

The Ohio Linked Deposit Program for Silviculture

Five -Year Report (2003-2007)



**An Effective Partnership Between
The Ohio Environmental Protection Agency,
The Ohio Department of Natural Resources, and
Ohio Forestry Association Certified Master Logging Companies**

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Introduction

The Water Pollution Control Loan Fund (WPCLF) Link Deposit program for silviculture relies on an effective partnership between the Ohio Department of Natural Resources (ODNR), the Ohio Environmental Protection Agency (OEPA), and Ohio Forestry Association Master Logging Companies (OFA Master Loggers). In order to efficiently manage this new program, ODNR and OEPA entered into a memorandum of understanding (MOU) in 2003. The MOU delineated the roles and responsibilities of each agency relative to the Ohio linked deposit program for a five-year period ending December 31, 2007. The contents of this report will serve as an overview of what has been learned and accomplished during the first five years of the Ohio linked deposit partnership.

The purpose of the Ohio Linked Deposit Program for silviculture is to provide low-interest rate financing to logging contractors who wish to purchase low-impact equipment that will help protect and improve water quality in and around logging operations. Only certified master logging companies, trained in forestry best management practices (BMPs), qualify for these loans. In addition, successful loan applicants agree to file notice of intent (NOI) and Timber Harvest Plans (THP) with the local Soil and Water Conservation office, and to allow on-site inspection of their logging practices. The result is a group of trained professionals using the best equipment available, which greatly improves the control of non-point source pollution. Even though the linked deposit concept has long been used in a variety of disciplines, Ohio is the first state to develop and implement such a program for silvicultural applications.

Low-impact logging can be defined as matching the equipment to the site, using the equipment under proper conditions, and choosing equipment that results in fewer roads, fewer passes over roads, less soil compaction from each road pass, and less damage to residual trees and the forest floor. This report will reveal the numerous benefits derived from Ohio's silvicultural linked deposit program. Protection of water quality, maintaining the health of forested environments, and enhancing small business opportunities are among the variety of benefits that make this program an effective and important tool for achieving both environmental and economic goals.

This is not the first time that silviculture-based programs have proven successful in protecting the quality of water resources. New York City's water supply is being protected by improving community sewage systems and by implementing innovative agriculture and forestry programs designed to protect a working landscape of private family farms and forests in the Catskill Mountains of upstate New York. This watershed provides 90% of New York City's water supply and is now functioning as a living, breathing water filtration system. Rather

than build a 4-6 billion dollar water filtration plant, the City partnered with the state to invest 1.4 billion dollars in the New York City Watershed Agreement. The agreement includes a diverse group of programs addressing logger training, timber management workshops, and best management practices for dairy farms and woodlots. These innovative land management programs have saved New York City billions of dollars, while enabling them to meet 66 EPA water filtration avoidance criteria. In short, properly managed working forests are effective and efficient water filters.

Accomplishments and Discussion

One goal of Ohio's Silviculture Linked Deposit program is to encourage loggers to purchase low-impact logging equipment by making it more affordable through lower interest loans. The linked deposit approach is new to the forest industry, so it took some time for the business operators to understand the benefits and develop confidence in the process. After the acclimation period, the leaders of Ohio's logging industry began to embrace the program and its benefits. After five years, a total of six linked deposit loans for nine pieces of equipment have been made through two lending institutions totaling \$1,666,582. It is estimated that small business owners saved \$193,289 on the purchase of modern low-impact logging equipment. A table itemizing the loans and a list of purchased equipment is found at the end of this report.

These initial purchases have started the learning process for the loggers, and the agencies administering the program. The ancillary economic benefits of the modern low-impact logging equipment are as important as the monetary interest savings to the logger. Companies using the modernized equipment have gained competitive advantages in the industry. For example, the new equipment often allows the efficient harvesting of smaller, lower quality trees. The result is more complete utilization of the resource and improved long-term forest vitality through the timber stand improvement accomplished by removing low vigor and low quality trees.

An additional competitive advantage of using modern mechanized equipment is lower worker compensation rates. A recent Centers for Disease Control study of West Virginia logging companies indicates that use of mechanized equipment like that made available through the silviculture linked deposit program results in half the number of injury claims compared to using non-mechanized equipment. This in turn means significantly lower worker compensation insurance rates for companies using such equipment.

Another main goal of the Silvicultural Linked Deposit program is to encourage use of equipment and logging tactics that protect soil and water resources and control non-point source pollution. Site inspections show that timber harvest planning and the low-impact logging equipment work together as advertised to reduce site disturbance during timber harvests. The results of using environmentally friendly equipment and forestry BMPs include reduced soil compaction, less soil erosion, and reduction of stream sedimentation. These benefits are derived from less road building, reduced road usage during unfavorable soil conditions, and more efficient movement of logs from the forest to the truck.

