



REPORT TO THE LEGISLATURE

May 2025

Annual State Forest Nursery Report: Fiscal Year 2024

Legislative charge

Minnesota Statutes, § 89.36, subd. 4.

PRODUCING AND PROCURING PLANTING STOCK

The commissioner (of natural resources) shall submit an annual report to the legislature relating to the production of planting stock at state nurseries. The report must include the following: sale figures; income figures; and expenses for operations and administration. Copies of the report must be filed with the Legislative Reference Library and made available to the public. The commissioner shall also provide any additional information requested by the legislature relating to the production of planting stock at state nurseries.

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Contents

EXECUTIVE SUMMARY 3

BACKGROUND 4

FISCAL YEAR 2024 SALES AND PRODUCTION SUMMARY 5

Figure 1: FY2024 Seedling Sources5

Figure 2: FY2024 Seedling Distribution6

Figure 3: FY2024 Seedling Sales by Types.....6

Table 1: FY2024 Seedling Sales by Species and Producer7

Table 2: Nursery Expenses – Payroll and Non-Payroll8

Table 3: Payroll Expenses Breakdown8

Table 4: Non-Payroll Expenses Breakdown8

IMPROVEMENT EFFORTS AND CHALLENGES..... 9

Nursery Modernization9

Bare-Root Seedling Production and Labor9

Seed and Cone Collection10

Plug Seedling Production10

Summary 11

APPENDICES..... 12

Appendix A.1: FY2024 Statement of Revenues and Expenses, Dedicated State Forest Nursery Account 12

Appendix A.2: FY2024 Statement of Expenses, Funds Expended from General Fund (GF) and Federal Grants on State Forest Nursery Activities..... 12

Appendix B: FY2023 Accounts Receivables and Cash Sales 13

Appendix C: Ten-Year Summary Analysis of Dedicated Revenue and Expenses FY2015-2024 14

Executive Summary

The Minnesota State Forest Nursery, located ten miles south of Akeley in the Badoura State Forest, grows conifer and hardwood seedlings for reforestation on public and private lands. It is currently the only large-scale Minnesota nursery for native, conservation-grade seedlings. Primarily supported by seedling sales, the nursery is known for seed sourcing controls, seed extraction and cleaning, and tree cultivation that creates high-quality seeds and seedlings to reforest public and private lands.

The nursery sold 3.4 million conifer, hardwood, and hardwood shrub seedlings during Fiscal Year 2024 (FY2024). Of that total, 43% went to public land reforestation and 57% went to private land reforestation. Sales volume increased by 17% from FY2023. FY2024 receipts for seedling sales were \$1,474,099, direct seed sales for aerial seeding totaled \$137,309, and investment income equaled \$42,763. This resulted in total nursery receipts of \$1,654,171 in FY2024. Total expenses for the State Forest Nursery Account were \$1,949,040, and remaining encumbrances were \$58,260. More information about overall FY2024 State Forest Nursery Account revenues and expenses can be found in Appendix A.1.

The FY2024 year-end fund balance in the State Forest Nursery Account was \$847,138. Rebuilding this fund balance to \$2.2 million is a priority for the next four years. A fund balance is needed to cover annual operating costs in relation to year-to-year variability in nursery revenue.

FY2024 seedling revenue increased by \$344,000 over FY2023, while the number of seedlings sold grew by about 500,000. Increased revenue was due in part to seedling price changes implemented in FY2024 for some species and public interest in buying the smaller minimum lot sizes (300 seedlings) made available for the first time, which increased overall sales.

To address safety and modernization needs, and in anticipation of increased seedling demand for tree planting to mitigate and adapt to climate change, several improvements are in progress at the nursery. An online seedling ordering and purchasing system is in development, a new refrigerated storage building is nearly complete, and designs for building renovations funded by the 2023 Minnesota Legislature have begun. The Minnesota Department of Natural Resources (DNR) is also working to expand seed collection for nursery operations, a critical need to rebuild very low supplies at the nursery. Additional information about specific challenges, opportunities, and modernization of the State Forest Nursery is discussed in this report.

