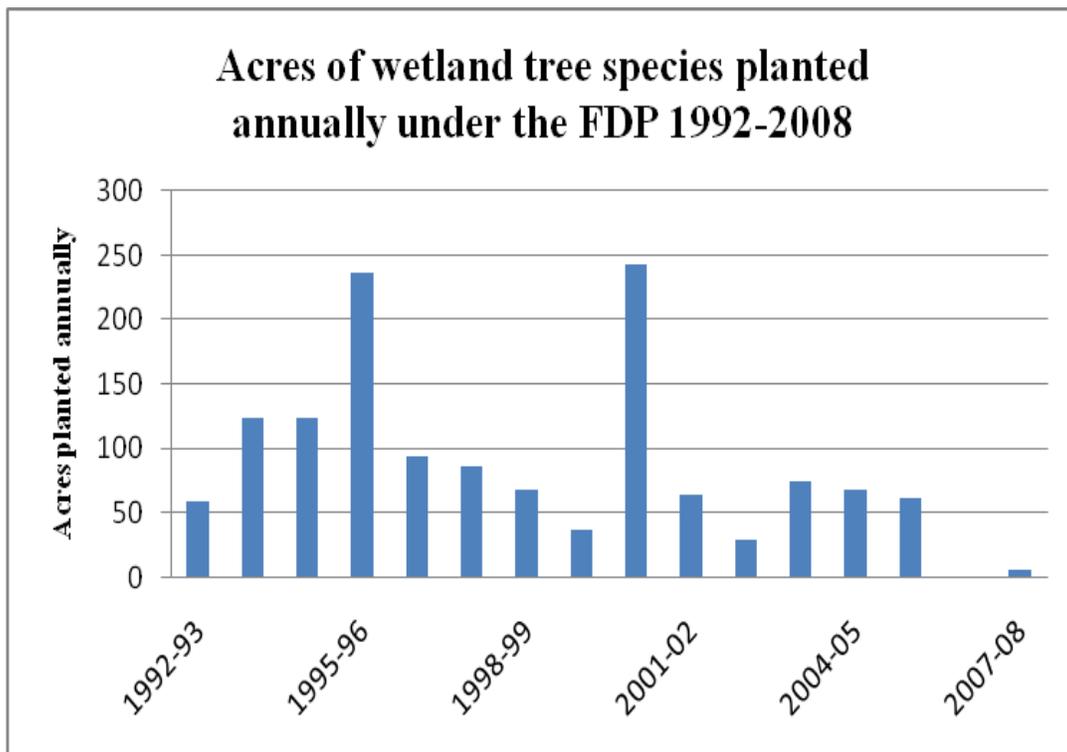


Figure 18: Acres of wetland tree species planted annually under FDP 1992-2008

The 1,176,203 acres of forestland reforested/improved under the FDP would cover an area more than twice the entire size of Wake County (533,700 acres in size). It would also cover an area nearly seven times the size of Wake County's forestland (177,300 acres).

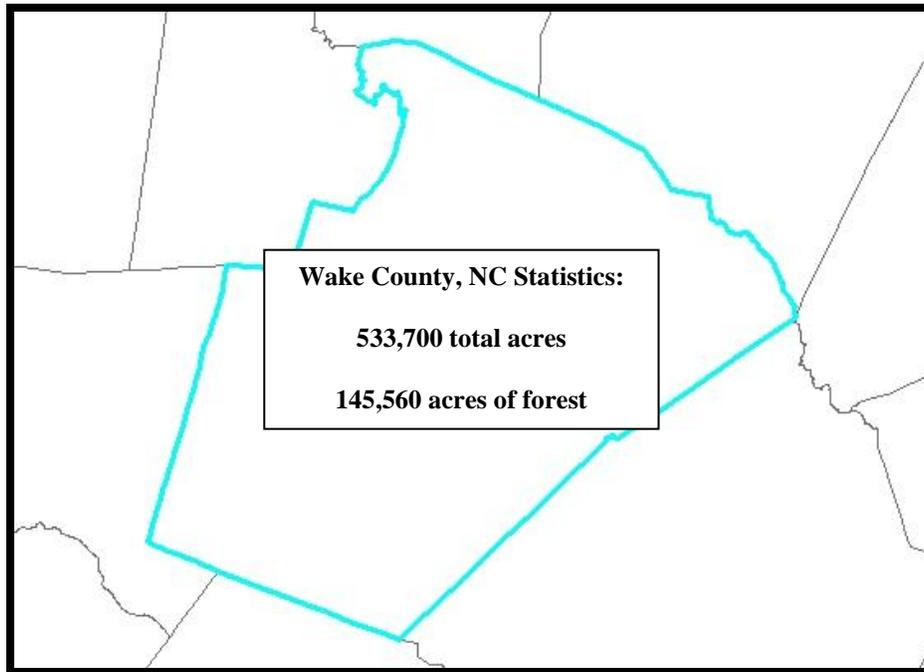


Figure 19: Wake County, NC acreage statistics (2006) as a means of comparison



Former DFR Director Stan Adams presents Raleigh resident Charles Royal with an award celebrating the one millionth acre of forestland planted under the FDP. Royal was able to reforest some of his family's land in Sampson County with assistance from the FDP in September, 2004. Appendix I - "News Release on One Millionth Acre Planted under the FDP (September, 2004)", provides the background story on this milestone.

Figure 20: The NCDFR and forest landowner celebrate millionth acre planted under the FDP

Field-level quality control measures

There are numerous fieldcheck and administrative guidelines aimed at ensuring FDP funds are utilized in a manner that is fiscally and environmentally responsible. Guidance documents that relate to these quality control measures include the DFR Policy and Procedure Manual; the Forestry Best Management Practices Manual; North Carolina's Smoke Management Guidelines; and the DFR Pocket Guide to Seedling Care and Planting Standards. Examples of quality control measures on FDP-cost shared tracts include:

