

THE STE. SCHOLASTIQUE INTERNATIONAL AIRPORT

A STUDY OF ENVIRONMENTAL IMPACT

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In the summer of 1966, the Air Services Branch of the Department of Transport in Ottawa initiated "an elaborate and careful" study of the possible development and evolution of Montreal Civil Aviation. Then on March 27, 1969 the Federal Government announced that Ste. Scholastique had been chosen as the site of a new international airport and expropriation plans were filed for 95,000 acres northwest of Montreal. Within months of the announcement soil test holes were being dug and firm commitments regarding the location of quarry sites, runways and access roads were being made. By the summer of 1970 the clearing of land for the runways, aprons and taxiways was completed, the main service road was under construction and railway engineers were in the process of choosing a new right-of-way through the airport which would conform to the expected industrial development of the area.

At this point Dr. W. Schneider, chairman of the National Research Council, and others, made plans for an ecological study of the airport area. Dr. Pierre Dansereau, then professor of ecology of the University of Montreal, was named director of the project with supporting scientists from five universities. Since the plan was to study the total ecology of the airport area, the researchers chosen to take part included a geomorphologist, plant and animal ecologists, a geographer, a chemical engineer with special interests in pollution problems and a social psychiatrist with an interest in human ecology. Unfortunately, funds for the project were strictly limited and the researchers were not able to study the resources of the area or the effects of the new airport in detail.

The geomorphologists provided a description of the physical units which

make up the area and descriptions of the events which sculptured the landscape since the glaciers retreated. The plant ecologists concentrated on the masses of vegetation, their structures and their dynamic nature. The land-use geographers drew up three basic maps, two based on air photos of 1927 and 1966, and the third a detailed ground-site survey carried out in 1971. These maps showed clearly the accelerated rate of change in land use in recent years. The animal ecologists determined the animal resources of the area, one group taking a community activity approach while a second looked specifically at the bird resources, particularly those which could be a hazard to aircraft. The human ecologists studied the view residents have of their environment and gained some appreciation of the state of the mental health of the community. The last group, whose principal preoccupation was a concern for possible pollution, also became responsible for the final integration of all the studies.

To date there have been in the NRC study eight reports ranging from about 50 to 300 pages, about 20 maps, and several other nearly completed pieces of work. In retrospect, we can see that the greatest challenge lies not in providing reports on the ecology of the airport, but rather in using the ecological data provided to design and administer the airport sensibly by providing and maintaining a quality environment while making the best possible use of the natural resources.

The following is a summary of the study.

The Area

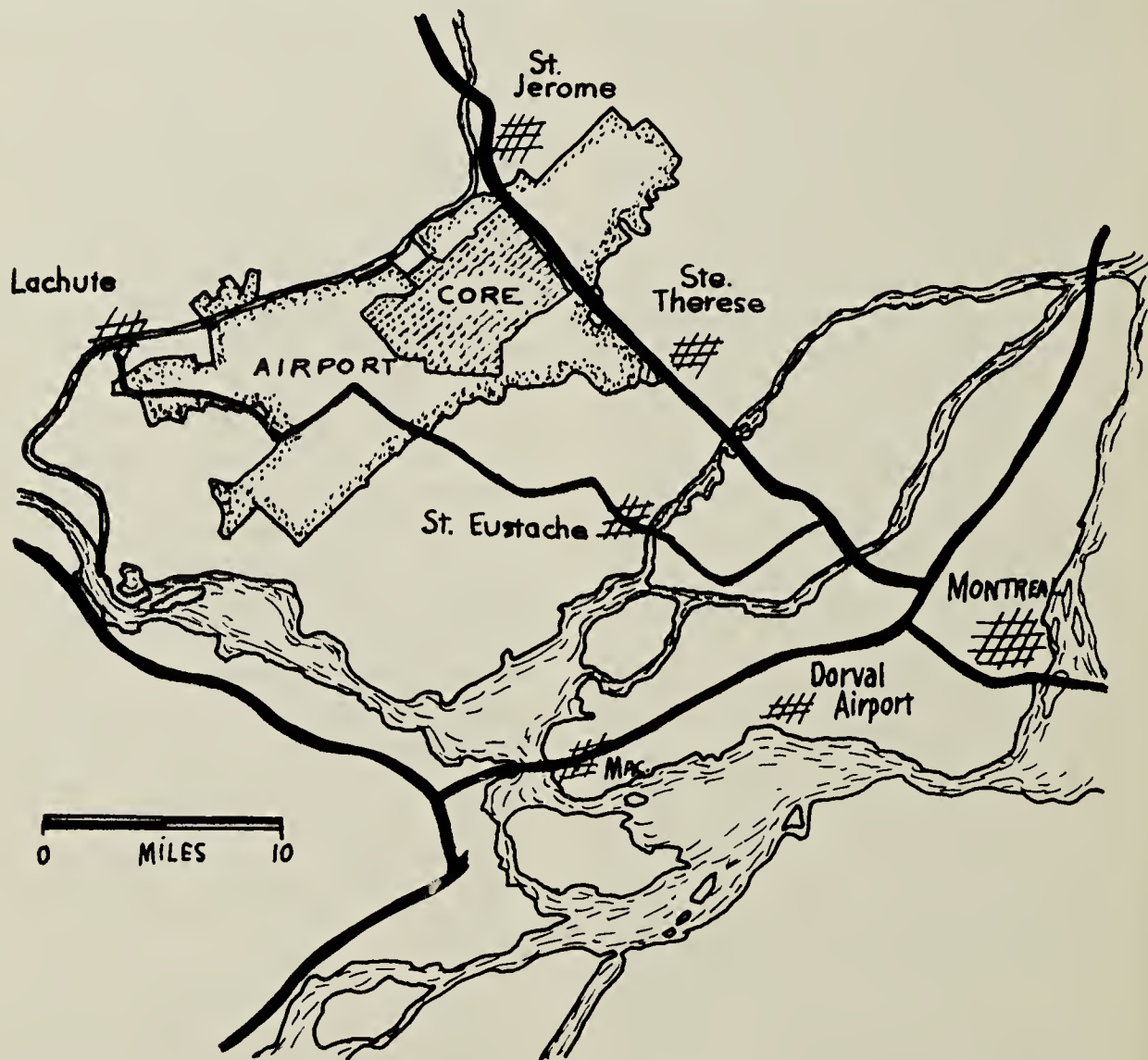
The location of the airport and runways appears to have been chosen after consideration of criteria, most of which dealt with air and land

