


# NORTH DAKOTA


## The Northern Prairie State

by

Bernt Lloyd Wills  
Professor and Chairman  
Department of Geography  
University of North Dakota



Copyright 1963 by Bernt Lloyd Wills



Lithoprinted in U. S. A.  
Edwards Brothers, Inc.  
Ann Arbor, Michigan  
1963

## RETROSPECT AND PROSPECT

Geography has always been a silent force in all of the state's activities. Few people in the nation are as dependent upon their immediate environment and upon knowledge and use of it as are the people of North Dakota. A North Dakotan must continually remain aware of how he is influenced by geographic factors in all he does. Thus, a reasonable assumption should be that the future of North Dakota is directly related to how well its citizens understand their relationships to their environment. A natural conclusion, therefore, is that since North Dakota has been well endowed by nature with natural resources and a favorable agricultural climate, the future of the state lies entirely with its people. Furthermore, since the people have proved themselves to be of industrious stock, the future of North Dakota appears bright in all realms.<sup>1</sup>

North Dakota has a potentially favorable location at the center of the North American continent; its size and shape are favorable to its growth and development. Its mid-latitude, mid-continental climate is marked by distinct seasonal changes. Climatically, the principal drawback is the threat of drought; but its climate is ideal for mental and physical health and for activity.

The state is a plain, insofar as its

surface is concerned, yet only in the eastern part is it flat. The central portion is primarily a rolling drift prairie, and the western part has many areas where the landform is predominantly rugged hill country.

The landforms of the state carry a veneer of soil which compares favorably to that found anywhere else on earth. The outstanding limiting factor in the agricultural production from this soil is--as has been said before--its water supply. But as the rivers of the state are harnessed and as aquifers are found and tapped, men are discovering ways to overcome this periodic rainfall deficiency.

The native flora of the state is primarily grass, although shrubs and trees are found in all sections. In recent years much tree planting has been done, principally for wind breaks and shelter belts.

Wildlife abounds in North Dakota. Over half of the nation's water fowl come from this state. Throughout North Dakota fishing is usually good, for many of the waters are stocked with a variety of game fish. Upland bird and deer hunting is excellent.

North Dakotans are an energetic, ambitious people. Most of them are descendants of relatively recent and predominantly Northern European immigrant stock. In the early 1960's the population of the state was approximately

<sup>1</sup>A concluding paragraph from a student report by Mr. James Darkenwald, a senior at the University of North Dakota, in 1962.



two-thirds of a million. The average population density per square mile was about twelve; but the density was much greater in the eastern than in the western part, because of differences in geographic environment.

Its government is a stable, two-party system very similar to that found in the other forty-nine states of the Union.

Most of the income of the people of North Dakota comes from an agricultural economy, due in large measure to the geographic factors found there--the attributes of the locality. Few places on earth are more favored for agricultural production than North Dakota. Wheat has traditionally supplied about forty per cent of the state's cash income; but with cutbacks, due largely to government programs, the acreage in wheat has declined in recent years. Wheat has been replaced, in most cases, by barley or flax or the land has been retired into "soil-banks."

A trend toward fewer and larger farms, a trend which began after World War I, has continued to the present. In the decade 1950-1960 there was a reduction of about 9,000 farms. During this time the average size of farms in the state rose from 644 to 747 acres. The capital investment in individual farms has risen proportionately.

Farm size and method of operation vary from region to region, because of differing environmental situations. More moisture conserving techniques must be employed in the western part than in the eastern part. A total annual rainfall of less than 14 inches is extremely rare in eastern North Dakota; this situation exists in one in every three years, on the average, in western North Dakota. It follows that extensive production of livestock and greater re-

liance upon grazing as a land-use practice are found more often in the western part than in the eastern part.

During recent times the efficiency of the farming operation has increased; as a result, the standard of living of the farm families has risen. Today the rural dweller in North Dakota enjoys all of the modern conveniences and leisure time activities available to his urban counterpart.