- Site visits by DFR Rangers and Foresters to verify that landowners applying for FDP cost share have forestland that is appropriate for the requested assistance. This review occurs when the DFR provides the management plan and recommendation, as well as when a landowner's consulting forester makes the recommendation and submits it to the DFR for cost share approval.
- Field inspections of private contractor work by DFR Rangers and Foresters. DFR guidelines for all working carried out under the FDP must be met or the landowner will not receive FDP reimbursement. This includes onsite tree planting quality control checks where the standards and specifications outlined in the DFR Tree Planting Pocket Guide are reviewed.
- All mandatory Forest Practices Guidelines related to Water Quality (FPGs) must be in compliance and all appropriate Forestry Best Management Practices (BMPs) must be utilized prior to the landowner receiving FDP reimbursement. These ensure there are no problems with issues such as water quality blockage or degradation, hazardous fluid spills, and herbicide application.
- All Smoke Management Guidelines which protect air quality must be followed whenever site preparation or hazard reduction burning occurs with FDP cost share. These Guidelines are currently voluntary for North Carolina landowners, but when using FDP cost share they are considered mandatory. Landowners will not receive FDP reimbursement if they are not followed.
- The final completed acreage on all FDP cost shared tracts is measured by DFR staff with mapping-grade GPS units. Each staff member doing the work has completed a training program to ensure they understand the process and how to effectively use the GPS unit. GPS units meet NC State government standards and are calibrated every six months to ensure their accuracy. Acreage is measured to the nearest whole acre. This verification ensures that forest landowners and FDP funds are only being spent where satisfactory work has been completed.
- DFR County Rangers revisit those forests that have been established under the FDP one year after the tree planting work was completed. This one-year survival count is typically done in the fall when hardwood leaves have fallen off and it is easier to determine how many pine seedlings have survived. It may be done earlier in the year if the tree species planted were hardwoods or wetland species with leaves. DFR Policy mandates this be done on all tracts planted with longleaf pine, hardwoods, and wetland species. It should also be done when site or environmental conditions pose a threat to newly-established stands of trees. Examples of this might include tracts that have significant vegetative competition or during years of significant drought. On FDP cost shared tracts that don't fit these descriptions, a forest landowner can still request that the DFR perform a one-year survival count on the newly established forest. This follow-up verifies that the tree establishment effort was a success and FDP funds have been spent effectively. If tree survival has not been adequate or the planted seedlings are in jeopardy, the DFR notifies the forest landowner and discusses the need and options to re-plant or save the stand.

10-year maintenance agreement

Landowners who apply for FDP cost share funding must agree to maintain their stand of trees for at least ten years. The thinking behind this is that by the age of ten a landowner has enough money, time and effort invested in a forest that they would typically keep it in forestland from that point forward in order to reach a future harvest date. If a FDP landowner destroys their trees within this 10-year period they must pay back all the cost share funds they received on those acres impacted. With hundreds of DFR staff working throughout the state, tracts that have been planted with FDP cost share and then destroyed within the 10-year maintenance timeframe typically get noticed. These tracts are reported to the DFR Central Office staff, and then the landowner is informed in writing that they need to pay back the FDP cost share funds they originally received for those impacted acres. Appendix U “Recaptured FDP cost share funds due to non-maintenance of 10-year clause 1999-2008” illustrates the number of times the DFR is aware of FDP-planted forests being converted to another use where it violated this 10-year agreement. Based on records from 1999-2008 this only applied to a handful of tracts per year. This supports the belief that the FDP 10-year maintenance clause is similar to a temporary conservation easement in that it helps keep forestland from converting to another land use.

Have Objectives Been Achieved?

Upon reviewing the FDP objectives outlined in this document’s “Statutory Link” section and the “Performance Measures and Data” that have been highlighted, it appears the FDP is meeting the statutory goals of the program. Background information detailed in the rest of this Continuation Review Report also supports that assessment. The Forest Development Program is an effective collaboration between state/private/business partners resulting in over 50,000 acres of land reforested annually. Landowners have indicated that half of those acres would not be reforested and improved without the program’s assistance¹⁵.

In one respect, the FDP is not meeting its full potential to carry out its statutory goals. Limitations in funding result in annual backlogs of more than 600 fully-qualified forest landowners. These landowners have approved management plans and FDP applications that typically account for 25,000 acres each year¹⁶. Additional FDP funding of approximately \$2,200,000 per year would result in more cost-effective reforestation on these additional acres and increase the state’s forest productivity.

¹⁵ Refer to this report’s “Random survey of FDP landowners from 2000-08” section

¹⁶ Refer to “Backlog of FDP applicants” discussion in the “Improving Services” section of this report

Link between Funding and Societal Impact

Effect of an FDP discontinuation on NC state personal income tax revenue

Item	Description	With FDP Cost Share Funds	Without FDP Cost Share Funds
(1)	Average per acre capitalized value across all MLRA classifications for the species/stand types typically funded by FDP	\$ 701.54	\$ 701.54
(2)	Acres planted with and without FDP cost share funds	50,000	25,150
(3)	Total capitalized value for planted acres	\$ 35,077,000	\$ 17,643,731
(4)	Average per acre capitalized value across all MLRA classifications that are indicative of unmanaged, naturally-regenerated species/stand types		\$ 331.32
(5)	Increase in acres of unmanaged, naturally-regenerated timberland if FDP is discontinued		24,850
(6)	Total capitalized value for unmanaged, naturally-regenerated timberland acres		\$ 8,233,302
(7)	Total capitalized value for all acres	\$ 35,077,000	\$25,877,033
(8)	NC State personal income tax revenue (at 7%)	\$ 2,455,390	\$ 1,811,392
(9)	Lost personal state income tax revenue		\$ 643,998

Table 4: Effect of FDP discontinuation on NC state personal income tax revenue

Managed forests are more productive and will produce more high value timber products in a shorter amount of time than an unmanaged, naturally-regenerated forest. In North Carolina, when a landowner harvests timber, he is responsible for paying a personal income tax on the value of the harvested timber. Tax revenues are directly proportional to the volume and quality of the timber products produced as higher quality timber products have greater worth. If the FDP program was discontinued, some portion of the state's timberland acreage would stop being managed and would return to an unmanaged, naturally-regenerated condition that would generate less tax revenues due to decreased volumes and lower quality timber products.

An analysis was made to quantify the effect on tax revenues should the Forest Development Program be discontinued. The table of Forestry Net Present Values (pp. 29-30) in the 2009 Use-Value Manual for Agricultural, Horticultural, and Forest Land estimates the annualized NPV (net present value) for various species/stand types in each of the five Major Land Resource Areas (MLRAs) that exist in North Carolina. Using these values, we compensated for the different rotation lengths by calculating the soil expectation value (SEV) using a 4 percent discount rate. This rate is consistent with the rate used in the Use-Value manual for forestry. Soil expectation value is the capitalized value of a perpetual series of rotations and represents the maximum return from the land for forestry under the conditions presented in the Use-value manual for each species/stand type.

Species/stand types consistent with FDP projects (planted stands) were selected and multiplication factors were calculated to compensate for the distribution of site index and timberland acreage in each MLRA for each species/stand type. Species/stand types indicative of unmanaged, naturally-regenerated stands were also selected and compensation factors for the distribution of site index and timberland acreage in each MLRA for each species/stand type were also calculated. County level, forest inventory and analysis (FIA) data was used for this purpose.