traffic routes now and in the future. The size of the area to be expropriated was determined by estimating the limits at which the fulltime operation of the airport would not cause complaints by neighboring residents. The precise boundaries were drawn along present lot lines as close to the theoretical complaint limit as possible. This resulted not only in the acquisition of an immense piece of land, but one which could be characterized by its ecological diversity, possibly even a capsule example of the St. Lawrence valley plain.

The general orientation of the airport is from southwest to northeast, along the northern edge of the St. Lawrence valley at the base of the Laurentian Mountains. Except in the most western region where the airport encompasses a small portion of the granitic Laurentians, the northern boundary consists of the North River, which is polluted from the untreated

discharges of several Laurentian villages, towns and industries. Along the course of the picturesque meandering river are a few oxbows and some spectacular sand dunes, nine million tons of which are destined to become the base of the airport runways. As we look to the south from the river across the sand we can see grey birch at the far edge of the dunes. Beyond these are stands of spruce, hemlock and pine interspersed with stands of aspen pioneering on abandoned fields and finally the predominantly maple forests which form the largest part of the skyline.

The crest of the hill is mostly composed of glacial till, but the plateau which extends to the south, is a mosaic of soils and ecological communities. Almost at the centre of this plateau is a large bog about two square miles in extent. Around the bog are mo



Map showing size and location of the new international airport in relation to the present Dorval Airport on the Island of Montreal.



An aerial view showing the land use pattern of the Ste. Scholastique airport area. Treed areas are on glacial till.

aines, like islands of rubble, protruding from the large expanses of heavy clay deposited not so long ago by the Champlain Sea. Scattered about are small patches of muckland, rich in organic matter and often above a layer of pearl white marl sometimes reaching nearly five feet in thickness. In several areas but particularly to the southeast are large beaches of sand of varying thicknesses deposited over the clay base. Because of their low fertility many of the sand and till areas were not cultivated and the forests which have remained have been a source of saw timber, firewood and maple products since colonization. For the most part the rich clay, loam and muck soils are cultivated. Hay, corn and pasture grasses are grown for dairy cattle, the basis of the agricultural industry of the region. Scattered among the dairy farms are the occasional fields of oats and wheat, sod grass farms and in some areas where irrigation has been installed there are small fruit and truck farms.

