

Kickapoo Woods Cooperative Feasibility Study – August 30, 2000

Resource Analysis:

Forest Resources Available in the Kickapoo Woods Cooperative service area.
Wisconsin Forest Statistics, 1996 USDA-USFS

County	Acres of Forest	Acres of Sawtimber	Acres of Poletimber	Saw-Timber Volume MBF	Net Annual Growth MBF	Annual Harvest MBF
Vernon	223,000	114,000	61,800	761,323	20,551	39,080
Crawford	179,000	83,100	57,300	655,620	22,145	27,465
Monroe (50%)	136,000	55,000	51,000	395,000	12,500	10,085
Richland (50%)	83,000	41,000	26,500	324,000	9,900	11,112
Totals	621,000	293,100	196,600	2,135,943	65,096	87,742

Average Stocking per acre is 3,439 board feet of sawtimber.
Net annual growth averages 104 bf/acre of sawtimber.

Value-added processing of harvested timber could create a major new industry in the KWC service area. In N. Europe where forest owner cooperatives have been successful for over 50 years, 60% of the forest owners have become members. In Finland, nearly all forest owners now belong to a cooperative. We estimate for this feasibility study that within 5 years, a cooperative would attract about 6% of the woodlot owners. This would total 37,500 acres on about 250 ownerships.

This acreage would contain about 128,000,000 board feet of sawtimber, with an annual growth of about 4,000,000 bf. There is initially about 40,000,000 bf of sawtimber that should be harvested because it is overmature or defective and competing with the better quality crop trees. Timbergreen’s experience has been that we need to remove about 1,000bf/acre in the first harvest to begin the restoration process.

- 1,000 board feet is about 17 12” diameter trees with 3 merchantable 8’ logs
- or 8 16” diameter trees with 4 merchantable 8’ logs
- or 4 20” diameter trees with 5 merchantable 8’ logs
- or 1 32” diameter tree with 6 merchantable 8’ logs

Once the restoration harvest is completed on a property, an annual improvement harvest would be planned to remove about 80% of the annual growth. Timbergreen’s Full Vigor Forestry system works to build a fully stocked forest of high quality large trees, then harvests just the natural annual production of the forest to keep the best trees growing with good vigor. Using FVF principles, the annual growth of the forest could be doubled within 20 years. Each selective harvest would be better and better quality as time goes forward. This improvement harvesting would visit an individual acre every 10 years for average woodland, or every 5 years on better sites.

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Timber Types: area in acres

County	Oak-hickory	Sugar Maple- Basswood	Elm – Ash Soft Maple	Aspen - Birch	Pine
Vernon	97,600	81,200	21,100	13,100	8,400
Crawford	108,300	47,900	18,200	5,000	0
Monroe (50%)	72,350	25,700	10,000	10,200	17,540
Richland (50%)	33,500	41,500	3,450	5,000	0
Total acres	311,750	196,300	52,750	33,300	25,940
Percent	50.3%	31.6%	8.5%	5.4%	4.2%

Potential Products: Hardwood flooring and kiln dry lumber have been the best products here at Timbergreen for 12 years. We specialize in rustic – character flooring that can be made from our worst first harvests. (See the article ‘The Timbergreen Trials’) The oak, hickory, maple, elm ash, and birch present in the KWC area are all very valuable as flooring. Better quality boards would be more valuable as millwork, furniture, or simply dry lumber.

Survey of Current Market Prices:

There are two other value-added operations similar to Timbergreen that sell ecologically sound wood products direct to consumers.

Full Cycle Woodworks in Eastern Tennessee, Ron Highsmith – Owner.
www.sustainablelumber.com is their website. SmartWood certified.

Species	grade	price/bf
Ash	#1c	\$2.25
	Sel	3.75
Hickory	#1c	1.90
	Sel	2.60
Red oak	#1c	2.35
	Sel	3.75
	Flooring	3.95
QS red oak	#1c	4.00
	Sel	6.05
White oak	#1c	2.45
	Sel	3.95
	Flooring	3.45
QS white oak	#1c	4.25
	Sel	6.45
Walnut	#1c	3.50
	Sel	4.90
Clear oak trim (various)		10.00
Paneling		1.85

The Timbergreen lumber price is at www.timbergreenforestry.com

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Windhorse Farm in Nova Scotia, Jim Drescher – Owner

www.windhorsefarm.org is their website

Species	grade	price/bf
Aspen	knotty	\$1.05
	Select	2.05
Pine	knotty	1.05
	Select	2.10
Ash, oak, maple flooring		3.95
Aspen flooring		2.45

A market survey of retail stores in Madison revealed these prices on 8-28-00.