Multiplying the capitalized value for each species/stand type by the site index and timberland distribution factors generated an average capitalized value for the entire state for both planted and unmanaged, naturally-regenerated stand types. For planted stands, the average capitalized value across the state is \$701.54 per acre. For unmanaged, naturally-regenerated stands, the average capitalized value across the state is \$331.32 per acre.

The results of the FDP Tree Planting Survey indicate that if the Forest Development Program was discontinued and FDP cost share funds were not available, slightly more than 50% of the acreage planted from 2000-2008 would have been planted anyway. The remaining 49.7% of the acreage would not have been planted and presumably, would have returned to an unmanaged, naturally-regenerated status. Applying these percentages to the approximately 50,000 acres that are currently planted each year with FDP funds would result in about 25,150 acres being planted and 24,850 acres returning to an unmanaged, naturally-regenerated condition if the Forest Development Program was discontinued.

Multiplying the appropriate average capitalized value for planted stands (\$701.54 per acre) and unmanaged, naturally-regenerated stands (\$331.32 per acre) by the number of acres that would be planted (50,000 acres with cost share; 25,150 acres without cost share) or returned to unmanaged, naturally-regenerated conditions (24,850 acres) without cost share; then adding the values calculated without cost share, results in a total capitalized value of \$35.1 million dollars for acreage planted with cost share funds and \$25.9 million for all forested acreages (planted and unmanaged, naturally-regenerated) without cost share. At a tax rate of 7 percent, the 50,000 acres planted each year under the Forest Development Program would generate \$2.5 million dollars of personal property tax for the state of North Carolina. The 50,000 acres established each year if the FDP program discontinued (25,150 acres planted; 24,850 acres of unmanaged, naturally-regenerated) would generate about \$1.8 million dollars in personal property tax revenues for the state. The net result is a loss of \$644,000 in personal property tax revenues each year, if the FDP program is discontinued. By investing \$589,500 of appropriated funds each year in the FDP program, North Carolina receives nearly \$644,000 in additional tax revenues annually. Should the Forest Development Program be discontinued, tax revenues would decrease by about \$644,000 and the State would have a net loss of about \$54,500. The personal income tax revenue created by the FDP's accomplishments more than pays for the appropriated funding of the program.

Loss of Private Business Revenue as a Result of a FDP Discontinuation

The Forest Development Act states:

“It is the intent of the General Assembly that in implementing the program under this Article, the Secretary will cause it to be coordinated with other related programs in such a manner as to encourage the utilization of private agencies, firms and individuals furnishing services and materials needed in the application of practices included in the forest development program.”

G.S. 113A-177(c)

When landowners apply for FDP cost-share funds, the vast majority of on-the-ground work that is to be carried out is done so by private site preparation contractors and tree planting crews. If FDP cost-share funds are reduced and the total number of landowners signing up for such work decreases, these private firms will see a direct reduction in private business revenue.

From 1998-2008, the average number of acres planted annually under FDP was 50,547¹⁷. During this period the FDP paid out an average of \$2,543,125 per year. This typically represented about 40% of the cost of the work done. If the other 60% of the bills (the part the landowners paid out-of-pocket) was added, one could assume the average total cost of the annual work carried out under FDP was approximately \$6,357,813. If the FDP was discontinued, landowners have indicated that nearly 50% of all the tree planting efforts carried out under the FDP would not occur. 50% of \$6,357,813 equals \$3,178,907 and represents the expected loss of business to contractors specializing in tree establishment services.

Indirect economic benefits from forests

Many people do not fully understand or fully value all of the indirect benefits from forests. Reforestation under the FDP is a critical first step in maintaining North Carolina's timberland and the benefits that come from it. Although this report will not devote much time to the subject, it is important to mention that the indirect benefits from forestland have been studied and are significant.

“Multipliers for industrial output, employment, value added, regional income, and personal income indicate that forest-based industries have substantial indirect effects in the North Carolina economy...up to two to three times the direct impact, depending on the sector and economic measure.”

(Aruna, Cabbage, & Hamilton, 1998)

When considering the direct economic impacts of the forest industry outlined in Appendix P (“Forest Products Industry Emerges as North Carolina's Largest Manufacturing Industry”), a multiplication factor of two to three times these values is considerable.

Program Justification

Rationale for Recommended Funding Level

The information contained in the report makes the case that the FDP is an effective program that should continue to be funded. Over 50,000 acres each year are reforested under the FDP, and landowners have indicated this number will drop by half if FDP cost share assistance is not available¹⁸.

Forest establishment and improvement work carried out under the FDP increase forest productivity, timber harvest income and state personal income tax revenue collected by the state. The economic analysis outlined in this report provides data showing the increase in personal income tax collected by the state more than offsets the typical \$589,500 of appropriated funding typically devoted to the program¹⁹. This is only one measure of the

¹⁷ Refer to Appendix G-“North Carolina Acres Planted by Cost-Share Program, 1970-2008”

¹⁸ Refer to the “Random survey of FDP landowners from 2000-08” discussion in the “Consequences of discontinued funding” section of this report.

¹⁹ Refer to the “Effect of an FDP discontinuation on NC state personal income tax revenue” discussion in this report's “Link between Funding and Societal Impact” section.

economic benefit generated by the FDP. Additional economic measures, along with societal benefits and indirect multipliers, portray a program where appropriated monies effectively leverage other sources of funding and result in tremendous benefit to the State.

Demand for FDP cost share assistance is currently greater than the program can handle due to funding limitations. An additional \$2,200,000 dollars would be needed annually to more closely meet the public demand for reforestation assistance. The DFR, Department of Environment and Natural Resources (DENR) and the North Carolina Governor's budget have all recommended increased FDP funding in the past. This is largely based on the 600+ fully-qualified forest landowners who must be placed on 1-2 year waiting lists for FDP funding each year²⁰. This backlog impacts over 25,000 acres per year, resulting in higher site preparation costs and decreases in forest productivity.

It is also worth noting that demand for forest improvement practices²¹ that were added to the FDP in 2006 is expected to significantly increase. These practices have not been promoted in the last three years due to the limited funds in the FDP and the backlog of fully-qualified landowner applications that already develops annually.

Consequences of Discontinued Funding

This report's "Link between funding and societal impact" section goes into detail on how the work carried out under the FDP impacts North Carolina society and the financial consequences that would stem from a discontinuation in FDP funding. FDP users have indicated that a loss of FDP cost share assistance would result in a 50% reduction of the acreage currently planted under the program. This loss has been calculated at approximately 25,000 acres annually. This would equate to a net loss to the State in terms of dollars taken in vs. appropriated, as well as an estimated loss of over \$3,000,000 worth of business to forest establishment and improvement contractors annually.

