

Gratiot-Saginaw State Game Area Planting Number 1
Planted Spring 1942

Purpose of Planting

Much of the state-owned land in the Gratiot-Saginaw State Game Area is covered by a dense popple growth resulting from frequent burning. Cover is deficient, however, on the many low sand ridges which wind through the wetter popple areas. Fire has burned much of the humus from these ridges so that small bare or moss covered areas are frequent and only a sparse ground cover of grasses and widely scattered shrubs and trees prevails. The popple does not afford much winter cover, and wild-life food is not abundant.

To remedy these deficiencies, the ridges were planted with strips and clumps of pine. At the base of the ridges, where the soil was heavier and moister "food patch" plantings of fruit-bearing and nut-bearing trees and shrubs were put in. Near these were planted strips and clumps of spruces.

For a listing of legal descriptions, tract numbers, and acreage of areas planted see Table I. A list of the species planted, and numbers, age, and size of stock planted is given in Table II, and the number of each species planted in each section, in Table III. Planting costs are summarized in Table IV.

General Planting Information

Planting Stock:

The pines were produced at the Higgins Lake Nursery, and the spruces and deciduous trees and shrubs, at the Hardwood Nursery, with the following exceptions: Common elderberry and wild grape from the Michigan State College Nursery, and black walnut from the Soil Conservation Service Nursery (Dayton, Ohio). The stock was delivered in Game Division trucks driven by the Game Area Manager. Stock was picked up from the Higgins Lake Nursery on April 27, 1942, and from the Hardwood Nursery on May 5, 1942. It was delivered on the day picked up and was heeled in the following day. The stock was in good condition when received and when planted, except for some of the spruces, which may have been held heeled in too long, and the walnuts, which may have suffered from being held heeled in successively at Allegan, the Barry County State Game Area, and finally the Gratiot-Saginaw State Game Area. The walnuts were delivered on May 6, 1942, and the wild grape and common elderberry on May 13, 1942.

Source of Labor and Rate of Pay:

Laborers consisted of local farmers and shop workers temporarily laid off while the factories were tooling up for war work. The foreman is the local Key Man (fire fighting) for our Field Administration Division. The crew was paid \$0.60 per hour and the foreman \$0.69 per hour.

Soil Preparation:

No soil preparation was found necessary. The only exception to this was found in NW $\frac{1}{4}$ Section 22, where heavy sod made scalping necessary. However, this amounted to only 1.8 acres of the 244.1 acres planted.

Method of Planting:

Nearly all planting was done with shovels used as dibbles. Dibbles were tried, but the crew preferred the shovels. The shovels used were the property of the Field Administration Division and were obtained from the Key Man, my foreman. The black walnuts (425) and spruces (10,280) were planted by digging holes with shovels.

Spacing and Rate per Acre:

Plants were spaced 10 feet apart, at a rate of 436 per acre. This spacing, somewhat greater than normal, was deliberately selected as an experiment.

Dates of Planting:

Planting commenced on April 29, 1942 and ended on May 27, 1942.

Soil Types:

Planting was done on principally Arenac Fine Sand, and to a lesser degree Newton loamy sand.

Weather and Moisture:

An exceptionally dry April left soil conditions really too dry for best planting. Bare sand areas were frequently so dry that the sand persisted in trickling back into the hole before the plant could be inserted. However, light rains fell during the latter part of the planting period and the month following was exceptionally rainy.

Quality of Planting:

The planting was well done and high survival is expected. Early survival was practically 100 per cent. In the first plantings "food-bearing" plants were planted in greater numbers than had been planned. Additional planting of these species in Sections 11, 14, 21, 27, and 28 is recommended.

Check Plots:

No check plots were laid out. In the future, a limited number of clumps and short strips on different types of soil and in differing situations topographically will be selected and marked.

Chas. T. Black

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7-9-42

L.G.D.

7-10-42.