Background

The Minnesota State Forest Nursery began producing conservation-grade seedlings for reforestation in the early 1930s, and once included three facilities across the state. Today, the facility at Badoura near Akeley, MN remains active as a tree seedling nursery, and the General C.C. Andrews facility near Willow River, MN is in limited use as a tree seed orchard. To date, more than one billion State Forest Nursery-grown seedlings have been planted on public and private lands in Minnesota.

Minnesota Statutes, Section [89.36](#), authorizes the nursery to produce, exchange, or purchase seedlings each year for conservation tree planting. Cones and seed, purchased from private pickers, are prepped and cleaned for aerial seeding or planting. After two or three years of growing, seedlings are lifted from the field and shipped to final planting sites across Minnesota. To supplement nursery operations, each year 100,000 to 1 million seedlings are purchased from private producers for resale.

Seedlings purchased from the nursery must be used to establish or reforest harvested lands, wood lots, windbreaks, and shelterbelts or for erosion control, soil and water conservation, environmental education, or permanent food and cover for wildlife. Conservation-grade seedlings grown at the State Forest Nursery differ from landscape-grade seedlings produced in many private nurseries. Most notable, landscape-grade seedlings are typically larger and sold in much smaller quantities. Conservation-grade seedlings are smaller (5-12 inches tall), which makes them easier to plant in large quantities. They are also produced from seed collected in Minnesota, thereby helping to preserve and promote local genetic diversity and ensure the trees will grow where they are planted. The nursery grows conifer and hardwood tree species, as well as some shrubs, for these purposes.



Fiscal Year 2024 Sales and Production Summary

In FY2024, the State Forest Nursery sold 3,340,150 tree and shrub seedlings. Of these, the nursery produced 3,106,339 seedlings and 233,811 seedlings were purchased from licensed private producers or obtained via trades with other state or federal government nurseries (Figure 1). Public lands received 43% and private lands received 57% of the seedlings (Figure 2).

The nursery grows and sells three types of seedlings: conifer, hardwood, and shrub species. Most trees grown and sold are conifers (Figure 3). Significantly fewer shrubs are sold than trees, primarily to private landowners. Shrubs include dogwood, wild plum, chokecherry, and other small woody plants, and are often sold in mixed packets to landowners for wildlife habitat. Table 1 contains a complete list of seedlings sold in FY2024. The revenue generated by seedling sales at the nursery in FY2024 was \$1,474,099. Total revenue at the nursery, including seed sales, for FY2024 was \$1,654,171 a 26% increase over FY2023.

A statement of revenues and expenses for the dedicated state forest nursery account is included in Appendix A.1. Appendix A.2 identifies funds expended from the state General Fund and federal grants on State Forest Nursery activities. Accounts receivables and cash sales are detailed in Appendix B.