Due to time constraints and the difficulty in fully quantifying the financial value of forest-related ecosystem services such as watershed protection and wildlife habitat, all of the possible effects of a FDP discontinuation have not been evaluated or highlighted. There should be, however, a fundamental understanding that 25,000+ fewer acres of planted forestland each year is not a positive thing.

Impact of discontinued state appropriations on the FDP

Section § 113A-192 (c) of the Primary Processor Act specifies that timber assessments collected under the Act shall be suspended in any fiscal year in which the General Assembly fails to make general fund appropriations to the FDP²². This language was provided to emphasize the partnership aspect of this program between the State and forest industry. If the State discontinues appropriations to the FDP, the program would in effect cease to operate.

²⁰ Refer to "Backlog of FDP applicants" discussion in the "Improving Services" section of this report

²¹ Refer to Appendix D-"15A NCAC 09C .0903 Approved Practices (Amendment to the FDP Effective Nov. 1, 2006)"; examples of practices include understory release; release of seedlings; cull-tree removal; crop-tree crown release; non-commercial thinning; prescribed burning; and forest fertilization.

²² Refer to Appendix B-"Primary Forest Product Assessment Act (1977)"

If it was decided that the FDP would continue to function with no state appropriations and only the current level of timber assessments, it would require legislative action to address Section § 113A-192 (c) of the Primary Processor Act. If this was implemented and the FDP continued to operate with \$589,500 less per year (which has been the typical level of state appropriated funding), planted acreage would decrease by approximately 13,000 acres annually. This was estimated by taking into account that state appropriations typically represent 25% of FDP funding, and the assumption could be made that a funding loss of 25% might lead to a corresponding 25% reduction in planted acreage. Noting the ten-year average of 52,000+ acres planted annually, this 25% reduction would mean that reforestation in North Carolina would drop by approximately 13,000 acres per year. This scenario would not precipitate the need to reduce staffing levels of DFR field personnel or the two positions funded directly with FDP monies. If this scenario occurred, the list of backlogged landowners²³ and planting projects that are not funded or implemented will continue to grow. This will result in losses to forest productivity as well as reductions in timber harvest profits and state income tax revenues.

Another scenario is that all State appropriations to the FDP are eliminated, the decision is made to try to legally enable the FDP to continue operating, and an attempt to raise the timber assessment rate occurs. The resulting political pressure from a number of influential groups could jeopardize the entire existence of the FDP program. This last point must be comprehended prior to any budgetary decisions being made. Impacts on planted acreage, staffing level needs, etc. from such a timber assessment rate increase are difficult to determine without knowing the specific details of such a scenario.

Impact of a FDP discontinuation on numbers of landowners asking for assistance

The FDP is often DFR's primary "gateway" to working with forest landowners on BMPs, forest management plans, forest stewardship, etc. The FDP Tree Planting Survey²⁴ results indicate that the absence of FDP cost share assistance would mean nearly half of the FDP users would not reforest their property. A reasonable assumption can be made that the majority of these landowners would not contact the DFR at all for assistance. The FDP program typically signs up 1,500 forest landowners each year, so the expected reduction in landowner requests would be 750 per year. This reduction in landowners reached would lead to a decreased level of statewide forest stewardship, forest productivity and other "ecosystem services-type" benefits to society.

Impact of a FDP discontinuation on staffing and fieldwork

As of 2009, annual administrative costs are paid out of the FDP to cover 2 full-time employees at the Department of Revenue and the equivalent of 1.75 full-time employees at the DFR²⁵. A discontinuation of the FDP would directly impact these four positions. A determination would have to be made on whether or not to retain these employees and their positions if the FDP was discontinued. If they were to remain State employees, funding for their positions would have to be identified and come from another source.

²³ Refer to "Backlog of FDP applicants" discussion in the *Improving Services* section of *Recommendations to Improve Efficiency and Effectiveness*

²⁴ Refer to "Random survey of FDP landowners from 2000-08" discussion located in the "Consequences of Discontinued Funding" section of this report

²⁵ Refer to the "Resource allocation" section of this report

There is a discussion outlined earlier in this report²⁶ describing how DFR field staff would be impacted by a discontinuation of the FDP. Work and staffing levels for these Ranger and Forester positions would likely remain the same since other types of requests (water quality inspections; insect and disease inquiries; environmental education outreach programs; etc.) would “fill the hole” created by a FDP discontinuation. Most of these positions are also tasked with wildfire control and incident response duties, which reinforces that their staffing levels would still be required. There would be a reduction in landowner contacts and reforestation requests if the FDP were discontinued, but their time would be occupied by the other aspects of their job.

Would as many landowners reforest if FDP cost share was discontinued?

“Although one may argue about the social efficiency of states funding reforestation on private property, in terms of increased forest productivity on nonindustrial lands, the programs are effective. Acres reforested each year increase when private landowners are provided direct economic assistance. Where costs and benefits have been compared, state cost-share programs have been found to be economically efficient. Virginia’s program was found to have a benefit-cost ratio of about 3.5 at 6% interest rate (Flick and Horton, 1981). Cost-share programs were argued not to result in capital substitution (government-induced investment replacing autonomous investment) by de Steiguer (1984). (Bullard, 1988)

De Steiguer examined forest landowner utilization of cost share funds and stated:

“Importantly, the study provided evidence that government cost-share payments have no significant effect on the level of autonomous reforestation investment. A statistically significant negative relationship between these two variables would have lent credibility to the capital substitution argument, that is, the presence of government subsidies has simply replaced autonomous investment. Conversely, a significant positive relationship would have suggested some complementary effect. This could have been attributed to the possible fact that landowners operating under cost-share agreements may decide to reforest a portion of their tract at their own expense if no funds are available. At any rate, suffice it to say that, capital substitution, as defined here, does not appear to be a valid criticism of these programs.” (de Steiguer, 1984)

*“The weight of the evidence from the literature on investment behavior suggests that cost sharing and the reforestation tax credit and amortization **are effective** in stimulating landowner investments. In this regard, “The South’s Fourth Forest” states, “if growth in income and employment in the South’s forest industries is to be sustained, action must be taken to increase investments in those public and private programs that are effective in increasing forest productivity”. (Royer, 1988)*

Many of the landowners who utilize FDP funds indicate they were only able to reforest or improve their forestlands because there was a cost sharing program available. Many of these landowners are lower and middle-class and do not have “extra” money available to implement the necessary reforestation or forest improvement in the absence of cost share funds. It is common for landowners to want to do this type of work in

²⁶ Refer to the “FDP implementation/administrative costs absorbed by other funding sources” discussion in the “Resource allocation” section of this report

an agricultural field, pasture or on a clearcut piece of land they just purchased. In these examples there is no timber harvest income for them to draw from when paying the expenses.

