

# 10

## THE SOUTH NATION AND ITS ENVIRONS

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IN dealing with this topic allotted to me, I should like to say a word on the Nation River itself, what I mean by Conservation, its need, what has been done in the past, and, in my estimation, what should be done in the future.

### 1. THE SOUTH NATION RIVER

#### [a] Its Name:

There are two streams bearing the name of "Nation": the North Nation River and the South Nation River. The word "Nation" comes from the name of a small Indian tribe of the Algonquin blood, living on the shores of those two rivers, and called, because of its size, "La Petite Nation"—"The Little Nation", by the first French explorers.

The North Nation River, entirely located in the Province of Quebec, empties into the Ottawa River, at a point east of Plaisance, directly opposite the mouth of the South Nation River.

It drains land north of the Ottawa River, including the Papineau Estate, called "La Seigneurie de la Petite Nation"—"The Seigniorship of the Little Nation", which is now owned and operated by the Seigniorship Club Community Association Ltd., Montebello, P.Q.

#### [b] Its Drainage System:

The South Nation River drains land from eight of the eleven Counties comprising Eastern Ontario, or if you wish, Zone No. 5, of the Ontario Conservation and Reforestation Association. Its source is located four miles north of Brockville, in Leeds County. It runs through Grenville County, crossing Highway No. 16 at Spencerville, enters Dundas County at Heckston, crossing Highway No. 31 at Cass Bridge, runs into Stormont, between Chesterville and Crysler, then into Russell near St. Albert, going through Casselman, then into Prescott County at Lemieux. From there it runs north to Pendleton, then east to Riceville, taking a bend at Fournier, then north to Plantagenet Springs, crosses the C.P.R. short line, and Plantagenet village proper, and running north-west to Jessop Falls, it empties into the Ottawa River near Wendover. The length of the river, as the crow flies, is 75 miles, or, if we are to consider its main bends and meanders, approximately 100 miles, with a slope of 245 feet. The widest point of the drainage system is 35 miles.



*By T. C. Lovell.*

*South Nation River, two miles east of Roebuck.*

The area of the watershed nears the *million-acre* mark, or approximately, 915,600 acres, distributed among the eight Eastern Counties as follows:

78% of Dundas County  
77% of Russell County  
52% of Prescott County  
43% of Grenville County  
41% of Stormont County  
19% of Carleton County  
9% of Glengarry County  
2% of Leeds County

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Total—8 Counties

These figures and others on Reforestation have been supplied by

*Page One Hundred and Four*



Mr. A. B. Wheatley, Forester, Zone No. 5, to whom I am grateful for this service.

[c] Its Soils:

The South Nation River drains some of the best agricultural land in Eastern Ontario. The topography is fairly level and the drainage is a problem. The lands on the lower level are mostly composed of clay, clay loams and silt, with muck and peat bogs in spots. The largest area of muck land is the Alfred Peat Bog, which has been operated for peat fuel for nearly half a century. The high lands are in great part formed of sand, with occasional gravel and rocky hills.

[d] Its Inhabitants:

As to the inhabitants of the Nation River Valley, they were originally English-speaking settlers of the military type, mostly Empire Loyalists. Others came directly from the Old Country, this being the case with the Scots of Glengarry. Afterwards, the surplus of the population of the Province of Quebec found its way into Eastern Ontario, particularly in Glengarry, Stormont, Prescott, Russell and Carleton. To-day, the population of Prescott and Russell is 80% of French extraction, Glengarry, 50%, Stormont, 45%, with 42% in Gloucester Township, in Carleton County, and an odd sprinkling here and there—Dundas 9%, Grenville 6%, Leeds 5%. This immigration moved upstream following the development of the Lumber Industry, and the clearing up of new lands.

## 2. A WORD ON CONSERVATION

By Conservation I mean the preservation and the rehabilitation of our natural resources, mainly those directly connected with agriculture, namely: Soil, Water, Organic Matter, and Crops, whether field or forest crops.

(a) SOIL—To protect it against *water* and *wind* erosion.