Menards	red oak	#1c	\$2.00/bf	
		Select	4.00	
Workbench	red oak	#1c	2.85	
		Hard maple	#1c	2.70
		Walnut	Sel	4.50
Wildwood	Red oak	Sel	2.45	
		Hard maple	Sel	3.90
		Walnut	Sel	3.10
Brunsell Millwork	Red oak	Sel	3.15	
		Hard maple	Sel	4.50
		Walnut	Sel	4.70

Woodshop News, a monthly woodworkers journal published in Connecticut conducts a regional phone and internet price survey in each issue for one lumber species. Recent poll results for the Midwest are:

Species	Retail	Wholesale
Soft maple	\$2.56-2.96/bf	\$2.05-2.17/bf
Hard maple	\$3.95-4.98/bf	\$3.10-3.20/bf
White oak	\$2.96-3.50/bf	\$2.05-2.10/bf
Red oak	\$3.50-3.95/bf	\$1.90-2.25/bf
Ash	\$2.99-3.60/bf	\$1.35-1.45/bf
Walnut	\$3.75-4.95/bf	\$2.40-2.42/bf
Cherry	\$4.67-4.98/bf	\$3.80-4.22/bf

The WoodMizer retail outlet sells wood at the following prices:

Species	Grade	Retail
Red oak	#1c	\$2.45/bf
	Sel	3.08
	Prefinished Flooring	4.96
White oak	unfinished flooring	3.17

Every retail store contacted over the past 10 years has had prices 20-30% higher than Timbergreen. This suggests opportunity to receive significantly better than the \$2.20/bf average sales price obtained by Timbergreen – by having a greater volume, a more accessible location, and more aggressive marketing.

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There are an unlimited number of wood products that could be made from the forest here. The more manufacturing done, the higher the profits. Selling direct to consumers gives maximum returns. Marketing could be targeted first at construction projects in the area where large volumes of lumber are used for flooring, cabinets, furniture, etc. Maple and oak are in high demand in the Milwaukee, Madison, and Chicago area. FSC certification would be a useful marketing aid for the coop's wood.

A product with good potential for KWC would be to build log cabins, complete with railings, stairs, flooring, cabinets, furniture, decks, etc. Coop crews or local contractors could work with the coop to use much of the annual harvest in a final form in the local region.

Value-added Facilities:

Several buildings would be needed to operate efficiently. Our suggestion would be:

1. Sawmill building – 60'X100' insulated pole building.
This would house two WoodMizer type band sawmill, a band grade resaw with run around system, an edger saw, a chop saw, a dust collection system, and material handling rollers.
Scragg mill and multi-head resaw
One heavy-duty forklift would be needed for this operation.
2. Kilns
Twelve Super Solar Cycle Kilns – 1,800,000 bf annual capacity total.
3mbf/week/kiln
Ten wood heated kilns 1,800,000 bf annual capacity total
3. Warehouse-workshop-outlet store-office – 60'X100' insulated pole building.
This would house a surface planer, rip saw, chop saw, and molder.

Harvesting Equipment:

Most logging should be done by professional contractors with their own equipment. Forest owners who wish to do their own woods work could benefit by cooperative ownership of state of the art low impact logging equipment.

Several low impact logging machines would be needed. The small end could be 4X4 or 6X6 ATVs with a skidding arch. Horse logging would work very well on most forests. A skidding machine with radio-controlled winch is another important machine. A small and a large forwarding trailer or a pre-hauler would move logs to the roadside. Flatbed trailers or a log truck would move the logs to the mill.

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Economic Impacts: Based on 12 years of selling value-added wood products across the continent, Timbergreen can project the value of the annual harvest – if selling direct to consumers is chosen as the marketing goal.

4,000,000 bf total harvest volume:

Hardwoods – 4,000,000 bf		
Sell 10% as rough lumber	@\$.75/bf	\$300,000
Sell 45% as flooring	@ \$3.00/bf	\$5,400,000
Sell 45% as kd lumber	@ \$2.50/bf	\$4,500,000
Estimated annual sales		\$10,200,000

These figures could go much higher if the coop installs the flooring, or more wood is manufactured into final form products. It would be possible to exceed \$20,000,000 per year gross sales with creative processing and marketing.

It would take a major effort to create the facility to process this wood, but the payoff is very quick. Coop members visited Menominee Tribal Enterprises forestry operation on August 25th. A new building containing a planing/flooring mill is just going into operation. The \$3,000,000 investment is projected to pay off in 6 months. Their 220,000 acre operation currently employs 500 full time workers. This equals one employee for every 440 acres of forest.

With a goal of 37,500 acres for KWC, the projected size of our business could create at least 85 full time jobs within 5 years, based on MTE's working example.

Non-Timber Forest Products:

Other forestry coops are also producing a variety of mushrooms, herbal-medicinal plants, maple syrup, etc to supplement the timber production and involve people of varied interests. The rich soils in the Island forests would be suitable for many alternative crops.

Education and Training:

One topic that comes up over and over in the discussions is resource management education. A wide range of ideas from a school forest, a demonstration forest for visitors, forestry conferences, to a logger training program have been aired. A cooperative can use some of the value-added profits to support programs of their choice.

First priority seems to be in serving the needs of the students in the school system. Many projects could be done throughout the school year, in the field, classroom or workshop. Several teachers are already involved in the discussions and offer encouragement to support an educational outreach in the school.

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Financing resources:

Farm Credit Service has expressed considerable interest in financing entire cooperative facilities, as well as financing the initial investments that a forest owner makes when joining a coop and beginning the harvesting process. Local banks are also willing to loan money to coop ventures. Cooperative banks have been discussed as additional sources of loans, though no significant progress has been made there so far in the value-added forestry coop movement.

The initial costs of a timber harvest, trucking, and processing fees can be financed with a signature loan for one year at 8% through FCS. Projections are that value-added processing will double the net income of the forest owner, making the 8% loan a good option if personal finances require borrowing the money to start the improvement harvest system. Once a forest owner gets wood into the process, ongoing sales should cover all costs of forest management while producing a steady income.

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