Random survey of FDP landowners from 2000-08

In an effort to determine the potential impact of a FDP discontinuation, the DFR conducted a random²⁷ telephone survey in January, 2009. 462 forest landowners who had planted 14,758 acres of trees under the FDP from 2000-08 were contacted.

Survey Question #1: *"If FDP cost share assistance had not been available when you were deciding to plant trees, which of the following statements best describes how you would have reacted?"*

	Responses	Percent
Statement A: "Without the FDP cost share money, I would not have planted trees on any acreage."	205	44.4%
Statement B: "Without the FDP cost share money, I would have planted the same number of acres with trees."	174	37.7%
Statement C: "Without the FDP cost share money, I would have planted trees, but on fewer acres."	83	18.0%
Totals=	462	100.0%

Table 5: Responses to FDP Tree Planting Survey Question #1

(18% of the landowners indicated that Statement C was their response to Question #1. This meant they would have replanted some reduced number of their original acres in the absence of FDP cost share. These landowners were asked Question #2)

Survey Question #2: *You indicated that you would have planted fewer acres with trees if FDP cost share funds had not been available. In the following statement, which percentage number best describes the amount of acreage you would have planted with trees: "Without FDP cost share funds, I would have planted trees on about 20%, 40%, 60%, or 80% of the original acreage."*

	Responses	Percent
20 Percent	10	12.0%
40 Percent	37	44.6%
60 Percent	30	36.1%
80 Percent	6	7.2%
Grand Total	83	100.0%

Table 6: Responses to Tree Planting Survey question #2

²⁷ Refer to Appendix R-“Procedure for Selecting Random Landowners for the FDP Tree Planting Survey” for details on how the landowners were randomly selected in an effort to remove any potential bias. Appendix S-“FDP Tree Planting Landowner Survey and analysis” provides a breakdown of the responses and shows that responses were fairly uniform across the state.

Based on survey responses, the total acreage that would be planted by these landowners (out of the 14,758 that they planted back in 2000-08) if FDP cost share funds were not available was 7,426 acres. This represents 50.3% of the total acreage sampled. Total acreage that would not be planted if FDP cost share funds were not available was 7,332 acres. This represents 49.7% of the total acreage sampled. This indicates that a FDP discontinuation would lead to a 50% reduction in planted acreage that is currently reforested under the FDP.

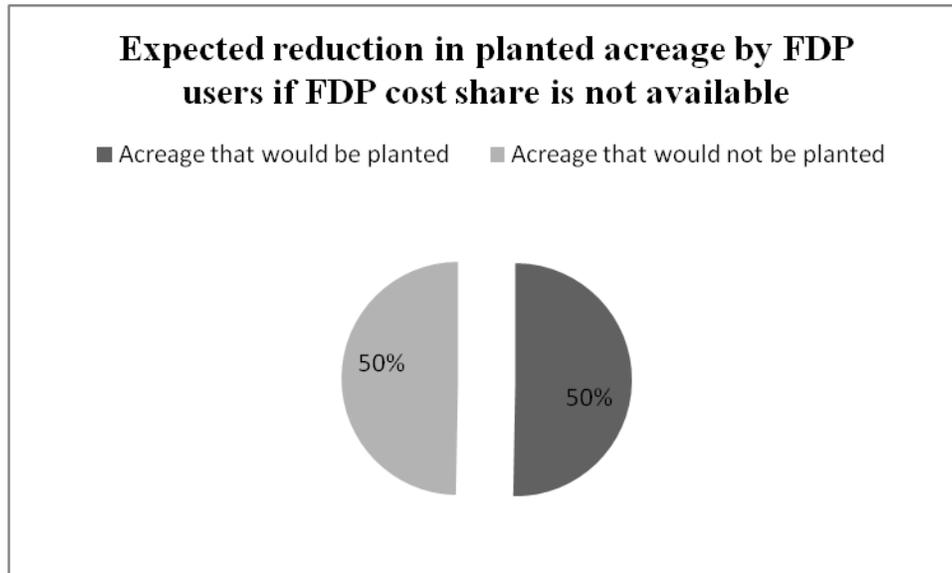


Figure 21: Expected reduction in planted acreage by FDP users if FDP cost share is not available

From 1998-2008, an average of 50,000+ acres were planted annually under the FDP. Based on landowner responses to the FDP survey described above, there would be a decrease in planted acres if the FDP was discontinued. Many of these landowners would forego the decision to conduct reforestation or forest improvement work simply because they couldn't afford it on their own. If nearly 50% of the annual FDP applicants decided they could not reforest their properties due to a lack of FDP cost share, this would on average equate to 25,000 less acres of land planted annually.

Landowner Testimonials on the Importance of FDP Funding

“The Forest Development Program has been a valuable resource to me and my family. This program provided us the option to retain family land when actively farming the land was no longer feasible. Additionally, the program enabled us to contribute to the balance and well-being of our community by preserving and expanding a very valuable but greatly diminished commodity-the trees that make a forest and forestland that provides habitat for wildlife.”

Ms. Joy Dry

Willow Spring, NC

11/25/2008

“I want to thank you for the work you have done to help me. My trees were planted in the late fall of 2006, the year of the extreme drought. With the continued interest and your devotion to the work to be done and your suggestions as to “what, when and how”, my trees are flourishing. Without your encouragement and expertise, I would have had beginner’s luck since this is my first venture forestry. The programs you have made available to me and my family are commendable. Without the cost-share that are provided and the diligence of the NC Forest Service it would have been almost impossible for us to put this together only with out-of-pocket financing.”

Kane Parsons

Fayetteville, NC

11/21/2008

“Honorable Members:

I want to call your attention to a very important program in North Carolina....the Forest Development Program. This program assisted me in establishing a stand of longleaf pine and a stand of loblolly a few years ago. I would not have accomplished this without the program. The pines are now about eight feet tall. The program has enabled me to be a good steward of the land and environment. I am aware that you have budget problems, but this is an important program and I ask that you give it your most serious consideration.”

Melvin Parker

Smithfield, NC

11/18/2008

One landowner bluntly voiced the importance of FDP funds to them:

“We have trees we have set with the help of the Forest Development Program. We have some more land that we would like to set in trees but without the cost share it will be impossible.”