Figure 1: FY2024 Seedling Sources

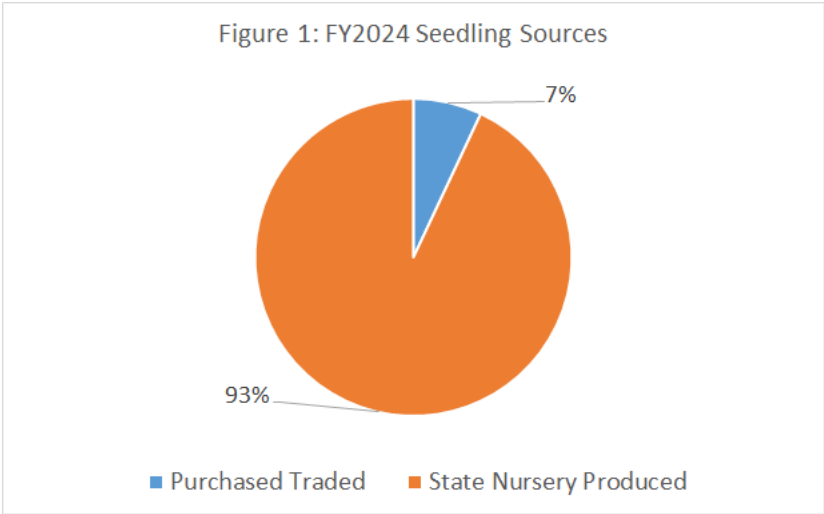


Figure 2: FY2024 Seedling Distribution

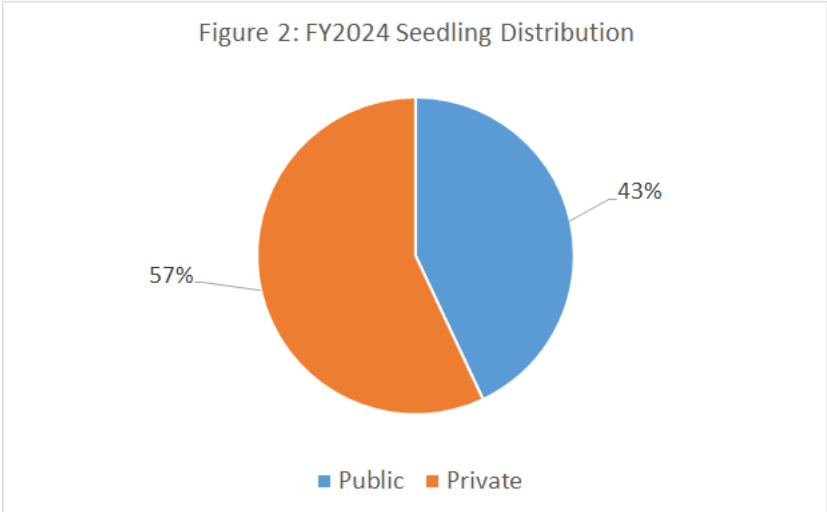


Figure 3: FY2024 Seedling Sales by Types

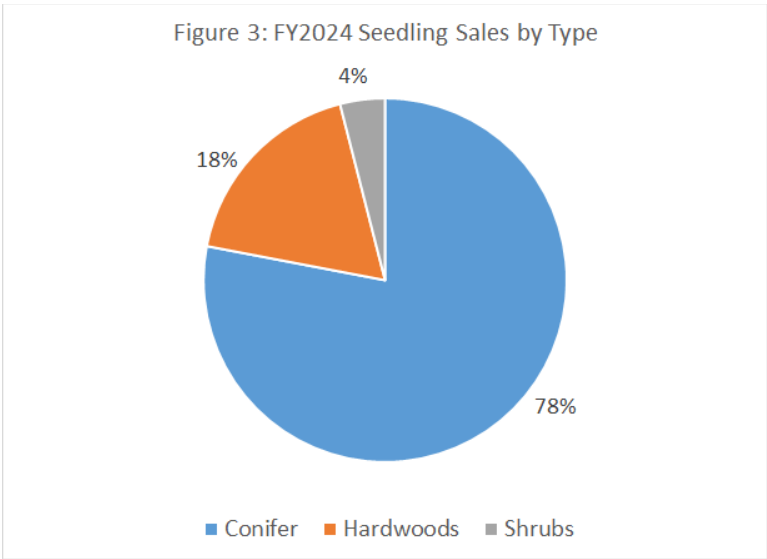


Table 1: FY2024 Seedling Sales by Species and Producer

Product	State-Produced Seedlings	Purchased or Traded Seedlings	Total Seedlings Shipped
NORWAY PINE	1,084,200		1,084,200
JACK PINE	439,900		439,900
WHITE PINE 5" +	392,000		392,900
WHITE SPRUCE 5" +	468,800		468,800
BALSAM FIR	61,300		61,300
BLACK SPRUCE	36,900		36,900
WHITE CEDAR	27,100		27,100
TAMARACK	62,400	10,000	72,400
BUR OAK	73,600		73,600
SILVER MAPLE	39,100		39,100
SUGAR MAPLE	28,600		28,600
WHITE OAK	82,200	2,600	84,800
SWAMP WHITE OAK	58,800		58,800
RED OAK	212,900	1,300	214,200
PAPER BIRCH		4,400	4,400
RED MAPLE		1,300	1,300
WILD PLUM		43,200	43,200
RED OSIER DOGWOOD	13,100		13,100
ELDERBERRY		9,000	9,000
BLACK CHERRY		19,500	19,500
CHOKE CHERRY		24,875	24,875
SILKY DOGWOOD		4,200	4,200
GRAY DOGWOOD		4,700	4,700
BLACK WALNUT		76,600	76,600
HACKBERRY	10,700	20,000	30,700
KENTUCKY COFFEE TREE		6,000	6,000
BITTERNUT HICKORY	3,300	5,000	8,300
NANNYBERRY		10,000	10,000
SHELLBARK HICKORY		575	575
SHAGBARK HICKORY		1,300	1,300
BLACK OAK		700	700
TOTAL	3,094,900	245,250	3,340,150

Total State Forest Nursery Account expenses in FY2024 were \$1,949,040. Of this, \$1,113,891 were payroll expenses and \$893,409 were nonpayroll expenses (Table 2). Encumbrances remaining were \$58,260, as shown in Appendix A.1. General fund dollars totaling \$201,153, and \$320,000 in federal grant funds were expended primarily for the construction of a new refrigerated storage building (see Appendix A.2). Most of the building construction will be occurring in FY2025, and remaining encumbrances will be paid upon final approval and acceptance. A 10-year history of nursery dedicated revenues, expenditures, and fund balances is included in Appendix C.