At the southern limit of the plateau, there are deep eroded gulleys which lead to the floor of what once was the Ottawa-St. Lawrence riverbed, some twenty feet below. The rim of the plateau, or the shore of the old river, is definable over a distance of about 20 miles between St. Hermas to the west and Ste. Thérèse at the extreme southeast corner of the airport. The soils in the old riverbed are largely derived from marine clay and except where there is poor drainage, the land is used for farming much in the same way as it is on the higher plateau. Although there are some maple woods and a few cedar thickets on the lower plain, the trees which are most impressive are the tall elm and ash which grow along fence lines and the round clumps of willow which line some of the streams. It is in this area during the summer that one feels the impact of tragedy of the Dutch elm disease which is now killing the trees which for so many years provided shade to clusters of passive Holstein cattle.

Some people claim that much of the character of the landscape and people can be seen in the fences used. There are no dainty little white picket fences or strong thorny hedges in the region and there are few steel post and barbed-wire fences. The fences of the region, rather, conform to the resources of the land. On the main plateau where there are large amounts of stone, either ice rafted or deposited as glacial till, the older fences are commonly made of stone or sometimes a combination of stone and wood. In the more wooded areas many rail cedar fences still exist attesting to the fact the cedar has been continuously exploited and that no cedar large enough to split has been found for some time. Where the farms are on the large flat expanses of clay, and cedar is not available, farmers have compromised with the times and have strung page wire on cedar posts.

Farms in this part of Quebec are for the most part long and narrow and the houses are usually built a few feet from the roads which tend to run through the centre of the best agricultural land. The odd ornamental maple or butternut tree might be grown near the house, but in general the farm buildings stand stark and unprotected from the elements. Toward the ends of the narrow strips of land are the woodlots of varying size and quality, most of which used to be far more exploited for wood and sugar products than they are now.

The people of the land are warm, friendly, resourceful, but have no time for transients and intruders who simply possess houses without working the land. They communicate extremely little with the cool urbanites. Land and houses are recognized by the names of the traditional occupants rather than by their numbers. Social contacts seem to be more frequent with family than with neighbours, and when extra hands are needed, these are usually provided from among family members. Unlike the situation in the Gaspé, however, where one tends to see clusters of the same names on mail boxes, here families do not tend to concentrate. Surprisingly

enough, even though neighbours are independent of one another, it seems that once a critical mass of farmers leave a *rang* (road on which farm lots front) the emigration of the remaining farmers accelerates and they tend to move to areas where their neighbours had relocated.

The Changing Environment

Once we started working on the area it soon became apparent to all researchers that it was far too late for baseline studies. This was not only true for the operational area but also for a large part of the 77,000 acres around the core. The expropriation of the land had virtually transformed the personalities of the residents and even the people who travelled through the area. Possibly the sense of imminent disaster or possibly the lack of trust in Government agencies led many to throw in the towel and move even when their houses or farms were not threatened. Before they left, many cut the saleable timber out of their woodlots and abandoned the land without consideration of the future. Within days or sometimes hours abandoned houses were pillaged and vandalized. Eventually fence posts and any good fencing disappeared. Soon the vandalized houses had to be burnt and their remains buried and the land was put to rest after more than a century of exploitation.

Farther away from the core area there was less abandonment; however, even in these areas there seemed to be a great deal of turnover in the occupants of houses and this will undoubtedly change the life style of the area. A large number of the new residents were not there to farm, and some of the more aggressive local farmers were quick to exploit the unoccupied land. Abandoned hay fields were usually only harvested, without the addition of the lime and nutrients necessary to maintain the land.

Only the land form is unaffected by the sociological changes occurring in the area. Changes in the age structure and composition of the vegetation are occurring quickly because of the illegal exploitation practices committed

during abandonment. Now you can find woodlots which have been reduced to merely a fringe of trees around a slash pile. New habitats are being created for the native animals. Some populations of animals, like the voles, coyotes, fox, marsh hawks, are faced with unlimited resources while others like the rats become temporary problems while they seek to reestablish themselves in the remaining buildings.

Reflections on the Grand Design

The Ste. Scholastique airport with its large control area was a worthwhile concept. This arrangement opened all kinds of possibilities as far as land management was concerned. It could have been the first experiment in socialized land use in a non-socialistic state. It certainly should have been made into a model of proper land use in a country where up to now speculation, urbanism and industrialization, the keys to "sound economic growth", have always seemed to dominate the themes of master planning

and where historic events have carved lot boundaries which had made the rational use of natural resources almost impossible.

As things stand now the Ste. Scholastique Airport Grand Design will likely be just another large airport with spectacular long runways, large buildings and high control towers. This gargantuan masterpiece will be set in a wasteland of abandoned farms and poorly managed resources where the owners, like outdated irresponsible industrialists, will insist that it is not economically viable to protect the land and make proper use of it.