*Gulley Erosion*: Striking examples of gulley erosion can be seen at School Section No. 5, Bradley Creek, on the Lemieux road, in Plantagenet South Township, Prescott County; at School Section No. 10, near Pendleton, also in Plantagenet South Township, Prescott County; near School Section No. 18, west of Bourget, in Clarence Township, Russell County, and north-east of the County Forest, also in Clarence Township, Russell County. At L'Orignal, on the Bay road of the Domaine or "Seigneurie de L'Orignal" (last Seigneurie conceded by the French Government, and the only one situated in Upper Canada, or Ontario), sliding occurs along a shore of approximately two miles, extending from the Lighthouse to School Section No. 2. The lands abutting the bay are affected to the extent of 15% of their size. The road, along the shore of the Bay, had to be moved in three times during the last ten years. In



*By Department of Public Works, Ottawa*

*Dredging the channel of the South Nation River, at the Village of Plantagenet.*

1944, 67 different slides occurred on this waxy type of clay soil, on a depth of about 25 feet, and in spots as wide as 80 feet.

*Wind Erosion* can be observed in the Village of Curran, in Plantagenet North Township, Prescott County; at Baker's Corner, north of Pendleton, also in Plantagenet North Township, Prescott County, and on the Grant road, near the County Forest, in Clarence Township, Russell County.

(b) **WATER**—to control and regulate surface water and to maintain ground water at a favourable level in the soil.

(c) **ORGANIC MATTER**—To conserve organic matter by establishing proper methods of cropping and reforestation, and by adopting a happy balance between forest cover and cultivated land.

### 3. THE NEED OF CONSERVATION

Is there any need of Conservation? We have floods, soil erosion, drought (1941, 1944), crop failures, and our land is denuded of trees. Where is our timber wealth? Where is our lumber industry? What has

happened to our numerous saw-mills? They have all disappeared with the woods. What more can we say?

We have deforested our land to an extreme limit, and at an excessive rate, without proper steps being taken, at that time, to replace, even on a small scale, what was being taken away from the forest.

[a] Extent of Deforestation in the Nation River Drainage Area:

1. 654,700 acres, or 71.5% is cleared land and is used for agricultural purposes.
2. 65,000 acres, or 7.2% is wooded land producing forest products.
3. 195,300 acres, or 21.3% is largely slash, waste and low land which is non-productive at the present time.

915,600 acres      100%

The Nation River Watershed drains a large percentage of the best agricultural land in Eastern Ontario. Unfortunately 21.3% of its total area, or 195,300 acres are made up mostly of slash land which is unproductive. I may add that even some of the cleared lands, that are classed in the marginal and submarginal group, should be given back to the forest. When one considers the revenue which would eventually be derived through reforestation, it places heavy responsibility on this generation, especially on its leaders.

[b] Rate of Deforestation:

Let me quote some figures:

Number of acres of each class of land based on the Assessor's Roll in the National River Valley for the years 1901 and 1934—

YEAR 1901			
Cleared Land	Wooded Land	Swamp, Slash, etc.	Total
543,000	252,000	119,200	915,600 acres
59.5%	27.5%	13%	100%
YEAR 1934			
654,700	65,600	195,300	915,600 acres
71.5%	7.2%	21.3%	100%

Please note that the wooded land during that period of *thirty-three years* has decreased by 20.3%, as against an increase in slash land of 8.3%, and also an increase in cleared land of 12%.

In Russell County the decrease in forest land during the same period is from 58.5% in 1901 to 4.4% in 1934, or a difference of 54.1% of the total area of the County which was deforested, irrespective of forest fires.

#### 4. WAS THERE ANYTHING DONE ABOUT CONSERVATION SO FAR?

Speaking of that part of the Nation River Valley that I know best, that is, Prescott and Russell Counties, I would mention the following projects:



*Dam and mill on the South Nation, at Spencerville.*

*By T. C. Lovell.*

[a] Drainage Schemes:

(1) The O'Brien Ditch (\$60,000.00) drained part of the Alfred Peat Bog. This was undertaken by the O'Brien family. The object of this project was to put more land under cultivation. Instead of that, it simply encouraged farmers to burn more land, the unburned part of it being mostly used for the collecting of moss, and the manufacturing of peat fuel.

(2) The Cobb Lake Drainage Scheme (\$60,000.00) reduced a large area covered by water to a tiny little creek.

(3) The Bearbrook Drainage Scheme (\$135,000.90). The lowering of the bed of this stream has helped to drain land which was not used for agricultural purposes before.

(4) The Dredging of the Castor River (\$80,000.00). Some work was undertaken along the Little Castor River, in Russell, Winchester and Mountain Townships.