John and Doloris Brotherton

Statesville, NC

1/24/2009

Numerous forest landowners who had utilized the FDP commented on the ease and simplicity of the program. The fact that there is a one-page application form, only one government agency to deal with and straightforward program requirements are appealing to landowners. This encourages forest landowners to participate and ultimately translates into more forested acres for North Carolina.

Recommendations to Improve Efficiency and Effectiveness

Improving Services

Backlog of FDP applicants

In order to fully meet its statutory commitment, the FDP not only needs continued funding, but also an increase in overall funding. There is a waiting list every year of eligible forest landowners who want to help keep North Carolina’s forests growing and productive. These landowners want to reforest and improve their lands but they are not able to be signed up and funded under the FDP due to a lack of monies. Because of this backlog, much

of this work does not get done until the following 1-3 years when cost share funds become available and their projects are funded. At that point it usually costs the landowner and State more to successfully plant a new forest due to vegetative competition that has come up during the waiting period. In the meantime, both the landowner and State have lost timber volume and economic returns due to reduced forest productivity. These fully-qualified landowners have approved management plans and processed FDP applications that outline all the necessary fieldwork.

Based on data from FY 2004-08, the average FDP waiting list was 487 landowners for site preparation/replanting work on 19,235 of acres. Approximately \$2,000,000/year would be needed to fund this backlog. There have been as many as 600 landowners backlogged for type of FDP assistance.

Waiting list for site preparation work	Backlogged landowners	Backlogged acres	Amount needed to cost share projects
FY 2004	414	17,716	\$1,594,629
FY 2005	447	17,334	\$1,867,474
FY 2006	478	17,626	\$1,878,190
FY 2007	563	22,252	\$2,210,681
FY 2008	535	21,245	\$1,999,440
Total FY 2004-08	2,437	96,173	\$9,550,414
Average FY 2004-08	487	19,235	\$1,910,083

Table 7: Backlog of fully-qualified landowners seeking FDP cost share for site preparation 2004-08

Another waiting list of fully-qualified landowners who requested planting assistance (with no need for site preparation funding) exists and averages 128 landowners per year. This typically represents 5,000+ acres worth of reforestation. An additional \$200,000 per year would be needed to fully cost share these “Plant-Only” requests.

In the past the DFR, DENR and Governor’s budget have all recommended an increase in appropriated FDP funding in order to meet this demand and help keep our state forested. The scarcity of additional reforestation cost-share programs that allow effective timber production will continue to increase demand for FDP assistance.

Recommended action item: The NC Legislature should vote to expand FDP funding by at least \$2,200,000 annually.

FDP database conversion

The FDP database is currently housed in a mainframe system. There are a limited number of reports that can be run, which makes it difficult to query and review program components. Most reports are run by another State division and have to be physically delivered to the DFR. When these reports are created they are printed out on large amounts of paper rather than delivered in an electronic format.

A database conversion is currently underway that will move the FDP data into an Access database. This move, when completed, will allow easier and more effective management of the FDP data. The cost of this improvement will be approximately 1-2 months worth of work by a database programmer. Implementation of

the converted database will hopefully be completed by spring of 2009. A longer term improvement to this database will be to make it web-based for easier access by field personnel.

Recommended action item: DFR staff will continue to proceed with FDP database conversion.

FDP minimum acreage threshold

The Forest Development Act § 113A-181 (b) states:

“The maximum amount of forest development cost sharing funds allowed to any landowner in one fiscal year will be the amount required to complete all approved practices on 100 acres of land at the prevailing cost sharing rate established under G.S. 113A-181(a).

A minimum amount of acreage that a landowner needs to qualify for the program is not specified. Since the inception of the FDP this minimum threshold has been one acre.

There has been discussion of whether or not to raise the minimum acreage threshold in order to qualify for FDP funding eligibility. A concern by some is that personnel time and efforts are being consumed by tracts of land that are very small and potentially low in benefit. One concern is that many parcels of forestland in urbanizing areas are small in acreage. If the minimum acreage threshold for the FDP is raised, some of these small urban forest tracts may not be able to qualify for cost share funding.

Prior to making a decision on this matter, the DFR will wait until the FDP database conversion to an Access system is complete. At that point it will be easier to analyze historic FDP data and determine how much of a benefit this proposed modification would create.

Recommended action item: DFR conduct study on minimum acreage threshold at earliest opportunity.

Frequency of FDP application approval

FDP applications are currently processed by DFR Central Office staff at the end of each month. During periods of frequent activity (ex. during the winter when many planting requests are being submitted) the frequency of application approvals may need to be increased to twice per month. This could provide field staff, forest landowners and contractors with critical information on a timelier basis.

Recommended action item: DFR should begin processing FDP applications twice a month when application volumes are heavy.

Reducing Costs and Duplication

Measurement of acres on FDP cost shared tracts

The majority of tracts cost shared under the FDP are measured by County Rangers on foot with mapping grade GPS units. This is to ensure accurate measurement of the work done so FDP funds are only used on acres that have been completed. This is an excellent quality control measure, but it does come at a cost due to personnel time, gas spent driving to the tracts, etc.

A number of private consulting foresters and contractors have recommended that the DFR accept their acreage determinations when processing FDP payments. This would certainly reduce the DFR's costs, but there could

be problems with this proposal. A conflict of financial interest might jeopardize the accuracy of the measurements. Another challenge to this proposal is that these private consulting foresters and contractors would presumably still need to utilize expensive mapping-grade GPS units; undergo the same standards of GPS training that DFR field staff currently receive; and be held to the same State standards that the DFR must adhere to. The training and quality control work that the DFR would have to assume for private individuals looking to provide such measurements would be an added cost that must be considered when assessing this idea. The DFR does not believe this proposal to be in the best interest of the State or the landowner.

DFR Policy and Procedure outlines instances where other methods can be used to determine this acreage. In certain cases aerial imagery can be used. These other methods will not replace the use of GPS measurements on most tracts, but utilizing them when appropriate could represent a cost reduction and time savings. Field staff will be reminded of these alternative methods and will be encouraged to utilize them whenever possible.

Recommended action item: DFR staff will encourage field personnel to utilize all allowed tract measurement options, particularly those that save time and money.

FDP database conversion

The FDP database conversion from a mainframe system to an Access database has already been discussed. This will decrease the need to print out large numbers of extensive paper reports. Ultimately, the FDP database will be updated and moved to the IBEAM system. Web-based administration will continue to reduce paperwork and staff time per application.

Recommended action item: DFR staff will continue to proceed with FDP database conversion.

