

LAND USE POLICY FOR SASKATCHEWAN

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INTRODUCTION

Five hundred million people in the world are malnourished and the demand for food will increase during the next 25 years because populations are increasing and because there is a worldwide degradation of the land. More marginal land is being pressed into crop use, forests are rapidly being removed for fuel, and deserts continue to advance. By the end of this century neither the United States nor Canada will be able to spare any food for export.⁸

In Canada crop production is centred in the prairie provinces where the growing season is short, organic matter is limited and precipitation is sparse. The main crops are hard red spring wheat and other small grains. Canada produces only about 3% of the wheat grown in the world. In yields of wheat per acre Canada ranks low and is gradually falling further behind other wheat producing countries. After the Second World War Canada ranked twentieth in yield of wheat per acre; today Canada ranks twenty-eighth. Since the war other major wheat producers have increased wheat yields per acre at rates of 0.5 to 1.4 bushels per year, whereas Canada's average yearly increase in wheat production has been only 0.2 bushels per acre.³

The total area of Saskatchewan is 161 million acres but 8.8 million acres of this is covered by lakes, rivers and other bodies of water. Over one-third of the total area lies in the Precambrian Shield where there is very little soil that could be used for farming. In southern Saskatchewan, which produces 62% of Canada's wheat, there are 46,400,000 acres under

cultivation.¹² This means that 30% of all Saskatchewan is already under cultivation (the total amount of cultivated land in the world is only about 11%).

Obviously land is needed for the growing of food, but there are other needs and uses for land. In addition there is now a universal awareness of the natural environment and of the necessity to preserve significant amounts of that environment. In this brief on land use in Saskatchewan the naturalists' point of view will be given and it will be emphasized that land use policies must incorporate sound principles of ecology.

SASKATCHEWAN NATURAL HISTORY SOCIETY

The Saskatchewan Natural History Society is a nonprofit organization containing over 2,500 members and their families. The members include people from every profession but many are farmers especially interested in the land. The society was formed to speak for nature and for all of our natural resources. From its beginning the society has published a quarterly natural history journal, the *Blue Jay*, which tries to create more interest in and more understanding of nature. At each annual meeting resolutions have been passed urging preservation of nature and conservation of our resources including retention and conservation of water.

We proposed and supported the idea of a National Grasslands Park in the area between Killdeer and Val Marie. We believe that if a park is established in this area then it can be demonstrated that parks are *not* primarily for people, they are *not* primarily places for boating or swimming or golfing. Parks are places where nature has top priority. We

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Swathing wheat

Gary W. Seib

believe that a grassland park will allow all Saskatchewan people to see and learn something of the beauty and value of native grasslands. We believe that most visitors to Saskatchewan are anxious to see something of the wide expanse and diversity which was southern Saskatchewan before it became primarily a wheat growing area.

Members of the SNHS have many different interests but they are unanimous in the belief that we need a land use policy which recognizes the value and importance of nature. The Society through the years has consistently urged preservation of habitat and landscape diversity, protection of endangered species, improvement of environmental quality, and the establishment of ecological reserves.

LAND USE CONFLICTS

It was unanimously agreed by the 36 delegates attending the first land use workshop, February 25-27, 1976, that there should be a Saskatchewan Land Use Policy.

This unanimity as reported in *Land*

Use Workshop Summary Report results from land use conflicts and from growing knowledge that there has been misuse of our land. Saskatchewan land use policies to date have given priority to the settlement of as much land as quickly as possible. Private ownership has been given preference over social benefits. Extraction of primary products (especially minerals) has been given priority over all other uses. Environmental protection has been given low priority and much of the responsibility for land use planning is in the hands of agencies which have no interest in the environment.¹⁰

Saskatchewan's Land Use Policy in the past has subdivided the responsibility for land among different agencies each one interested primarily in the quick extraction of a resource and the economic gain that could be obtained from that resource. Land became a commodity subject to speculation and to excessively high monetary values. Good farm land has been taken over by cities, towns, highways and industries. Wetland and other natural areas have gradual

y been taken over by farms and ranches. The new policy must be under one agency, must consider all uses of land, must put less emphasis on immediate economic gain and more emphasis on quality and permanence of living in Saskatchewan.

The *Land Use Workshop Summary Report* does not stress that 'soil' and 'water' are the two most basic elements involved in land use.⁶ Since they are Saskatchewan's most valuable assets their conservation must be the first consideration in every aspect of the land use policy. Because 'soil' and 'water' are national assets no provincial government, municipal government, industry, group of people or private individual should have the right to exploit them for private gain as they have in the past. 'Soil' and 'water' belong to the future as well as to present generations and the land use policy of the future must ensure that they are not abused by any user of land.