The state of North Dakota contains great mineral wealth. In 1961, among the fifty states it ranked tenth in total reserves of oil and fifteenth in production of oil. The lignite reserves of the state account for 11.3 per cent of all the known solid fuel reserves of the nation. Other minerals of which this state is a significant producer include bentonite, brick and pottery clay, fuller's earth, Leonardite, natural gas, salt, sand and gravel, sodium sulfate, and sulfur.

North Dakota is not an industrial state, but industry has been moving into the state in a steadily increasing amount. Even manufacturing activity, although on a comparatively small scale, in many instances, is found in all parts of the state. These are portents of things to come.

Throughout much of her early history, North Dakota has been handicapped, crippled, by isolation from the markets of America and of the rest of the world. Today, with an excellent railway, highway, air line, and communications net and with a location only 250 miles from the busiest port on the Great Lakes (Duluth), a seaport of world trade, North Dakota is no longer isolated from the markets of the world.

Culturally, most North Dakotans are aware of and work for a good educa-



tion--both for themselves and for their children. By nature they are religious. Most of them appreciate and respect beauty as expressed in the fine arts, but relatively few have found time or opportunity to develop their own talents in these arts. A fine Greek adage says, "Life is the gift of nature; but beautiful living is the gift of wisdom." North Dakota is in an era when its people can enjoy the beauties of the arts, of what President F. D. Roosevelt called, "the more abundant life." To do this, they need only become a vital part of the "more abundant life" of their communities. They aim to live beautifully.

What are the future prospects for such a state?

#### Water

Whether one thinks of agricultural or industrial development in North Dakota, the dominant limiting factor with which he must deal is the resource water. In the foreseeable future very little can be done to increase the rainfall over the state. It may be assumed that the agencies responsible for water supply and water conservation will continue their efforts to find new aquifers and to harness and utilize surface drainage. In the North Dakota economy the most important development which is likely to take place in the near future is the Garrison Diversion Program. When such a diversion is accomplished, water will be available for the eventual irrigation of about a million acres of land in the central and eastern parts of the state.

Flood control, development of many recreational facilities, potential industrial water and power supply sites, restoration of lakes, and propagation and

conservation of fish and wildlife are some of the many indirect benefits that will result from the launching of water projects. Many other proposed water development projects will serve areas of the state in many different ways, but space prohibits even a brief description and discussion of these projects.

But the hydro-electric power that is produced at such places as the Garrison Dam should be mentioned, because such sites will furnish power for distribution throughout the state and for industrial use. A recent benefits analysis completed by the Bureau of Reclamation and a study by the Bureau of Business and Economic Research of the University of North Dakota, both agree that the proposed irrigation programs will add very materially to the annual income of the state. Nevertheless, because of the limited acreage, the added expense of irrigation, and the amount of extra labor required to grow crops under irrigation, a high cash return per acre must be realized to make the program feasible for the farmer. The proposed irrigation projects would shift agricultural emphasis, in the irrigated areas, from wheat farming to intensive livestock production and row-crop farming.

#### Agriculture

For many years to come agriculture will remain the principal source of income in North Dakota. With estimates of total food spending of \$65 billion, Americans today are spending more for food than at any other time in their history; this sum is expected to rise to \$104 billion in 1975. This increased spending for food will provide continued wealth for the state.



The trend toward fewer and larger farms has had the undesirable results of reducing the number of farm families and the importance of small villages in North Dakota. These facts, together with the reduction of the number of farm workers due to the greater investment in farm equipment, are among the major reasons for the decrease of population in North Dakota. In the foreseeable future, the most important single factor in reversing these trends is apt to be the more intensive utilization of farm land in North Dakota. This takes us back to water and to irrigation within the state, for agriculture and water supply are completely interrelated.

