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Planting Trees — Why Rather Than How

ANGELO COHN*

ABSTRACT — Three evergreen plantings over 25 years in a private woodland are described and evaluated in terms of reforestation, economics and personal satisfaction. Credit is given to government foresters and support from the Minnesota Department of Natural Resources (DNR) and the federal Forest Incentives Program (FIP). Changes in site preparation methods, selection of species and planting procedures are discussed as outcomes of research and field experience. Cost-benefits are assigned principally to human values reflected in family learning and enhanced appreciation of the ecosystem of rural Minnesota.

Forests, trees and timber have been much in the news, with national as well as local, individual attention being focused on woodlands in relation to other concerns of the times.

An energy crunch rekindles interest in wood as a fuel for direct burning and also as a factor in producing gasohol or solar energy. Proliferating demand for paper and products derived from cellulose grows without any apparent limitation. Programs to preserve, restore or enhance the natural environment almost always include a tree-forestry dimension. There are massive efforts directed by private businesses as well as government to make forests more productive.

The activities reported in this paper are hardly a major part of such programs, and they are not intended as how-to-do-it advice on the planting of trees. They are, however, the accounting of a modest experience with emphasis on the motivation for such plantings and the rewards, which were largely intangibles. This limited approach may, hopefully, encourage members of the Minnesota Academy of Science and others to undertake similar plantings.

This tree project was initiated originally for a negative reason, namely the apparent hopelessness of profitable farm use of 71.50 acres north of Park Rapids in Hubbard County, Minnesota, in the 1950's. The soil is sandy. That property had been utilized for various reasons. These included most recently as a businessman's fishing base; before that by five farmer owners or renters; and back around the turn of the century as a wood source for Walker lumber interests.

The birth of our first child, a daughter, stimulated interest in trees and created a positive motivation. The idea was to grow trees that would become marketable in time to pay for that child's college education. It seemed an ideal plan for the situation. Trees would grow and grow in value by phases over a long period of time. In less than ten years some small trees might be sold for table-top holiday decoration. Within the next ten years somewhat larger trees, or attractive tops, could be sold for better prices. Finally, there would be saw timber and improved land values in 30 or 40 years, according to projections by forestry professionals.

So a final crop of hay was cut on the clear area by a neighboring farmer who paid for the hay by discing about 15 acres after the harvest. Scattered woods covered other sections.

The project was launched by earmarking just \$25 for the starting effort. Seedlings, at a half-cent each for the common evergreen species, were ordered from the state nursery at Badoura, \$15 going for 3,000 trees. The rest of the money went to reimburse a man who drove about 50 miles to pick up the little trees and oversee the work. Milk, pop, sandwiches and \$2 were provided for a couple of youngsters who

helped with the hand planting. The regional forester supplied professional advice without cost. His suggestion at the time was to use a mix of species as insurance against blights that might attack just one type. Half of the order was for Norway or Red Pine, the other half was divided between White Pine, considered most desirable for eventual lumber, and Jack Pine, the fastest-growing, tough variety.

Space and rain assure favorable beginning

A fortunate accident and a gift of nature contributed to the excellent beginning of those trees. The discing, done with home-rigged equipment, established a pattern of seven-foot spacing between rows; whereas six-foot and often five-foot spacing were then most common. Then the rains came. For two weeks there was rain or drizzle or what the weather reports call "measurable precipitation" practically every day. That, too, was a rarity in the area.

Three years later a second daughter arrived in the family. A second future education would have to be financed, so a second planting of 3,000 more trees was scheduled. The previous operation was duplicated, except that the price of trees was a quarter-cent higher and instead of bountiful rain a spell of hot, dry weather followed that planting. By rough estimate our first planting had produced somewhere between 75 and 90 percent viable trees, and probably closer to the high figure. The "catch" from the second was so poor that only two or three trees survived out of every ten planted, as an average.

Again three years passed, and a third child, a son was born. No education-directed tree planting was attempted this time, but there was anticipation of sales of some small Christmas trees. Just about that time, however, the tree market changed as unpredictably as the weather. Artificial trees became popular, and cutting of evergreens from scattered small woodlots gave way to production on big commercial plantations and mass marketing. One November the operator of a filling station in a nearby small town purchased some of our trees for holiday selling, but his total order amounted to just \$75. By then, university tuition for a single quarter already had risen beyond that figure. Realistically, the dream of paying for anyone's college education with tree money was ended.

Financially, it was disappointing. Yet, as the trees and children continued to grow, other educational benefits began to develop. These became quite obvious because ours is a city family. Orientation of the children was basically urban, except for the tree plantation area. All three developed a healthy interest about the place in the country, its seasonal changes and special character at different times, the lake, the birds and animals, and the trees that soon grew taller than the growing youngsters.

Learning from nature

The spread from city to country life can be illustrated with an early observation by our oldest daughter when she

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Before the evergreens were planted, the final hay crop was cut on this field.
Results shown in cover photos.

was still at an age of "learning" from simple picture books.

As we drove by a nearby farm field, she noticed several large, brown, four-footed creatures behind the wire fence.

"Ooh, nice horsies!" was her excited comment. That called for a stop, a closer look, and an explanation that the animals were not horses but cows. Further into the field a few sheep provided the subject of another lesson. Those sheep had been sheared recently. They were smooth-skinned and hardly resembled the woolly lamb of song and rhyme that "followed Mary to the school one day."