Table 2: Nursery Expenses – Payroll and Non-Payroll

Type	Nursery Account	General Fund	Federal Grants	Total Expenditures	Percent
Payroll expenses	\$1,113,890	\$7,622	\$0	\$1,121,512	55%
Non-payroll expenses	\$835,150	\$193,531	\$320,000	\$1,348,681	45%
TOTAL	\$1,949,040	\$201,153	\$320,000	\$2,470,193	100%

Table 3: Payroll Expenses Breakdown

Type	Nursery Account	General Fund	Total Expenditures	Percent
Full-time salary	\$770,897	\$4,785	\$775,682	69%
Part-time and seasonal salary	\$324,451	\$935	\$325,386	29%
Other employee costs (includes unemployment and worker's compensation)	\$18,542	1,902	\$20,444	2%
TOTAL	\$1,113,890	\$7,622	\$1,121,512	100%

Table 4: Non-Payroll Expenses Breakdown

Type	Nursery Account	General Fund	Federal Grants	Total Expenditures	Percentage
Supplies, printing, and advertising	\$319,097	\$12,740		\$331,837	25%
Fleet and travel	\$71,984	\$0		\$71,984	5%
Computer systems and communication	\$185,671	\$27,781		\$213,452	16%
Utilities	26,947	\$0		\$26,947	2%
Other operating costs	\$223,098	\$5,119		\$228,217	17%
Equipment and repairs	\$8,353	\$0		\$8,353	1%
Capital	\$0	\$147,891	\$320,000	\$467,891	35%

Type	Nursery Account	General Fund	Federal Grants	Total Expenditures	Percentage
TOTAL	\$835,150	\$193,531	\$320,000	\$1,348,681	100%

Improvement Efforts and Challenges

Nursery Modernization

In 2022, the DNR completed an analysis of the modernization needed at the State Forest Nursery to support ongoing and increased seedling production. This resulted in a feasibility study that identified a three-phase effort to aid the State Forest Nursery in effectively sustaining its role in meeting Minnesota’s current and future reforestation needs: 1) add a cooler building to address cold storage needs; 2) modernize the existing seed extractory building, office, sorting/grading/packing sheds and cone storage areas; and 3) construct a greenhouse and associated facilities needed to produce plug seedlings in addition to bareroot seedlings at the nursery.

