

MICHIGAN DEPARTMENT OF NATURAL RESOURCES

J. Weinrich  
Houghton Lake  
Wildl. Res. Stat.

INTEROFFICE COMMUNICATION

06-13-83

TO: Richard Eiden, Assistant Chief Wildlife Division  
FROM: Thomas F. Carlson, Wildlife Habitat Biologist  
SUBJECT: Jackpine Regeneration for Kirtlands Warbler

At present the standard practice for regenerating thick stands of young jackpine in Kirtlands Warbler Management Areas is to commercially clear-cut the merchantable timber, prescribe burn the slash and then plant seedling jackpine in an opposing weave pattern at a rate of about 1300 stems per acre. The economics of this method are described below. At present, it is very difficult to get good costs for jackpine stumpage because so much of it is selling at a reduced rate because of jackpine budworm infestations. In conversations with Forester Bill Mahalak of the Region II office, I found that the average price paid for jackpine in Region II was \$7.04 per cord. Bill also said that overall, jackpine acreages would average about 13 cord of jackpine per acre.

It costs a little more to layout the stripcut sales but the overall savings warrants this cost. The comparative costs for clearcut, burn, and replant versus stripcut and burn are so significantly great that we should be trying it in other areas as soon as possible.

<u>Present Method</u>	<u>Strip Cut</u>
Burn costs - 12.00/ac	\$29.00/ac
Replant costs - <u>\$100.00/ac</u>	
\$112.00/ac	

Michigan State University began research on this stripcut method by contracting with some of their students to gather background data on the first stripcut area in 1981. They (Dr. Don Dickman) have proposed a continuation of the project to look at the how's and why's of the method. It would be very beneficial for us, the Kirtlands Warbler and Forest Management Division, if we could continue this research now, especially since the final 3rd block of the three block unit is scheduled to be cut this summer and fall, to be burned next spring.

Please advise if this would be possible. No answer to this letter is necessary. Coordinate efforts via Sylvia Taylor, Gary Boushelle, and Dr. Don Dickman of Michigan State University. Thanks

*Tom C.*

TFC:dm

## Stripcut and Burn for Kirtlands Warbler

Kirtlands Warbler use thick stands of young jackpine growing on grayling sand for nesting and rearing of young. To reproduce these conditions, the present method is to clearcut the timber, commercially wherever possible, prescribe burn the area, and plant jackpine seedlings in an opposing weave pattern. This is very expensive, and alternative methods need to be utilized which are more cost effective. Below is described such a method.

### Present Method

Clearcut average 13 cord/acre at 7.04<sup>1</sup> = \$91.52 income per acre  
 Prescribe burn \$12.00 per acre cost  
 Plant jackpine seedlings 1300/acre \$100.00 cost (minimum)

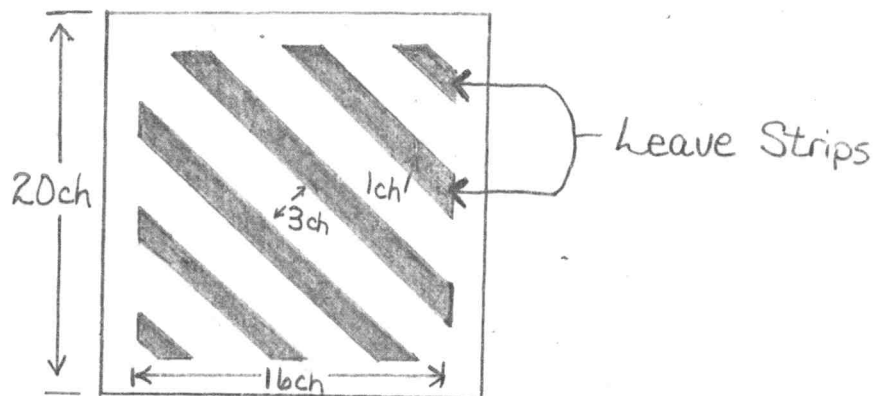
For a 40 acre block of jackpine

Income--40 acre x \$91.52 per acre =	+\$3660.80
Cost to reproduce Kirtlands Warbler Habitat = Burn 12.00/ac	- 480.00
Plant 100.00/ac	- 4000.00
	-\$ 812.00

### Strip Cut Method

#### 40 acre block

Clearcut 2 chain wide strip around entire forty for a fire break. Cut the remaining 25.6 acres in strips removing 75% and leaving 25% in strips running NW-SE<sup>2</sup>