NEED FOR LAND USE POLICY

Naturalists recognize that man is completely dependent on nature for his food. In addition, much of man's shelter, paper, clothing and medicine comes from plants. This dependence on nature has led to the domestication of some plants and animals. All living species have a right to exist and it is man's responsibility to preserve the habitat which will allow them to continue their existence. Natural areas not only contain a diversity of species, and a genetic heterozygosity within species, but provide quality of life and some guarantee for the future.

Since much of southern Saskatchewan has been settled and used for the growing of cereal grains we must consider how efficiently and permanently this land can be farmed. First we must remember that the land was covered by glaciers only 10,000 years ago. When the area was prairie, organic matter slowly accumulated to form top soil. Under cultivation, especially during summerfallowing, 90% of this organic matter has been

lost.⁹ Second, since the natural prairie was dominated by grass we know that water in the area is limited. In spite of the need to conserve water, which does not easily penetrate cultivated fields, and which needs organic matter for its retention, there is increasing evidence of ditching.⁷

Not only do naturalists recognize that agriculture has abused the renewable resources (soil fertility and water) but they see an instability in crops which is absent in natural ecosystems. This instability is particularly evident in the monoculture of modern agriculture and forestry. Emphasis on short-term economic objectives which often fail to consider all of the production costs have led to uniformity of product. The uniform crop is a perfect environment for various plant and animal pests hence biocides must be used to protect the crop. Even with chemicals it is not always possible to protect the crop, e.g., corn blight on U.S. hybrid corn.¹³

Since 1962 naturalists have questioned the use of all chemicals, fertilizers as well as biocides, though it is generally admitted that some chemicals must be used.¹ Partly, the problem arises from the accumulation and concentration of some poisons to the detriment, and endangering the very existence, of some species. Partly, the problem is one of uncertainty about the long-term effects of synthetic chemicals. Then there is the certainty that there will be human error which may result in gross contamination of the environment, e.g., the P.B.B. episode in Michigan.²

Naturalists in Saskatchewan recognize that agriculture is the largest user of land. There are also other legitimate uses of land, including settlement, industry, mineral extraction, highways and recreation. Each of these uses can disrupt the balance and the recycling which takes place in the natural, diverse ecosystem. We hope that, when land is used, there will be very careful consideration of environmental effects and that there will be serious effort to produce only minimal environmental

damage. Saskatchewan could, for example, suffer serious down-wind damage from strong acids (H^2SO^4 and HNO^3) produced from exploited Alberta tar sands.⁴

Finally, but most important to naturalists, we are aware that populations of many species of plants and animals are becoming dangerously low. There is a rapidly growing list of rare and endangered species and the main cause is habitat change. On large continental land masses species are not normally subject to extinction, however, some of our native species are already extinct and it is estimated that about 10% of our native species are rare or endangered. Canadians do not wish to be responsible for causing the extinction of any more forms of life and some suggest that small plots be left for native plants and animals. Unfortunately, if these areas are small they, like islands, contain small populations and some of the species may become extinct.¹¹

LAND USE GUIDELINES

I AGRICULTURE

Naturalists believe that the priorities in agriculture have been wrong. Land (like air and water) is not a commodity, it is a resource. Agriculture's main aim should be efficient use of land with long-term productivity receiving more consideration than short-term economic gain. We would like to stress the following guidelines:

1. Complete freeze on all plans to increase acreages for cereal crops. Once marshes, grasslands and other valuable natural ecosystems have been plowed there is no way they can be converted back. Until there is an effective land use policy no additional lands should be broken.
2. Complete freeze on all plans to increase acreages of tame grass at the expense of native grasslands. Grazing lands may be increased by planting grass and alfalfa on marginal lands now used for annual cereals.
3. Recognize that water is an essential renewable resource. Release information on how to delay spring melting and increase water penetration of the soil (snowplowing, contouring, reduced grazing pressure, and vegetation on watershed areas). Agricultural productivity can be improved and seasonal flooding problems can be reduced in severity or eliminated.
4. Eliminate all public assistance to projects draining water from private lands. Penalize all private drainage projects which increase flooding of adjacent lands. Insist on impact studies before any drainage project is permitted.
5. Reduce and eventually, if possible eliminate the practice of summer-fallowing. At present, some 32,000 square miles in Saskatchewan each year are summerfallow and subject to wind and water erosion and to loss of organic matter. Research on methods of reducing summer-fallow should include rotations companion crops and use of herbicides.



Water erosion

Lorne Scott



draining wetlands

Gary W. Seib

people who understand forest ecology. Forest lands are public lands and they may provide a wide variety of controlled recreational opportunities. We recommend that there be completely protected natural areas within the forest lands.

IV NATURAL AREAS AND RESERVES

Nature reserves should be designated and protected in all parts of the province. These areas should be in all soil types and in all vegetation and climate zones. Some nature reserves may be relatively small but in these cases they must be carefully managed. Protected natural areas receive less protection than nature reserves but they are not for intensive or mechanized recreational use. They may be used for educational and non-disruptive scientific purposes.