Recommended Statutory/Budgetary/Administrative Changes

Multiple Processing Facilities

Current Department of Revenue assessment reporting procedures allow companies that have multiple primary processing facilities to aggregate the volumes of primary products that were processed by all of their facilities before computing and reporting any assessments owed.

In order to more accurately determine whether every responsible facility is reporting and paying the primary forest products assessment, the Division of Forest Resources recommends the Department of Revenue create a new worksheet as part of the assessment form that breaks-out and identifies each primary processing facility under single ownership, then aggregates the results which are reported on the main part of the return. Companies with multiple processing facilities would be required to complete and return the worksheet with their return, or submit a separate return for each facility.

The Department of Revenue supports the Division of Forest Resources' position on this issue and is reviewing its form to determine if it can develop a worksheet that will allow a processor to report multiple facilities on the same report, with aggregate results reflected on Page 1 and to determine if processors can be allowed the option of using one form for all facilities or separate forms for each facility.

Recommended action item: DFR staff will cooperate with DoR staff to improve this assessment form.

Transparency of Information Shared between Agencies

North Carolina GS § 105-259 (Disclosure Law) prohibits the disclosure of certain financial information to any other person not provided for in GS § 105-259 (b). Insofar as the Department of Environment and Natural

Resources (DENR) or the Division of Forest Resources are not listed in GS § 105-259 (b), the Department of Revenue is restricted from reporting individual or regionally aggregated information regarding primary processors to the DENR or DFR.

North Carolina GS § 113A-193 (b) prescribes several duties for the Secretary of Environment and Natural Resources. Among these are:

- Provide to the Secretary, Department of Revenue, lists of processors subject to the assessment.
- Establish in November prior to those session in which the General Assembly considers the State budget, the estimated total assessment that will be collectible in the next budget period and so inform the Advisory Budget Commission and the General Assembly.
- By January 15 of each odd numbered year, report to the General Assembly on the number of acres reforested, type of owners assisted, geographic distribution of funds, the amount of funds encumbered and other matters. The report shall include the information by forestry district and statewide and shall be for the two fiscal years prior to the date of the report.

DFR is encumbered from performing its duties as spelled out in GS § 113A-193 (b) and recommends that language be added to GS § 105-259 (b) that would allow the Department of Revenue to share financial information with the Division of Forest Resources.

The Department of Revenue agrees with and supports the Division of Forest Resource's position on this issue and will assist DFR in submitting a recommendation for legislative change to GS § 105-259 (b) that allows pertinent financial information to be shared. This will improve communication between the two agencies and result in more efficient program implementation. This includes ensuring that all primary processors of timber products are paying the correct assessment amounts owed.

This proposed change will not affect the legal language in the Forest Development Act or Primary Processor Statutes.

Recommended action item: DFR staff will work with the DoR to pursue the recommended changes to GS § 105-259 (b).

External Factors

Policy Issues for the General Assembly

Biomass and Biofuels

North Carolina's biomass and biofuels capacity continues to be an emerging issue. In order to meet the future demands for woody material, forests need to be planted and more actively managed now. Reforestation accomplished under the FDP will directly support this growing capability and positively support the State's future Energy Plan portfolio.

Climate change

The retention and increase of forestland is seen as an affordable solution to sequester carbon and mitigate climate change impacts. In May of 2007 the “Agriculture, Forestry and Waste Management Technical Work Group” of NC’s Climate Action Plan Advisory Group recommended that FDP funding increase so more fields could be planted back with trees.

(refer to <http://www.ncclimatechange.us/ewebeditpro/items/O120F11667.pdf>)

It is recommended that the General Assembly consider the benefits of the FDP and seek to tie funding from new sources (ex. “carbon/climate change” programs).

Other Relevant Information

Wood chips and the Primary Processor Act

Starting with the definition of primary forest product in GS § 113A-191 (1) and followed by an interpretation by the Department of Revenue, wood chips produced from whole trees (a primary forest product) are considered to be a secondary forest product. The language and interpretation fail to differentiate between wood chips produced by logging contractors in the woods (in-woods chips) and chips produced by other processors such as sawmills, pulp and paper mills and chip mills. As North Carolina biomass and biofuels markets expand, the production and utilization of wood chips will increase. The Division of Forest Resources recognizes the need to study this emerging issue and how it relates to the Primary Processor Act. At this time the DFR is not ready to propose statutory changes to address this issue, but the Division will continue to work with the Department of Revenue and its Forestry Community partners to determine the best way to proceed.

Conclusions

- The Forest Development Program's track record is thirty years long and indicates a program that is streamlined, well-liked by the citizens of North Carolina and more than fully-utilized. It has resulted in over 1,176,203 acres being planted, with an average of 50,000+ acres planted each in of the last ten years.
- Many landowners who have participated in the FDP indicated they were only able to carry out the implemented reforestation and forest improvement work with its assistance. Peer-reviewed literature was cited that concludes cost share assistance is an incentive to forest landowners to carry out reforestation work that they would normally not have done. A random survey of 462 FDP users from 2000-08 indicated that 45% of them would not have planted trees without the FDP assistance. 18% of them would have planted a reduced number of acres (most indicated they would have only planted approximately half of the acreage). When these statistics were applied to the ten-year average of 50,000+ acres of trees planted annually under the FDP, it translates into approximately 25,000 less acres of trees planted annually if the FDP is discontinued.
- Direct administrative costs for the FDP are low. This includes funding the equivalent of 2 full-time employees at the Department of Revenue (DoR), as well as the equivalent of 1.75 full-time employees at the Division of Forest Resources (DFR). All of the remaining FDP funds go toward landowner cost share funding.
- Improved dialogue and sharing of primary processor and assessment information between the DFR and DoR must occur. This Continuation Review process encouraged a face-to-face meeting between the two agencies, and it appears as though the sharing of ideas and future modifications to the North Carolina GS § 105-259 will improve implementation of the Primary Processor Act.
- The Continuation Review highlighted the need for another improvement to the FDP. The conversion of the FDP's database from a mainframe system to a more user-friendly Access database is currently being undertaken. This will help to reduce a significant amount of paperwork (past reports had to be printed by another department and physically brought to the DFR), and even more importantly make it easier to conduct queries and future program reviews.
- The Legislature should consider the annual waiting list of 600+ fully-qualified FDP applicants who cannot be funded each year. These citizens have approved management plans and FDP applications but are not able to carry out their forest management work due to the lack of FDP funds. The DFR, Department of Environment and Natural Resources (DENR) and the North Carolina Governor's budget have all recommended increased FDP funding in the past to meet this demand from the public. The Legislature should expand annual FDP funding with the \$2,200,000 it would take to meet this need and opportunity.
- The discontinuation of the FDP would result in significant economic loss. When landowners apply for FDP cost-share funds, the vast majority of on-the-ground work is performed by private site preparation contractors and tree planting crews. If the FDP was discontinued, landowners have indicated that nearly 50% of all tree planting efforts currently carried out under the FDP would not occur. This reduction in acreage to be planted would translate into an estimated loss of \$3,178,907 worth of business to contractors specializing in tree establishment services.