Two of these three modernization projects are currently underway. Construction of a large, cold storage building will be complete in spring 2025. This project was funded by a mix of General Fund and federal grant dollars. Efforts are also underway to complete the detailed design and construction bid package for modernizing the seedling sorting and packing building, the seed extractory, and the nursery office. This project is funded through state bonding dollars.

The third phase, which involves the construction of a plug seedling facility within the State Forest Nursery system, is in the initial planning stages and has not yet been funded. The need for a plug seedling facility is addressed later in this section.

In addition to modernizing the nursery facilities, the DNR is transforming the seedling ordering system from a manual process to a web-based system that allows for real-time updates of seedling availability and on-line payment from customers. The new system will be ready for the fall 2025 seedling sales window and will significantly improve the ordering experience while reducing processing time for staff and the potential for errors. Funding for this project is from Minnesota’s Technology Modernization Fund.

Bare-Root Seedling Production and Labor

Past versions of this report have highlighted both the need to increase bare-root seedling production to meet current and future demand, and the effect of labor shortages on the ability to staff seasonal operations. Recent field improvements and equipment upgrades have increased seedling growing capacity and efficiency. This is beginning to translate to higher annual seedling availability, a trend that is expected to continue. The DNR’s recent efforts to employ contract work crews at key times of the seedling production cycle to address labor shortages are also showing positive results. The DNR will continue to keep a close eye on workforce availability and patterns to help ensure adequate staffing of nursery operations through a mix of seasonal hires and contracted services.

Seed and Cone Collection

Seed procurement is currently the greatest area of challenge regarding the State Forest Nursery. Ideally, the DNR would have a three- to five-year supply of conifer seed on-hand to grow seedlings and for use in county and state aerial seeding efforts. As of spring 2025, the DNR does not have enough seed to fulfill the current annual needs. Species with significant shortages include black spruce, white spruce, white pine, and red pine. Further, demand from private landowners for hardwoods like maple and oak is increasing, which may result in seed shortages for these species, as well.

The main source of seed for the State Forest Nursery is cones and seeds gathered from Minnesota forests. Forests produce abundant seed crops approximately every three to four years, with significantly reduced yields in the intervening periods. It is important to prioritize seed and cone collection during the high-yield years to ensure seed availability; this need for focused effort is not well-aligned with the past practice of relying on “self-selected” seed and cone collectors.

The DNR Forestry Division created a seed procurement consultant position in FY24 and the position was filled in October of 2024 to help address this challenge. The duties of this position include developing contracts for seed and cone collection, maintaining and expanding the DNR’s seed orchards, and working with external partners to increase public interest in seed and cone collection.

Plug Seedling Production

A final area of challenge – and opportunity – for the State Forest Nursery involves the availability of plug seedlings. Plug seedlings are grown indoors in an environmentally controlled greenhouse where fertilizer, temperature, lighting, and water are all automated. After one year these seedlings, with soil plug still attached, are removed from the greenhouse and packaged for shipping. This contrasts with bareroot seedlings, which are grown outdoors for two to three years, harvested (or “lifted”) when dormant, and transported without the soil (i.e., with bare roots) to the planting site. The State Forest Nursery system currently only produces bareroot seedlings.

Bareroot production provides a cost-efficient, lower-investment option to supply many millions of seedlings annually. Plug seedlings are more easily stored, which helps extend the planting season and allows land managers to avoid planting in conditions that reduce survival rates. To ensure forests in our future, Minnesota needs the versatility of both bareroot and plug seedlings.

Currently the DNR, along with counties and nonprofits in Minnesota, purchases plug seedlings to supplement tree planting efforts. Over the past decade Minnesota’s private nurseries have moved away from production of conservation-grade plug seedlings. Today, most plug seedlings used in Minnesota are purchased from one Canadian company with a nursery in Michigan. Relying on one out-of-state source for plug seedlings increases the risk of price increases and supply limitations, especially in years when natural disasters impact existing bareroot stock. Adding plug seedlings to the State Forest Nursery program, in the right location, would alleviate some of this risk.