V RECREATION (INCLUDING FISHING AND HUNTING)

Some areas must be designated for outdoor living and for recreation. This becomes increasingly important as man becomes more urban. It is obvious that areas set aside especially for recreation are receiving very high use. More parks are required.⁵ Parks must be protected from over-use by people and they must not be deteriorated by lumbering, mining, grazing or other commercial activities. Some recreational areas may be located in forests, or grasslands, by arrangement with the commercial interests which are exploiting those areas. Still other areas may be very artificial and these will include golf courses, ski and toboggan grounds and heavily used picnic sites. If the recreational areas are located close to the larger cities and towns they will take most of the pressure from parks in natural areas.

VI SETTLEMENTS

Although the population, seeking jobs and the conveniences and privileges of modern civilization, is becoming increasingly urban those still living on farms should also be able to live a good life. Concentration of people in cities, especially where there are large apartment blocks,

Research to demonstrate the harmful effects of monoculture, depletion of certain nutrients and accumulation of certain toxic substances. Research to demonstrate the beneficial effects of mixed crops.

MINERAL LANDS

Mineral lands may be exploited if prior impact studies indicate that there would be minimal socio-economic and environmental disruption and provided complete reclamation is guaranteed and is included in the cost of the mineral extracted. We assume that mining will not be allowed in national or provincial parks, in ecological reserves or in historic sites where the primary objective is preservation. Further, we assume that blanket exploration permits will not be granted without the knowledge and permission of individuals or agencies holding surface rights.

FORESTRY LANDS

Forestry lands may be exploited for lumber if there is strict supervision by



Road-killed deer

Lorne Sco

greatly reduces the amount of land needed per person. Cities should contain parks, outdoor space and green belts so that people occupying a minimal land space still may have a quality of life. Urban sprawl and urban fringe development should be rigidly controlled by the land use policy.

VI HIGHWAYS AND PARKING LOTS

Highways, parking lots and pipelines and other utilities take an appreciable amount of land especially in and near cities. In addition, roads act as a barrier to wildlife movements and are a deathtrap for thousands of animals. Roads aid in the dispersal of noxious weeds and they should not be built into areas where the objective is to preserve nature.

DEVELOPMENT AND IMPLEMENTATION OF A LAND USE POLICY

Saskatchewan naturalists believe that a land use policy should be developed by the Department of Environment in co-operation with

public citizens who have a broad interest and understanding of environmental concerns. This body would enunciate a land ethic and general land use policy. Application of the policy would be regional (there would probably have to be regional boards or subcommittees). Where regional land use policies recognize the need for a change in land use affected individuals and agencies would be notified and would be given opportunities to challenge the land use decision.

IMPLEMENTATION OF THE LAND USE POLICY should recognize that land contains two renewable resources, organic matter and water and that both these resources are easily abused. Use of land should aim at conserving and increasing fertility and water holding capacity.

AND, manage and control the use of all Crown lands in the province for the benefit of all the people. Any change in the use of land must, of course, have public approval.

AND, establish natural areas in a

parts of the province for the education and enjoyment of man.

AND, establish ecological reserves in every soil type and vegetation zone of the province for the preservation of native plants and animals.

AND, consolidate and supervise the government role in land use planning.

CONCLUSION

Land in Saskatchewan is not unlimited and there are many different uses for the land. The first use of land was for farming and most of us would give agriculture some priority to use of land. In this brief we emphasize that natural habitats must be preserved and we recommend that there be a freeze on acquisition or cultivation of additional lands by agriculture until such time as all land uses have been assessed and evaluated. The land use policy which is developed must show concern for the health of the environment.

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⁵HARPER, T. A. 1976. The Rural Councillor, 11, 26-30.

⁶Land Use Workshop Summary Report. 1976. Sask. Dept. of Environment, April.

⁷LYSTER, B. 1976. Spring flooding linked to farm drainage projects. *Country Guide*, Dec., 26-27.

⁸PIMENTEL, D. et al. 1976. Land degradation: effects on food and energy resources. *Science*, 194, 149-155.

⁹RENNIE, D. A. 1976. Conserving our soils. *The Rural Councillor*, 11, 30-38.

¹⁰Saskatchewan Environmental Advisory Council, 1974 annual report.

¹¹SIMBERLOFF, D. 1976. Species turnover and equilibrium island biogeography. *Science*, 194, 572-578.

¹²THAIR, P. J. 1976. Farm size and farm tenure. *The Rural Councillor*, 11, 22-24.

¹³WADE, N. 1972. A message from corn blight: the dangers of uniformity. *Science*, 177, 678-679.



Horses in a community pasture

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