Table of Figures

Figure 1: Loss of North Carolina timberland 1974-2002.....	8
Figure 2: Area of NC forestland by forest-type group (2002 US Forest Service FIA data)	8
Figure 3: Origination of funds to pay for planting one acre of loblolly pine under the FDP (no mechanical site prep required).....	12
Figure 4: Origination of funds to pay for planting one acre of loblolly pine under the FDP (mechanical site prep required)	13
Figure 5: Origination of funds to pay for planting one acre of longleaf pine under the FDP (site prep required)	14
Figure 6: Comparison of DFR and FDP Mission Statements	17
Figure 7: FDP funding breakdown (1978-2008).....	19
Figure 8: FDP State Appropriations (1978-2008).....	19
Figure 9: FDP direct administrative cost per year for the DFR and DoR (2003-08).....	20
Figure 10: Total Number of Acres Planted Using FDP Cost-Share, by County, in North Carolina (1998-2008).....	23
Figure 11: Total acres funded by the FDP annually	24
Figure 12: Total number of landowners funded under the FDP annually	24
Figure 13: Average FDP acres funded per landowner annually.....	25
Figure 14: NC acres planted by cost share program (1970-2008)	26
Figure 15: Acres of pine (excluding longleaf) planted annually under the FDP (1978-2008).....	27
Figure 16: Acres of longleaf pine planted annually under the FDP (1978-2008).....	27
Figure 17: Acres of hardwood tree species planted annually under the FDP 1992-2008	28
Figure 18: Acres of wetland tree species planted annually under FDP 1992-2008	28
Figure 19: Wake County, NC acreage statistics (2006) as a means of comparison.....	29
Figure 20: The NCDFR and forest landowner celebrate millionth acre planted under the FDP	29
Figure 21: Expected reduction in planted acreage by FDP users if FDP cost share is not available.....	39

Table 1: FDP Budget Figures (2003-08)..... 18

Table 2: Direct FDP administrative costs to the DFR and DoR (2003-08) 20

Table 3: Hours worked by DFR staff on FDP activities (2004-07) 22

Table 4: Effect of FDP discontinuation on NC state personal income tax revenue 32

Table 5: Responses to FDP Tree Planting Survey Question #1 38

Table 6: Responses to Tree Planting Survey question #2 38

Table 7: Backlog of fully-qualified landowners seeking FDP cost share for site preparation 2004-08 41

Bibliography

Aruna, P., Cabbage, F., & Hamilton, R. (1998). *Economic Impacts of Forestry in North Carolina*. Department of Forestry. Raleigh: North Carolina State University.

Brown, M. J., & New, B. (2006). *Forest Inventory and Analysis Factsheet-North Carolina 2002*.

Bullard, S. a. (1988). Structure and Funding of State-Level Forestry Cost-share Programs. *Northern Journal of Applied Forestry* , 5, 132-134.

de Steiguer, J. (1984). Impact of cost-share programs on private reforestation investment. *Forest Science* , 30 (3), 697-704.

Flick, W. a. (1981). Virginia's Reforestation of Timberlands Program: An Economic Analysis of the First Six Years. *Southern Journal of Applied Science* , 5 (4), 195-200.

Royer, J. (1988). Proceedings on the Policy and Program Conference on "The South's Fourth Forest: Alternatives for the Future". *Forestry Investment Incentives in the South: A Review of Empirical Research on Cost Sharing and the Reforestation Tax Credit and Amortization* (pp. 75-87). USDA Forest Service.

(1988). Proceedings on the Policy and Program Conference on "The South's Fourth Forest: Alternatives for the Future". *Forestry Investment Incentives in the South: A Review of Empirical Research on Cost Sharing and the Reforestation Tax Credit and Amortization* (pp. 75-87). USDA Forest Service.

Weatherford, P. R., Wigley, T. B., & Van Deusen, P. C. (2008). *Characteristics of Public Data Related to Reforestation*. National Council for Air and Stream Improvement, Inc.

Agriculture, Forestry, and Waste Management Technical Work Group. (n.d.). Retrieved from www.ncclimatechange.us: <http://www.ncclimatechange.us/ewebeditpro/items/O120F11667.pdf>

Appendix

Appendix A: Forest Development Act (1977)

Appendix B: Primary Forest Product Assessment Act (1977)

Appendix C: HB 698; NC Legislative Session 2005-An Act to Expand the Findings, the Purpose, and the Approved Practices of the Current Forest Development Act

Appendix D: 15A NCAC 09C .0903 Approved Practices (Amendment to the FDP Effective Nov. 1, 2006)

Appendix E: Forest Ownership in North Carolina, 2006

Appendix F: Total Acres/Total Landowners/Average Acres per Landowner Funded Under the Forest Development Program (1978-2008)

Appendix G: North Carolina Acres Planted by Cost-Share Program (1970-2008)

Appendix H: FDP Funding from 1978-2008 (Including Timber Assessments, State Appropriations and Interest Earned)

Appendix I: News Release on One Millionth Acre Planted Under the FDP (September, 2004)

Appendix J: Assessment Rates on Timber Products from Other States

Appendix K: Percentage of North Carolina Site Preparation, Planting, and Timber Stand Improvement Activities with FDP Funding

Appendix L: Total Acres Planted with FDP Funds, by North Carolina County, Between 7/1/98 and 6/30/08

Appendix M: Pine and Hardwood Planting in NC by Non-Industrial Private Landowners (1999-2008)

Appendix N: Acres of NC Forest by County (USFS Forest Inv. & Analysis, 2006)

Appendix O: Forest Inventory and Analysis Factsheet-North Carolina 2002 (from 2002 USFS FIA data)

Appendix P: Forest Products Industry Emerges as North Carolina's Largest Manufacturing Industry

Appendix Q: Effect of an FDP discontinuation on NC state personal income tax revenue

Appendix R: Procedure for Selecting Random Landowners for the FDP Tree Planting Survey

Appendix S: FDP Tree Planting Landowner Survey and analysis

Appendix T: North Carolina GS § 105-259 Secrecy required of officials; penalty for violation ("disclosure law")

Appendix U: Recaptured FDP cost share funds due to non-maintenance of 10-year clause 1999-2008