(5) The Lowering of the River Bed of the Nation at Plantagenet (\$150,000.00). To date, two strips of 80 feet wide and approximately 8 feet deep through solid rock have been taken away in the rapids in the Village of Plantagenet. The Public Works Department, at Ottawa, is actually preparing plans to dredge another strip of the same width, and possibly cut the rock underneath the C.P.R. bridge. Farmers located in the flats above Plantagenet have complained for years that the water was held too long in the bottle-neck of Plantagenet. Some *thirty-five years* ago, the Hager Dam was blown up at Plantagenet, to enable the water to run through at a quicker rate during the time of the flood in the spring. (\$20,000.00 were given by the Federal Government to Albert Hagar, M.P., for his dam. He in turn took steps to blow it up.) The river is actually being dredged for exactly the same purpose.

The cost of all these schemes was approximately \$500,000.00.

It is true that these projects have added to the area of land under production, and have enabled the farmers to sow at an earlier date the flooded parts of their farms, but they have considerably lowered the water level in the streams and in the surrounding soils, with ill effects on springs and wells and on the growing of crops, especially in years of low precipitation.

[b] Reforestation Projects:

(1) Rockland Plantation: In 1914, the late Senator W. C. Edwards, owner of large saw-mills in Rockland, planted, under the auspices of the Federal Commission of Conservation, 16,000 Red Pines and 20,000 White Pines on pasture fields, near the town of Rockland.

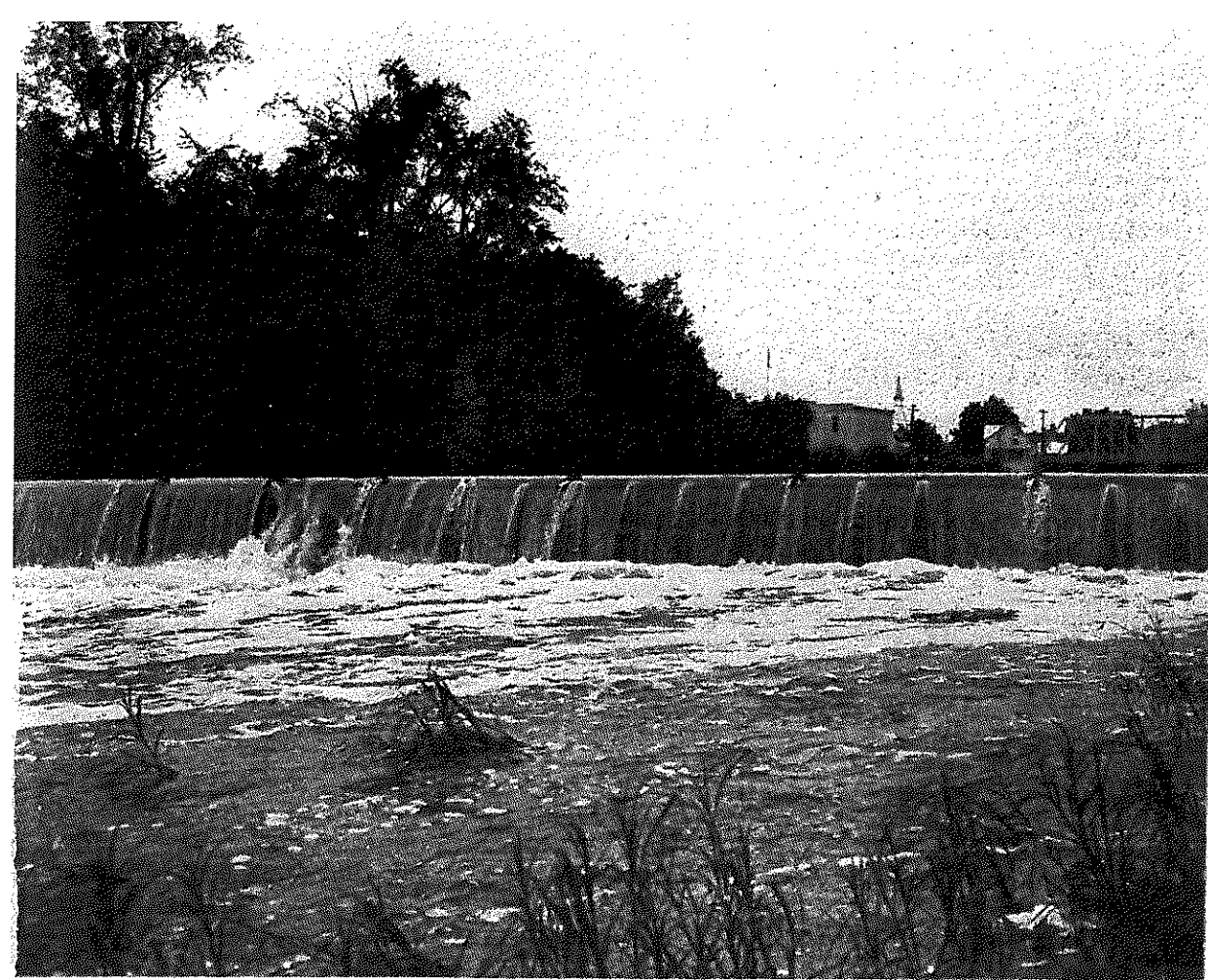
The White Pines were seriously affected by insects, but the Red Pines are showing very nicely, and, as a matter of fact, this plot is considered to be one of the best, if not the best in the Province of Ontario.