#### Energy and Industrialization

Energy resources are the key to the future, and the state of North Dakota has an almost unlimited supply of materials to generate mechanical energy needed by industry. Fossil coal, petroleum, natural gas, and the energy embodied in falling water all are valuable resources for power. Railroad transportation facilities are adequate and could be easily expanded, if the need should arise. Adequate modern highways provide excellent access to suitable industrial sites throughout North Dakota, and rapid progress is being made on construction of interstate routes which will traverse the entire state both north and south and east and west. Other factors that seem to point out the industrial potential of the state are the North Dakota Industrial Tax Laws and the North Dakota "right of work" law which guarantees to every person the right to work, a right which can not be denied or abridged on account of membership in any labor organization or labor union. A study pre-

pared by the North Dakota Research Foundation concluded that the present tax situation in North Dakota does NOT discourage the development of industry. North Dakota has enjoyed a national reputation for the abilities and production of its people. Corporations rank the state at the very top as to low labor costs and the stability of its labor. Much of this is due to the earnest desire of many factors of the population to make the most profitable growth of businesses and enterprises. One more factor that favors the development of industry in North Dakota should be mentioned--the dispersion of industry for national survival in the event of war. Based upon general economic factors, natural resources, food, power capabilities, central location for distribution and dispersion for natural survival, North Dakota, it seems, is a key area for future industrial programs.

Probably industrialization in North Dakota is not the opinion solely of native North Dakotans who, admittedly, could be prejudiced. Consider the following excerpt from a business report:

It seems inevitable that industry must some day turn to North Dakota with its wide and flexible energy sources based upon hydro-electric power, petroleum, natural gas, and lignite.

Our business demands that we be not pessimistic, but skeptical; that we act not upon hunches, but upon facts. Hence, we are not given to easy enthusiasms. But the facts make us enthusiastic about North Dakota's potentialities. Indeed, its resources in the Williston Basin alone would, so to speak, be worth the price of admission. We have no doubt that industry, following a long



established pattern elsewhere, will move to North Dakota to use its abundant and flexible energy resources. Nor have we any doubt that this will produce a solid underpinning of prosperity for the North Dakota that already has one of the most efficient agricultural plants in the country. We see North Dakota's population growing, its wealth increasing, its people prospering, its place in the national economy expanding, its solidity assured by a combination of agriculture and industry based upon the natural resources of the State and manned by a people who have historically proven themselves.<sup>1</sup>

The youth of North Dakota are likewise optimistic. At the University of North Dakota the author teaches two upper-division courses dealing with the state. Usually, he closes each semester's work by having the students prepare final papers giving their convictions, with reasons, regarding the future of the state. Almost without exception, the students believe that industrialization will come. Furthermore, these loyal young North Dakotans blame no one but North Dakotans for the fact that so little has, as yet, come. Generally they feel that irresolution and ultraconservatism on the part of North Dakotans has delayed progress in the state. Consider this statement made by a young lady from Grand Forks, a senior who had spent her junior year at a French University on a special scholarship:

North Dakota right now is far behind other states in industrialization. North Dakota can be compared to a ghost-town where people discover

gold, settle, mine the gold, then slowly the town dies. If the town had been able to offer something more permanent to its residents perhaps it would have thrived. I believe North Dakota can do this. We need people who will stick their necks out along with their wallets. It took a long, long time before North Dakota utilized its petroleum resources. Only within the past ten years has North Dakota begun to open her eyes. I think it's time she woke up.

After reading books, pamphlets and articles on this topic, I compiled the following list of suggested industrial opportunities for our state for the future: expansion of sugar beet processing; expansion of livestock processing; production of non-fat dry milk solids; manufacture of macaroni, noodles and spaghetti from local durum wheat; production of malt from local barley; expansion of the potato processing industry; manufacture of cement; further development of oil drilling muds; refining of germanium and uranium from lignite coals; manufacture of paper utilizing local cellulose and local chemical raw materials; production of lignite stored hydrocarbons and other chemicals.

Some day North Dakota will become a highly industrialized state mainly because of its lignite. I hope to see that day.

A similar--though a largely implied--conclusion, with a different personal reaction, was expressed by Richard Sollom of Grand Forks, who wrote, in part, as follows:

I view the future of North Dakota with mixed feelings. On the one

<sup>1</sup>"Sturdy, Solvent, and Scandinavian," Empire Trust Letter, Empire Trust Company: New York, N. Y. May 20, 1958, p.4.



hand, I am sure that "big" industry will come to North Dakota and this makes me happy for the state as a whole. On the other hand, it disturbs me to think of the broad prairie horizons becoming dotted with smokestacks and with sprawling industrial plants standing where hard-won homesteads used to be.