The DNR recently completed a [legislative report](#) assessing the feasibility of reopening the General C.C. Andrews state forest nursery for plug seedling production. The report explores the need for both bareroot and plug

seedling production to meet Minnesota's reforestation needs and describes the many considerations for siting a plug seedling facility.

Summary

The State Forest Nursery continues to play a vital role as the only large-scale Minnesota supplier of conservation-grade, bareroot seedlings for reforestation efforts on state, county, Tribal and private lands. In FY2024, the nursery supplied 3.4 million seedlings for reforestation, a 17% increase over FY2023. This number is expected to increase over the next several years to meet anticipated demand for tree planting to help meet climate change mitigation goals. Recent field improvements, equipment purchases, a new refrigerated storage building, and a new online ordering system are leading to higher efficiency, healthier seedlings and improved customer experience.

Seed procurement and access to plug seedlings remain challenges to seedling production and reforestation in Minnesota. The DNR is employing multiple strategies, including modernization efforts at the Badoura facility and the hiring of a seed procurement consultant, to address seed availability and ensure the sustainability of bareroot seedling production into the future. In the right location, the addition of a modern plug seedling facility to the State Forest Nursery system would further help ensure the future of Minnesota's forests by providing high-quality, Minnesota-grown plug seedlings for the state's reforestation and conservation needs. With that said, no one facility is expected to fully meet the demand for plug seedlings in Minnesota; additional plug seedling production also is needed at Tribal and private nursery facilities.

Appendices

Appendix A.1: FY2024 Statement of Revenues and Expenses, Dedicated State Forest Nursery Account

Description	Amount
Balance beginning FY2024	\$1,200,267
Revenues	
Nursery Seedlings	\$1,474,099
Nursery Seed*	\$137,309
Investment Income	\$42,763
Total Revenues	\$1,654,171
Expenses	
Salary and Other Compensation	\$1,113,891
Supplies and Expenses	\$835,149
Equipment and Capital Improvements	\$0
Remaining Encumbrances	\$58,260
Total Expenses	\$2,007,300
FY2024 Revenues Minus Expenses	-\$353,129
Ending Balance Roll Forward to FY2024	\$847,138

*Seed is sold to reforest state-administered lands either through direct aerial seeding or distribution to contract growers to be delivered back to the Division of Forestry for planting on state lands.

Appendix A.2: FY2024 Statement of Expenses, Funds Expended from General Fund (GF) and Federal Grants on State Forest Nursery Activities

Expenses	Amount
Salary and Other Compensation (GF)	\$7,622
Supplies and Expenses (GF)	\$45,640
Equipment and Capital Improvements (GF)	\$147,891
Federal Capital Improvement Grant	\$320,000
Total Expenses	\$521,153