(2) Plantagenet Demonstration Woodlot: A small demonstration woodlot was established and planted in 1922 and 1923 near Plantagenet. It comprised an area of eleven acres, with 12,500 conifers, half Scotch and half Jack. The Scotch did not do well, but the Jack Pines are coming on very nicely.

(3) Waste Land Utilization: In 1926, a general campaign was put on in Prescott and Russell Counties inviting people to make a better use of their marginal and submarginal land -

1. For the growing of small fruits and vegetable crops for domestic canning purposes. Small domestic canning establishments, 135 in number, were started.
2. By reforesting privately or otherwise larger areas which could not profitably grow field crops.





*By T. C. Lovell.*

*Dam at Chesterville, on the South Nation River.*

(4) Committee on Reforestation: In 1927, to follow up this work, a committee on Conservation and Reforestation was appointed by the Counties' Council with Mr. Marshall Rathwell, Reeve of Cumberland, as Chairman, and myself as Secretary-Treasurer. Mr. Rathwell has been Chairman of the local committee for all these years, and he has been elected again this year for the 18th consecutive time. May I be permitted to compliment him, and to pay a public and a much deserved tribute to his contribution to Conservation and Reforestation, not only as Chairman of the local committee, but as Vice-President of Zone No. 5, and as 2nd Vice-President of the O.C.R.A., which position he still occupies.

(5) County Forest: In 1928, the Prescott and Russell County forest was organized with 1,200 acres. It has now reached the 8,000-acre mark, and it is our hope and ambition to keep it growing.



*Courtesy of Mr. Frank Salter.*

*Farmstead isolated by flood of South Nation River. Scenes like this are often seen, in flood time near Cass Bridge.*

Number of trees planted within the Nation River System:--

Private Planting. ....	2,200,000 trees
Municipal Planting. ....	800,000 trees
County Forests. ....	2,724,500 trees
	<hr/>
Total. ....	5,724,500 trees

## 5. WHAT SHOULD BE DONE IN THE FUTURE

So far, Reforestation and Conservation projects have been carried on at random, in a haphazard way, and at the favour of local circumstances, opportunities, or leadership. In the future, work should be undertaken in a more systematic and aggressive way. Plans would have to be worked out, and steps taken to implement them. In other words, a complete survey of the Nation River Watershed should be made and developments drafted ahead, to ascertain that no mistakes will be made in their execution, and that the highest possible efficiency will be attained.

In this regard, two things strike me as *essential* and *urgent*:

1. *A happy proportion between forest land and crop land* should be established, taking into consideration that in agriculture, the size of a farm is less important than the intensity of its production.

(6) Forestry Field Day: In order to popularize reforestation methods, a Forestry Field Day was held in Prescott and Russell, in the Fall of 1938. This was largely attended by local people and by delegates from surrounding Counties.

(7) Sea Sand Reed Experiment: In June, 1929, an experiment was undertaken to control blowing sand, in the vicinity of Curran, by sowing a plant named "The Sea Sand Reed" ("Ammophila Breviligulata"). Although slow in developing, this plant has proven effective in holding down blow sand. It is, however, of very little value to stock, either as pasture or as hay, because its texture is very coarse and woody.

