

MICHIGAN DEPARTMENT OF NATURAL RESOURCES

INTEROFFICE COMMUNICATION

Roscommon, Michigan
 Region II
 August 29, 1980

TO: Gary Boushelle, Regional Wildlife Biologist
 FROM: Jerry Weinrich, Endangered Species/Wild Turkey Biologist
 SUBJECT: 1980 Kirtland's Warbler Jack Pine Planting & Seeding

This spring, Wildlife Division planted a total of 1,281,000 jack pine trees on 1,674 acres of Kirtland's Warbler critical habitat. Of this total 349,000 (428A) were planted by two private contractors, 248,000 (215A) were hand-planted by Camp Shawono, Camp Nokomis, and the West Branch Wildlife YACC crews, and 684,000 (1,031A) were planted by hired crews using leased tractors and Forest Management Division's Whitfield planters. Areas planted were in Crawford, Oscoda and Ogemaw Counties. An additional 100,000 jack pine trees were planted by Forest Management Division on critical habitat in Ogemaw County.

Aerial seeding of jack pine was also accomplished on 598 acres of critical habitat in Chikaskas, Ogemaw, and Oscoda Counties. Of this total, part of an area of 300 acres in Oscoda County had been planted just prior to seeding - the other acreage (240 acres in Chikaskas County and 58 acres in Ogemaw County) had been burned in 1979 but not planted prior to seeding.

HHL

State nurseries were the source for 973,000 seedlings and we purchased the other 308,000 from the U. S. Forest Service Toumey Nursery near Watersmeet. Average cost per thousand seedlings as shown in Table 1 was computed as follows:

	<u>Total Charge</u>	<u>Per Thousand</u>
State Nurseries (973M)	\$19,460.00	\$20.00
Storage & Transport	288.59	0.30
	<u>\$19,748.59</u>	<u>\$20.30</u>
Federal Nursery (308M)	\$18,788.00	\$61.00
Storage & Transport	1,445.71	4.69
	<u>\$20,233.71</u>	<u>\$65.69</u>

Average Cost per 1,000 Seedlings =

$$\frac{\$19,748.59 + \$20,233.71}{973 + 308} = \$31.21$$

Table 1 shows cost per acre planted or seeded, and cost per thousand trees planted for contract planting, planting with DNR crews with leased tractors, hand-planting with corrections and YACC labor, and contract aerial seeding.

Table 1
Kirtland's Warbler Jack Pine Regeneration Costs
Spring - 1980

<u>Method</u>	<u>Acres</u>	<u>Total Stocking</u>	<u>Seedlings Per Acre</u>	<u>Cost Component</u>	<u>Cost</u>	<u>Cost Per Acre</u>	<u>Cost Per M Seedlings</u>
Contract	428	349,000	815	Contracts	\$8,397.15	\$19.62	\$24.06
				Planting Stock	10,892.29	25.45	31.21
				Travel	369.79	0.86	1.06
				Supervision	1,692.31	3.95	4.85
				Markers	62.76	0.14	0.18
				TOTAL	\$21,414.50	\$50.03	\$61.36
Leased Tractors	1,031	684,000	663	Fuel, Fluid,			
				Other Equip.	\$4,282.14	\$4.15	\$6.26
				Laborers' Wages	19,052.35	18.47	27.85
				Planting Stock	21,347.64	20.70	31.21
				Leasing	15,968.75	15.48	23.35
				Travel	890.75	0.86	1.30
				Supervision	4,076.57	3.95	5.96
				Markers	153.64	0.14	0.22
TOTAL	\$65,771.87	\$63.79	\$96.16				
Hand-Planting	215	248,000	1,153	Planting Stock	\$7,740.08	\$36.00	\$31.21
				Fuel	1,141.13	5.31	4.60
				TOTAL	\$8,881.21	\$41.31	\$35.81
Aerial Seeding	598	360#		Contract	\$ 857.64	\$1.44	-
				Seed	10,800.00	18.06	-
				TOTAL	\$11,657.64	\$19.50	
GRAND TOTAL					\$107,725.02		

From this table, it is apparent that hand-planting (with these sources of labor) is by far the cheapest method of planting. But if the Department were paying these laborers at

least the minimum wage, it would be very much more expensive; and the acreage that might be planted by manpower of these sources in one season is much less than is possible for machine planting.

Machine planting by private contractors may be much less expensive than with hired crews and leased equipment, but the areas planted under contract this year were not comparable to those planted with the leased machines. The contract planting areas were essentially open fields compared to the areas with stumps and slash which were planted with the leased machines.

It should be noted that cost figures for all three planting methods in Table 1 are minimal. Actual cost of State planting stock would be considerably higher were inmate labor not involved. These cost figures also do not include any portion of the salaries and travel of Biologists and others who were involved with the plantings and seedings.
Depreciation and fuel costs are also a whole lot less.

It is important to note that the desired density of planting was apparently not achieved with machine planting. Even allowing 10-15% more for difference between amount indicated on bags and actual contents, less than 1,000 trees per acre were planted with machines. This situation will have to be corrected for future Kirtland's Warbler plantings.

There is no doubt that planting is an expensive method for jack pine regeneration and investigation of alternative methods is definitely needed.



- /ah
- Pavlovich
- Smock
- Havard
- Robinson
- Perez
- Eder
- Carlson
- Smith
- Lerg
- Mahalek
- Tarr
- Olson
- Byelich
- Irvine