

Land Utilization Along the Rainy River

DON R. HOY, University of Oklahoma, Norman

The Rainy River is located in the extreme north central portion of Minnesota. It is situated between the Lake of the Woods and Rainy Lake, and forms the United States-Canadian boundary for some eighty miles. The area is bounded on the south by the Beltrami Swamp and on the north by the province of Ontario, Canada.

PHYSICAL BACKGROUND. The physiographic features of the area are characterized by the lacustrine basin of glacial Lake Agassiz, and modified by the valleys of feeble post-glacial streams and rivers. The area is relatively flat and slopes gently toward the Rainy River. This gradient is small and good drainage is limited to narrow strips along the river.

The mature soils of this lacustrine plain lie within the Podzol zone. However, poor drainage of much of the area has prevented mature soil development. The soils are a complex of gray stony loams, peat bogs, sands, and small depressions of clay loams. All are derived from glacial fluvial deposits.

The natural vegetation association is characteristic of the fringe of the Boreal Forest. The dominant trees are white, Norway, and jack pine along with aspen on the well-drained lands, and black spruce, tamarack, and aspen on the lowlands. Considerable logging has taken place which has reduced substantially the number of pine. These stands are quickly replaced by aspen and birch. An understory of balsam-fir is found throughout the area indicating that this tree may be the climax dominant.

The climate is classified as humid continental short summer (Dfb-Koppen). The annual precipitation is approximately 25 inches, of which 75 per cent falls between April and September. The frost free season ranges between 100 and 110 days. The warmest month (July) temperature averages 67.1°F. January is the coldest month with a mean temperature of 2.6°F.

AGRICULTURE. The present agricultural pursuits of the Rainy River area are the summation of fifty years of trial and error farming. The area was once all timbered but is now largely cut over or second growth woodland. The percentage of land area included in farms is small. Agricultural emphasis has evolved from subsistence farming in the early 1900's to potato production in the late 1920's and early 1930's, to alfalfa and clover seed during the drought years of the mid-1930's to the present day production of hay and dairy products. This evolution has numerous reasons for development. Potatoes are no longer a major crop because of disease and farmer discouragement. Alfalfa and clover seed yields declined because of the cool, moist climate which prevented the seeds from forming. This was not true during the dry decade of the 1930's. The warm, clear summers provided an excellent environment for seed production, but with the return to normal climatic conditions in the early 1940's the seed harvest rapidly decreased in size.

At present the major emphasis is on hay and dairy products. To this end the area seems well suited. The hay is both tame grass and legumes. The grasses are usually timothy and brome while the legumes are alfalfa, sweet clover, and alsike clover. These plants are remarkably well suited to the environment and in many cases are found in a semi-wild state. Other crops found are generally cash crops. Listed in order of importance they are oats, barley, flax, and wheat.

LIVESTOCK. The livestock of the area is limited for all practical purposes to cattle and poultry. The vast majority of the cattle are dairy breeds (Holstein and Jersey) with small herds of beef animals scattered through-

out the valley. Poultry farming is not carried on as a specialty. Although there are large numbers of chickens and some turkeys, they are found in small flocks on almost every farm. Other types of livestock that are of slight economic importance to the area are sheep and hogs.

FARMSTEADS. Farmsteads in the area range in size from twenty to over 600 acres, with the average farm being about 160 acres. Of the total farm acreage more than one-half is devoted to permanent pasture. Thus, even if the size of the farm seems large in acreage, the total amount of land suitable for crops is small. The small acreage of tillable land per farm limits the earning power of the farmer. Most of the settlers came to this area because it was possible to acquire a farm much cheaper than in the older settled areas to the south and east.

FARM PROBLEMS. There are many farm problems which must be solved or compensated for before this area can become agriculturally important. Foremost among these is the matter of machinery and harvesting. The damp climate precludes the necessity of special attachments and machines. Tractors are equipped with tracks, combines with balloon tires, and a relatively new method of harvesting hay crops is used in which ensilage is made has met with much success. The hay is cut, chopped, and stored in one operation. By this method the chance of damage by rain is reduced to an absolute minimum. Other problems which are yet to be completely solved are capital, accessibility, and marketing.

FORESTRY. The second and most important aspect of land utilization in the Rainy River area is its use for forests. Many farmers supplement their income by working as loggers in the winter. They are either employed by the lumber companies or work on their own land cutting timber, then selling direct to the mills. The great majority of the total land area is classed as timber. Forestry in this, as in other areas, was begun with the idea of getting the lumber in the quickest and least expensive manner. Cutting was done exclusively by highly commercialized companies. On the assumption that all lands were to be cleared of stumps and developed into farms, the cutting was done ruthlessly. Young trees and seedlings were destroyed by slash fires which were permitted to run out of control. Recurrent fires since the logging operations have many times denuded vast stretches of land and have sometimes been attended by heavy loss of property.

White and Norway pine were the species on which the lumber industry was founded. The better stands of these trees were soon cut and the companies moved to better sites outside the area. Smaller companies moved in and continued logging the less desirable locations but on a much reduced scale. The State and certain lumber companies realized that the old methods of logging were not practical on a long term basis. With that thought in mind steps were taken to get the most economical cuttings and still leave the trees which were not of commercial size. Logging is now conducted at such a rate as not to exhaust the resource. Through the efforts of research, species such as aspen, birch, and tamarack which were at one time thought to be economically worthless, are being made into pulp, veneers, and mine timbers.

CONCLUSION

The Rainy River area is endowed with two potential systems of land use, one emphasizing agriculture and the other forestry. Agricultural lands occupy the sites where soil and drainage conditions combine with transportation facilities to provide favorable locations for cropping to be economically profitable. The woodlands are found on poorly drained and/or relatively inaccessible sites. Future agricultural pursuits may reasonably be expected to continue to be hay and dairy products. However the area is handicapped by its isolation. Available markets, accessibility, and capital are goals yet to be completely achieved.

Forests occupy most of the land area. Measures are being undertaken to exploit this resource but not to deplete it. The aim of the government, the farmer, and the logger is one of permanent forestry.