This predictable situation (which shows signs of becoming fact) will have come about because authorities who run airports have neither the inclination nor the desire to manage people other than those who are at work at the airport. Oddly enough, it was because they did not want to be bothered by neighbours that the authorities decided to buy all the land around the airport core.



A dead elm in an old farm pasture. This picture also depicts the landscape in the old river channel in the southern portion of the Ste. Scholastique airport zone.

With 20-20 hindsight solutions seem simple and the following thoughts might have been useful if such Grand Designs were still a gleam in the eye of politicians.

First and foremost, airport core administrations should be a separate entity from the buffer zone administration. In this way there would be much less likelihood of plundering the buffer zone for the sake of the core area. If the core area, for instance, saved 10 million dollars because it was able to get sand and stone from the buffer zone, then this saving should be a credit to the buffer zone account and not to that of the construction of the airport proper.

Second, a task force of a few wide-awake conservationists should fly over the area to determine the most obvious natural features which must be saved. If this had been done at Ste. Scholastique, the sand dunes would never have been massacred. In fact, conservationists would not have even let them go in to make the crater-like

irreparable probe holes to evaluate the quality and quantity of those particular sand resources. The conservation task force might also set priorities for studies which might very well show that some areas might contain unique flora or fauna or natural communities. The group might point out sources of pollution which should be controlled as part of the cost of land management. *Belle Riviere* (Pretty River), whose head waters are the bog of the core area, is an open sewer for the town of Ste. Scholastique, the wastes of a rendering plant and a cheese factory all located on the airport site. This river is so polluted that one can stand on an old dam at an abandoned grist mill, just below Ste. Scholastique, and watch the gases bubble up to the surface of the slimy green water. If you can stand the smell, the pond is really very pretty, framed by healthy overhanging bright green willows. Because of the potential indirect hazard to aircraft, the fact that most urbanists understand the



The beginning of the construction of the Ste. Scholastique 2½ mile runways which will be suitable for the jumbo jets and supersonic transports.

mplications of solid waste disposal and the low remedial costs of cleaning them up, most of the dumps have been closed and covered over. Strangely enough, the largest dump in the region located in the northeastern section was excluded in the expropriation and now forms the boundary of the airport at one point.

Third, planners should have on their staff a group of people who understand the land, its people and their institutions. This group could be made up of community resource developers, rural sociologists, extension specialists, land-use agronomists and ecologists. These people could initiate designs, but their most important role would be to evaluate the plans of the town planners, urbanists and engineers who in our present system have all the power to decide what will be done with the soil and living rural landscape. A group such as this completely enmeshed in the day-to-day operations of the management of the land at Ste. Scholastique could have foreseen and possibly suggested alternate methods or procedures which would not only have kept the people on the land, and the land in production, but in all probability could have brought the whole of the airport including the land and its people into a harmonious productive unit.

Fourth, the order of priorities should be changed. Before hiring the first soil test company or group of civil engineers, the buffer zone land administration body should begin applying their land management plans. At Ste. Scholastique, because the land planning program was late and indecisive, half-baked plans kept appearing in publicity releases and unfounded rumours spread making the authority ineffectual. The land administration body should also be responsible for the application of acts and laws such as those concerning pollution or the misuse or abuse of the land by their tenants. Administration should also set and enforce rigid rules on agricultural and forestry practices which have been accepted by the rural land-use planners.

Fifth, baseline ecological studies (in their broadest sense) should be done now in all areas susceptible to change through grand designs and particularly at the limits of urbanization. It is most frustrating to have to spend time on a study in the St. Lawrence basin trying to determine the most important elements of the animal communities, or the relative importance of major soil types such as clay, sand, till or muckland to the animal fauna when you should be studying potential impact of changes in land use. The Canadian Land Inventory took us one step nearer to this objective, but when we were confronted with a development such as that of Ste. Scholastique, we realized the need for a more detailed study of a greater number of species and also the need to integrate the present land use and social factors into one system.

The Last Word

Perhaps the Government now feels it has bitten off more than it can chew. Possibly the rivalry between the Ontario and Quebec politicians concerning the size difference between the Pickering, Ont., and the Ste. Scholastique airports will inevitably make the powers decide to give back half of Ste. Scholastique to the natives. I, for one, would be sorry to see this happen, not that I think the experiment has been a success, but because the completion of Ste. Scholastique will give planners, administrators, resource scientists, and even politicians an experience and many lessons which should profit all Canadians.

GIFT SUGGESTION

Give a 1973 membership in SNHS to someone this Christmas. The December 1972 *Blue Jay* will be free to anyone taking out a new membership at this time. Send \$3 to George Dodd, Box 1321, Regina.