The developing trees and non-farming of the land made the whole property more inviting for other animals, for birds, and for many growing things, with learnings to match. Animals or their tracks and tricks that could be observed and in effect "studied" within natural habitat have ranged upward from field mice, red and gray squirrels, rabbits, skunks, porcupines, racoons, fox and deer to an occasional bear. Songbirds and field fowl are more numerous, too, and of such great variety that they force frequent reference to guide books. Loons, gulls or blue herons are the chief entertainers at the lake bordering the tree farm; and the lake itself is the laboratory for observing not only fish but also snails, turtles, muskrats and evidence of beaver engineering works.

For additional proof of the educational impact of growing up along with the trees, the second daughter took her university degree in geography and followed that with employment that includes field work for the Department of Natural Resources. The son, like most boys, learned quickly how to climb trees much larger than any that had been planted during his young life span. Subsequently both of the latter two children have enjoyed the property for skiing as well as for boating in the summer.

A few years ago, 8,000 more trees were planted. These further reinforce enhancement of knowledge and financial support as reasons for reforestation. A call to the forestry office in early 1976 brought out Allen Wickman, who is designated as Private Forest Management (PFM) specialist for the DNR at Park Rapids. We walked through the property, old natural woods, remaining open space and the 25-

year-old trees of our early planting. While gathering data to draw up a management plan and suggest thinning, Wickman explained the newer federal programs of assistance in tree farming.

It was a strange time to be considering that because 1976 was hardly good for any kind of planting, and drouth conditions worsened as the summer progressed. But we could plan, and three specific suggestions were made, based on knowledge accumulated by researchers since the initial planting.

First, Wickman urged, the ground should be prepared by furrowing about ten inches deep. Second, the plow should follow the contours of the land instead of making straight rows. Finally, Norways or Red Pine should be set in almost exclusively rather than considering different species. The Norways had demonstrated maximum resistance to diseases and also are eventually suitable as timber.

Among the economic incentives mentioned was the Forest Incentives Program (FIP) which would reimburse up to three-fourths of the outlay through the Agricultural Stabilization Service or other allowances. There also were prospects for sale of some wood from thinning operations, plus tax deductions later. By that time the state had raised its tree price to \$30 per thousand, but a 20 percent discount was available for orders of more than 10,000 trees and the foresters could organize group purchases to gain that benefit.

Through Wickman's office, a nearby farmer with suitable equipment was contacted to do the furrowing later that summer. A price agreement was made after he looked over the ground and assured us that his tractor had sufficient power to pull through earth that had become rock hard from many idle years and the searing heat in that summer of '76. There also was talk of selective thinning, a process that Wickman said would improve the over-all growth by allowing more sun and air on remaining trees. Those pines were hardly lumber size, but they'd make adequate poles and posts. Income would be split so as to cover the cost of thinning and possibly some of the plowing.

Doubts as drouth continues

The planning was optimistic, but there was no break in the drouth and all in the family were deeply concerned. For by this time the three children had grown up. They took an active interest in the tree situation. Part of our concern related also to fires that began breaking out under the hot, dry sun. The worst fires were those much publicized, scorching thousands of acres 20 to 50 miles further south and around the state tree nursery at Badoura, from whence our new trees would eventually come.

Past experience had taught us something about the risks that farmers face constantly from uncontrollable natural conditions, for we had seen one planting prosper and an identical effort three years later fail dismally. We had learned something about the vagaries of agricultural marketing, too, from substitution of artificial yule trees for nature's product.

In family meetings called to discuss the situation there were arguments both ways, especially in relation to the fires. Lost trees were bad environmentally; but future demand for replacement might be favorable economically. The bottom line decision finally was to go ahead, order the trees and schedule the furrow work because of the payment that would come eventually under government programs which even city people could appreciate.

One September night the farmer brought over his plow and parked it at the edge of the work area. But nothing happened for weeks. The man and his heavy tractor had been called in to help the fire-fighting crews. No relief appeared when the fires finally came under control, either, again from a quirk of nature. Peat underground, brush on the surface, and the green tops of trees had been destroyed. But on those charred acres there were tree turnks by the thousands, both standing and downed. Most, as it turned out, could be salvaged for posts and poles, the very material that might have been salable after thinning our early stand. Even so, the risk seemed acceptable against the prospect of recovering up to three-fourths of the front money outlay.

Furrowing was held off as long as possible with the hope that fall rains might soften the earth a bit and hold down dust. But that never happened. The plowing was not done until the beginning of November, just about the last possible moment before freeze-up.

Nature remained obstinate into that winter. Our daughter went north in mid-February of 1977 and returned with the discouraging report that there wasn't enough snow for decent cross-country skiing. In fact, raw, ugly earth was visible through the thin snow cover in the furrows. Dryness continued well into springtime, and the sandy surface was as dusty as talcum powder right into April of 1977.

It was then too late to retract. So trees were set the last few days of that month and up to the first week-end of May, frankly with more hope than confidence.

Miraculously, a turn-around occurred in the weather by mid-month. There were good rains through June, and adequate moisture all summer and into a rainy autumn. The lake level, too, responded dramatically, beginning to rise again in September, which is normally a low, dry month. And exceptionally heavy snow fell in the winter that followed.

The educational report card

That latest planting is not yet "out of the woods," to use a pun for expressing persistent doubt in such situations, but educational benefits are worth assessing, regardless of tuition money that was never realized from trees. Light green tufts of pine needles in well-filled rows of tiny trees seem to indicate that the decision to risk planting will have been justified. At the roadside near the older pines a Tree Farm sign stands as a sort of diploma for efforts motivated for education.

More specifically, a \$585 federal refund went on the books. But it hardly reflects the totality of rewards. Sure, the value of the property at some future time has been enhanced. But how can one realistically price out appreciation of a bit of countryside restored to its forest condition or the realization among three city-bred youngsters of the dynamics of nature as dramatized with photographs of three college graduates standing in the shadow of trees that had been planted within their lifetimes.

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