(8) Protection of Catchment Basin of Springs: Reforestation of the catchment basin of springs feeding the Plantagenet Waterworks was inaugurated in 1939. Up to date, the Plantagenet Police Village has acquired 225 acres. Already 25,000 trees have been planted. Plans are being made to plant another 15,000 in 1945. Similar work has been undertaken to protect the Waterwork System of the Village of Bourget, and also the Waterwork System of the Village of Clarence Creek both in Clarence Township. Other projects are under way to shelter privately-owned waterwork systems for individuals as well as for groups of farmers.

(9) Other County Forests: In 1938, a second County Forest was opened up in Lanark County, and in 1940, a third County Forest, "The Limerick", was organized in Grenville County. The Lanark forest is not in the South Nation River area, but is within Zone No. 5. Demonstration woodlots were planted, to the extent of 200 acres, in Glengarry, Stormont and Dundas, for educational purposes.

#### TOTAL LAND UNDER REFORESTATION

The total acreage of land devoted to reforestation in the South Nation River Watershed is as follows:—

Prescott and Russell County Forest.	8,000 acres of which 3,000 have been planted.
Grenville County Forest.....	600 acres are located in the watershed, out of a total of 1,200 acres.
Private Planting.....	3,000 acres at normal spacing.
Total.....	11,600

It is estimated that not over 11,000 acres of non-agricultural land have been reforested during the past thirty years or so. This represents a little better than 5% of the total area unsuited to agriculture. *At that rate, it will take 570 years to finish the job.*

2. *A thorough study of ground water should be made, with a view of bringing up the water level in the soil to a proper height, by damming streams at strategical points.*

This policy would help to keep up our wells and springs, and would bring up the water table to a point where it may be readily available to crops. It is useless for me to go into details, as those ought to be left to expert hands.

Let us hope that long overdue action will be taken, in the near future, to make the best possible utilization of land in the Nation River Valley, for the benefit and the comfort of all those concerned.

I thank you.

#### DISCUSSION

DR. J. H. MUNRO: This project, as given us by the speaker, is something that is rather intriguing from the point of view of comparison with the Ganaraska scheme which has already been surveyed, in that the Nation River, on which the population of portions of eight counties in the most easterly part of Ontario depend, passes through a rich agricultural district, low flat land, with very few hills and ultimately finds its way into the Ottawa River. Over a great period of years the forests have been mined in these counties; have been denuded of trees. The result is now being shown in the agricultural community by the falling of the water table and lack of water in the river on which the whole population depends.

It is a problem which will have to be approached from a different point of view from that of the Ganaraska, in having the Nation River Valley surveyed, in that a number of thickly populated villages are in the area and all of them depend on the river for their water supply, and in some instances are large users of it at some seasons of the year. One is Chesterville where the Nestle's Food Products is located and which depends on the Nation River for its water supply and at times that company has to go upstream and pump from deep holes in order to get a sufficient supply.

Now, if anything brings home the need for reforestation, I think the best example in Ontario is in the Nation River Valley and I hope at this Conference that some action will be taken with a view to altering the conditions of flood in spring and drought in the summer.

MR. KING: May I add something to what Mr. Munro has said. I happen to be connected with the firm in Chesterville requiring this water. I have been in Chesterville twenty-five years, in charge of the plant and I have had a chance to observe the decreasing amount of water. It has been going down each year to a point where the situation has become so serious that in 1941 we pumped water from above the town to our pool from August 9th to October 14th. This year we had to start on October 6th and we pumped until December 5th when the storm drove us out of the river.

Our company supplies a market for 450 of the best patrons in Ontario in the milk line, and it is very vital to them as well as to ourselves, that something be done in and around Chesterville.

MR. G. H. BARKLEY: I quite agree with Dr. Munro when he says the Ganaraska and the Nation watersheds are not alike. We have our towns and we have all our sewers which empty into the Nation River, and I tell you it is in terrible shape. If it hadn't been for the Nestle Company pumping water down there last summer we wouldn't have had fire protection.

MR. THOMAS: I would like to compliment Mr. Larose on the paper that he has presented to-day. I would like to have heard him comment, if time had permitted, on the types of fish that are rapidly disappearing. This was also a splendid means of attracting tourists. That feature too has disappeared.

I would like to endorse Dr. Munro's suggestion as to the type of survey to be done in that section of the country.