The advantages of using equipment like a forwarder, rather than conventional logging equipment are many. The forwarder is able to pick up logs from the forest floor, load and carry them rather than dragging or skidding them. This results in a relatively intact duff layer and much less soil disturbance, greatly reducing the opportunity for soil movement. Soil compaction is reduced because the equipment removes limbs and cuts the tree into log lengths at the same place where the tree is cut. The tree's top is then placed on the ground, serving as a natural cushion for the equipment as it moves to the next location. Soil compaction is also lessened by the use of tracks that fit over the forwarder's wheels. These tracks dissipate the weight of the load, reducing ground pressure by almost half. With a maximum load of not less than 20 tons the ground pressure of the rear wheels with tracks is 9.76 pounds per square inch, without the tracks it would be 18.84 pounds per square inch. The health of trees remaining in the forest following the harvest also benefit from this type of equipment. These residual trees are not damaged by logs banging into them during skidding, as they would be with conventional equipment. Also, since the harvested tree is controlled by the equipment during felling, it does significantly less damage to surrounding tree crowns and trunks.

Site inspections completed for each linked deposit loan served to cement partnerships and relationships developed during the program's implementation. A Silvicultural Linked Deposit program committee was formed to serve as the site inspection team. The group included members from the Ohio EPA, ODNR Division of Forestry, Ohio State University Extension, Soil and Water Conservation Districts, lending institution representatives, and the forest industry. The team was able to collectively observe and validate benefits of the low impact silvicultural equipment purchased through the program.



Conclusions

The Ohio Silvicultural Linked Deposit program provides multiple benefits, including a win-win experience for both small business owners in the logging industry and the forest environment. In addition, the benefits to water quality are clear. It is also clear that the partnership between OEPA and ODNR Division of Forestry is a productive one. These two agencies are uniquely positioned to administer the program and are working toward similar missions of environmental protection and resource conservation. The benefits described above lead to the conclusion that the Ohio Silvicultural Linked Deposit program is a reasonable and responsible approach to achieving water quality protection and improving forest management during timber harvest operations. It appears that more mutual benefits could be accomplished through a continuation of this program.

It is hoped that program benefits could be increased through greater logger participation. Plans to better promote the program are already underway, including developing an informational brochure, direct mailings in partnership with the Ohio Logging Standards Council, designing an ODNR Division of Forestry website, and enhancing the awareness of lending institutions and equipment dealers. Other lower-cost BMP devices are also being considered for the program, such as portable bridges for stream crossings, wooden mats for log landing decks and other potentially muddy areas, and mulching machines for road rehabilitation. In addition, the State of Maine has devised a program modeled after the Ohio Silvicultural Linked Deposit Program. The State of Indiana has also called requesting information about the program, hoping to start a similar program in their state.

Often, the people directly participating in a program provide the best insights into the program's merits. Ryan Redoutey is a member the family owned and operated logging company known as Redoutey Logging. When asked about their participation in the Silvicultural Linked Deposit Program, Ryan commented "Honestly, without the program our company could not have invested in this technology so quickly. If we get another opportunity, we will likely invest in additional low-impact equipment." Ryan continued on to say " Many of the jobs we are now doing could not be economically harvested without the low-impact equipment, and conventional equipment would cause too much ground impact on the sites."

WPCLF - SILVICULTURE LINKED DEPOSIT LOANS			
Name	Equipment	Loan Amount	Loan Savings
US BANK			
Redoutey Logging	Rottne 5005 Single Grip Harvester	\$296,000.00	\$36,996.00
Team Excavating, LLC	Big John self-propelled (Prentice 180E) carrier & 2 trailers	\$131,490.00	\$11,850.00
	SUBTOTAL	\$427,490.00	\$48,846.00
FARM CREDIT SERVICES			
T & R Logging LLC	TimberPro TF 830 Forwarder 8 wheel, 20 ton capacity	\$250,212.00	\$27,601.00
Redoutey Logging	Rottne smv rapid 8 wheel forwarder w/bogie wheels & Eco over tracks	\$300,212.00	\$48,662.00
Mike Sark Farm Logging	Timbco 445EXL feller buncher, 300hp Cummins engine, 21 ft. boom	\$250,837.00	\$27,287.00
Hedges logging	TiberPro TF 830 Forwarder & Valmet 425 Track Machine	\$437,831.00	\$40,893.00
	SUBTOTAL	\$1,239,092.00	\$144,443.00
TOTAL AMOUNT FINANCED/SAVED BY WPCLF LINKED DEPOSIT		\$1,666,582.00	\$193,289.00

**WPCLF - Linked Deposit Silvicultural Equipment Loans
List of Purchased Equipment - (2003-2007)**

1. Rottne 5005 harvester w/ 550 dangle-head processor (**Redoutey Logging - July 2005**)
2. Prentice 180E self-propelled loader, 2006 model (**Team Excavating - June 2006**)
3. Super-single ultra-lite trailer (**Team Excavating - June 2006**)
4. Super-single ultra-lite trailer (**Team Excavating - June 2006**)
5. Rottne SMV Rapid 8 wheel forwarder, bogie wheels, eco over-tracks (**Redoutey Logging - Oct. 2006**)
6. TimberPro TF 830 Forwarder - 8 wheel / 20 ton capacity (**T & R Logging - February 2007**)
7. Timbco 445EXL feller buncher (**Mike Sark Farm Logging - March 2007**)
8. TimberPro TF 830 Forwarder w/Ecotracks (**Hedges Logging - April 2007**)
9. Valmet 425 tracked machine to be used with processing head (**Hedges Logging - April 2007**)