<sup>1</sup>Figures from Bill Mahalak Region II, Assistant Forest per conversation 06/10/83

<sup>2</sup>Recommendation of Fire Expert, Don Grant DNR Forest Management Division, 1978

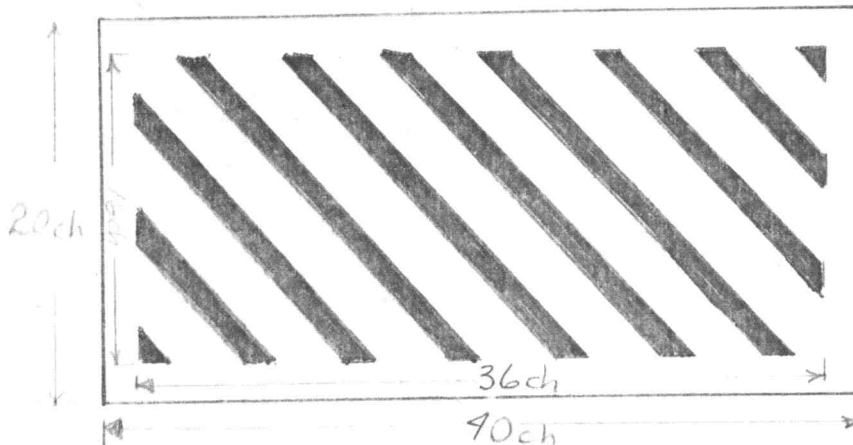
Costs

Timber harvested 40.0 acre-6.4acre left x 13 cord/acre	437 cord
437 cord x \$7.04/cd. (average Region II price 4/83)	3077.00
Cost of extra layout--\$2.00/acre <sup>3</sup> x 40acre	- 80.00
Cost of timber left on 6.4 acre	- 586.00
Cost of prescribed burning \$12.00/acre <sup>3,4</sup>	- 480.00
	<u>+\$1931.00</u>

After cutting cost of reproducing suitable Kirtland Warbler's habitat.

Extra layout 2.00acre/40acre	- 80.00
Timber left on 6.4 acre	586.00
Prescribed burn at 12.00/acre	<u>480.00</u>
	<u>\$1146.00</u>

Prorated for 40 acres = \$28.65 per acre.

80 acre block

Actually clearcut 65.6 x 13 cord/acre x 7.04 =	+ 6004
Cost of Extra Layout 2.00/acre	- 160
Cost of timber left on 14.4 acre	- 1318
Cost of prescribed burn at 12.00/acre	- 960
	<u>+\$3566</u>

Harvest, Burn, and Replant Costs  
 \$7,322- \$960-\$8,000=-\$1638.00  
 Prorated for 80 acres = \$30.48/acre.

<sup>3</sup>Per R. Borak letter of 5/2/1979.

<sup>4</sup>Per Carl Beckers Burn report on 52 acres of strip cut in Montmorency County 5/83

160 acre block

127.6 acre actually clearcut	
Income-127.6 acre x 13 cord/acre x 7.04/cord	+ 11678.00
Outlay-Extra Layout time	- 320.00
Cost of timber in leave strips	- 2965.00
Cost of prescribed burn	- 1920.00
	<u>+ \$ 6473.00</u>

Prorated for 160 acres = \$32.53/acre.

Cost of Normal harvest, burn, and replant.  
 +\$14,643 - \$1920 - \$16,000 = -\$3277.

By cutting mature jackpine in this manner and instructing logger to make sure some tops are left on the ground in the leave strips the stage is set for a prescribed burn in more moderate conditions because the fuel is where we want it, i.e., under the seed trees where it will burn hot enough to open the seed cones in the tops of the trees and hot enough to scorch the ground for a proper seed bed.

Prescribed Burning in Partially Cut Jack Pine for Kirtlands Warbler Habitat

PROPOSED BUDGET\*

Graduate Assistantships

Summer term ( $\frac{1}{2}$ -time) and fall term ( $\frac{1}{4}$ -time) 1983	\$3,150
Summer term and fall term (both $\frac{1}{4}$ -time) 1984	2,200
Student labor	700
Travel	1,500
Supplies and equipment	1,200
Computer costs	500
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Subtotal	\$9,250
Indirect costs (26%)	2,405
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Total	\$11,655

\* This budget is subject to final negotiations between Michigan State University and the Department of Natural Resources.

Tom,

Here is a copy of the proposed budget. The exact details will have to be hammered out later, but this is something to work from.

Don Dickman