Table I

DESCRIPTION, TRACT NUMBERS, AND ACREAGE OF AREAS PLANTED

Description		Tract No.	Acreage Planted
T 10 N	R 1 W	Sec. 1	
		SE $\frac{1}{4}$	8.5
		11 SE $\frac{1}{4}$ SE $\frac{1}{4}$	2d (1n part) 1.0
		12 E $\frac{1}{2}$ SW $\frac{1}{4}$ SW $\frac{1}{4}$ NW $\frac{1}{4}$	2c, 24, 24b, 25a, 27, 28, 29, 30 52.2
		13 entire	2f, 31, 32 32.1
		14 E $\frac{1}{2}$	2g, 33 9.4
		21 E $\frac{1}{2}$	2h, 37, 38 5.5
		22 E $\frac{1}{2}$ SW $\frac{1}{4}$ NW $\frac{1}{4}$ NW $\frac{1}{4}$	2h, 41 29.6
		27 E $\frac{1}{2}$ NW $\frac{1}{4}$	2h, 62 24.1
		28 E $\frac{1}{2}$ E $\frac{1}{2}$ W $\frac{1}{2}$	2h 16.1
		33 NE $\frac{1}{4}$ N $\frac{1}{2}$ SW $\frac{1}{4}$ SW $\frac{1}{4}$ SE $\frac{1}{4}$ E $\frac{1}{2}$ W $\frac{1}{2}$	2h, 58 60, 61 24.7
		34 E $\frac{1}{2}$ N $\frac{1}{2}$ SW $\frac{1}{4}$ N $\frac{1}{2}$ SW $\frac{1}{4}$ SW $\frac{1}{4}$ N $\frac{1}{2}$ E $\frac{1}{2}$ SW $\frac{1}{4}$ SW $\frac{1}{4}$ S $\frac{1}{2}$ SW $\frac{1}{4}$ SW $\frac{1}{4}$ NW $\frac{1}{4}$ SW $\frac{1}{4}$	N $\frac{3}{4}$ SE $\frac{1}{4}$ SE $\frac{1}{4}$ 2h, 62, 63, 65, 125 40.9
TOTAL			244.1

Table II

STOCK PLANTED

<u>Species</u>	<u>Quantity</u>	<u>Size</u>	
		<u>Age</u>	<u>Average Height</u>
Red Pine	7,500	2-0	6"
Red Pine	36,700	3-1	8"
Jack Pine	17,700	3-0	6"
White Pine	22,750	3-1	6"
Black Spruce	5,080	4-1	13"
White Spruce	5,200	3-0	6"
Butternut	985	1-0	7"
Walnut	425		36"
Wild Grape	1,150	2-0	12"
Witch Hazel	1,650	3-0	18"
Red Elderberry	540	3-0	30"
Common Elderberry	525	1-0	8"
Wild Plum	2,000	1-0	8"
Juneberry	950	2-0	12"
Mannyberry	1,100	3-1	12"
Black Cherry	2,100	1-0	6"
Total	106,355		

Table III

PLANTINGS BY SPECIES AND SECTION

Section	Red Pine	Jack Pine	White Pine	Black Spruce	White Spruce	Butter-nut	Walnut	Wild Grape	Witch Hazel	Red Elder	Common Elder	Wild Plum	June berry	Nanny berry	Black Cherry	Total
1	1,750	1,200		200	200	50	30	50				100	100			3,680
11	150		275													425
12	3,500	10,800	4,050	1,000	850	250	150	600	200	150	125	700	350			22,725
13	6,900	1,300	250	1,275	1,150	275	60	125	700	210	200	500		150	900	13,995
14	1,750		2,475													4,225
21	1,600			300	300									100	100	2,400
22	6,100	1,600	2,300	440	750	150	90	100	250	40	100	200	100	400	400	13,020
27	7,625		1,825	225	400	50	30	75					50	100	100	10,480
28	2,350	1,600	2,100	250	250	50	30							200	200	7,030
33	4,000		4,800	1,040	750	10	5	10	50	5	25	25	2			10,732
34	8,475	1,200	4,675	550	550	150	30	190	450	135	75	475	338	150	400	17,843
TOTALS	44,200	17,700	22,750	5,080	5,200	985	425	1,150	1,650	540	525	2,000	950	1100	2,100	106,355

Table IV

PLANTING COSTS

	<u>Fish & Wildlife Service</u>	<u>Game Division</u>	<u>Total</u>
Labor			
Soil Preparation	None	None	None
Planting	\$619.16	\$206.39	\$825.55
Supervision	52.28	44.63	96.91
Transportation	None	35.43	35.43
Equipment	17.06	5.69	22.75
Planting Stock	None	None	None
Surveys & Miscellaneous	<u>None</u>	<u>None</u>	<u>None</u>
Total Cost.	\$688.50	\$292.14	\$980.64
Cost per 1,000 Plants	\$ 5.49	\$ 2.75	\$ 9.22
Cost per Acre	\$ 2.82	\$ 1.20	\$ 4.02