Appendix B: FY2023 Accounts Receivables and Cash Sales

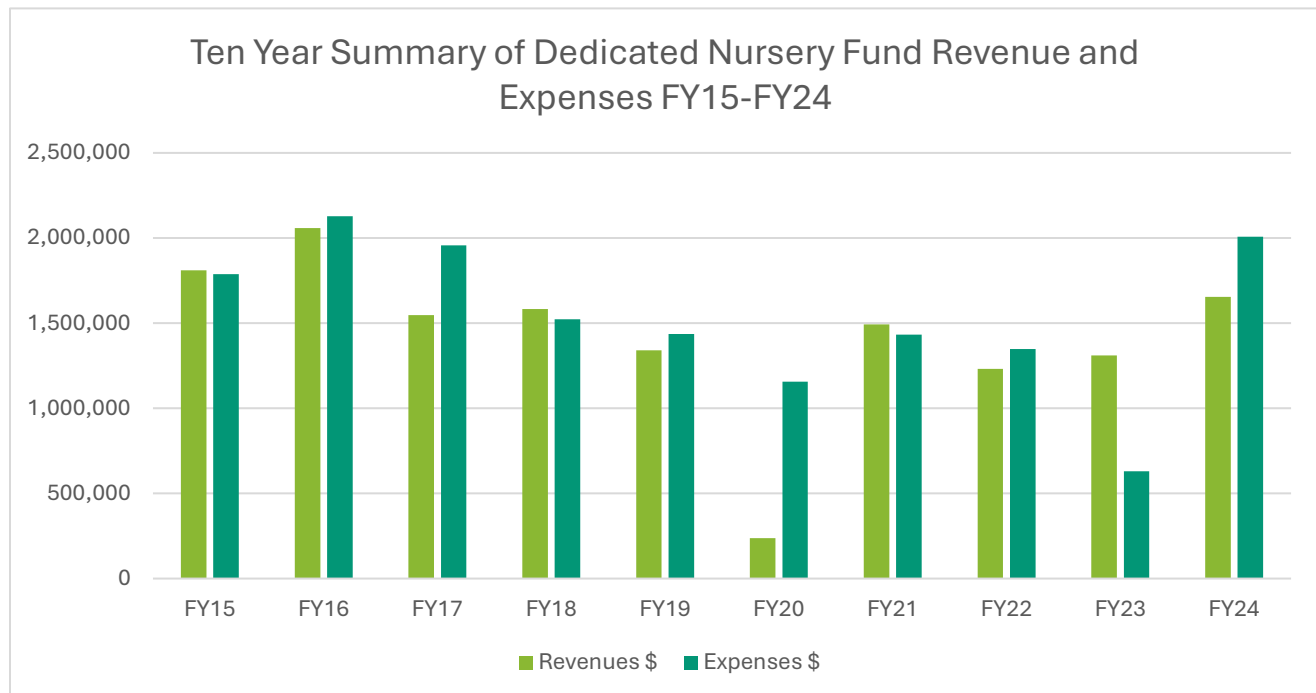
Description	Amount
Receivables remaining from prior fiscal years	\$2,319
FY24 Accounts Receivables	\$1,010,837
FY23 Write Offs and Adjustments & Credit Memos	(\$188,282)
Total Receivables	\$824,849
Outstanding Receivables in FY24	\$824,849
Collected on Receivables in FY24	\$753,309
Remaining Receivables to be collected in FY24	\$71,540
Collected Cash Sales in FY24	\$903,607
Collected on Receivables in FY24	\$753,309
Refunds in FY24	(\$2,745)
Total Collected Revenue FY24	\$1,654,171

*Adjustments are used to cancel and/or correct invoice amounts and write-offs (e.g., people canceling or changing their seedling order amounts)

**WIRES reports were used for the amounts billed, collected, and adjusted. WIRES is the DNR's revenue/receivable system and stands for Web Integrated Revenue/Receivable System.

Appendix C: Ten-Year Summary Analysis of Dedicated Revenue and Expenses FY2015-2024

Year	Beginning Balance \$	Revenues \$	Expenses \$	Ending Balance \$
FY 2015	1,964,070	1,810,865	1,787,504	1,987,431
FY 2016	1,987,431	2,058,630	2,127,752	1,918,310
FY 2017	1,918,310	1,546,417	1,956,735	1,507,991
FY 2018	1,507,991	1,583,790	1,522,104	1,569,678
FY 2019	1,569,678	1,339,985	1,436,427	1,473,236
FY 2020	1,473,236	237,235	1,155,975	554,497
FY 2021	554,497	1,493,505	1,433,306	614,696
FY 2022	614,696	1,231,006	1,348,695	497,007
FY 2023	497,014	1,310,177	631,034	1,176,157
FY 2024	1,200,267	1,654,171	2,007,300	847,138
3 Year Average	770,659	1,398,451	1,329,010	840,101
5 Year Average	867,942	1,185,219	1,315,262	737,899
7 Year Average	1,059,626	1,264,267	1,362,120	961,773
10 Year Average	1,328,719	1,426,578	1,540,683	1,214,614



Note: When completing the 10-year table we adjust the previous fiscal year to actuals. Due to the timing of the report, encumbrances are either actually incurred or cancelled. An adjustment is made to the previous fiscal year carryforward.