Yes, the future holds the promise of progress and growth for North Dakota; but whenever I visit the farm that was homesteaded by my great-great-grandfather, I find myself hoping that it will be a gradual growth.

Increased industrial activity in the state is certain. Consider this fact: within a radius of 100 miles of Williston are extensive deposits of lignite, potash, oil and gas, salt, sodium sulfate, sulfur and clays (alumina, bentonitic, and uranic). Williston has an abundance of water and low-rent land, and its transportation and communication facilities are excellent.

In the near future it appears likely that the most rapid expansion of industry in North Dakota will be in the increased processing of its abundant agricultural products. Most of this increase will occur in the eastern part of the state. From the long-range viewpoint, the chemical industry, particularly a chemical-metallurgical complex, based upon lignite for energy and for some of its raw material, will probably lead the field. Most of this development will perhaps take place in the western half of the state.

A major task which looms before North Dakotans is the creation in the public mind of a more accurate image of the state. The average American--North Dakotans naturally excluded--probably

has more accurate knowledge about any Western European country than he has about North Dakota. To him, North Dakota means blizzards, snow, and arctic cold. If North Dakota is to prosper, progress to any great extent, it will have to correct the public image. Well-informed business executives, when brought to this state and shown what is here, have frankly admitted that their earlier image of the state was blurred and out of focus. North Dakotans who want their state to prosper and to grow must praise and defend their far-flung prairie land; then they must actively work for its growth and improvement. The raw materials for greatness are here.

#### Population

North Dakotans enjoy healthier lives than do residents of most other states. A boy born in North Dakota today can look forward to approximately 68 years of healthful living; a girl, approximately 72. Death rates per 100,000 population due to the major diseases, including heart disease, cancer, and tuberculosis, fall below the national averages. Healthwise, the citizens of North Dakota seem to be able to look forward to a bright future.

Numerically the population trends in the state indicate only a slight increase. True, the accuracy of most population predictions is not considered great. Predictions for North Dakota range from those of dour pessimists, who apparently believe that North Dakota will become just one big farm, to exuberant optimists who report that oil development will bring in a million people, Garrison Diversion another million, etc., etc. An objective, scientific study made by the Bureau of Eco-



nomic and Business Research of the University of North Dakota concluded that the population of the state would be about 860,000 in 1975.<sup>1</sup> Its prediction would be attained if out-migration could be stopped or if out-migration could be matched by in-migration. This result could easily be attained by a modest increase of industrial programs in the state.

## Conservation

### OUR LEGACY

Nature wrought  
Thru ages past  
To build this wondrous land.  
Our soil is deep  
And richly stored  
There's wealth on every hand.

Our flyways teem  
With migrant birds  
And scores remain to nest,  
So all in all  
Our bird count stands  
Among the nation's best.

It's good for man  
To make his home  
Upon these fertile plains;  
And wildlife too  
Can flourish here  
Where habitat remains.

This is our land  
Our legacy  
And guard it well we must;  
A duty and  
A privilege  
A solemn, precious trust.

S. O. Kolstoe

North Dakotans have a fine record of conservation of natural resources--of most natural resources. The typical North Dakota farmer handles his precious land wisely and masterfully. North Dakota laws regarding oil and gas

conservation during the production and processing of those resources--laws which were enacted and are enforced by North Dakotans--are considered a model to follow by the conservation agencies of other states. There is one area of conservation in this state which needs much attention--the human resource. As elsewhere mental health facilities and services need to be improved and expanded. North Dakotans are as stable as are the citizens of any other state, but life here is also complex. North Dakotans including the farmers are subject to anxieties, stresses, fears, and worries--things which are conducive to mental disturbance. The future will see marked progress in mental health programs throughout the state. Its people will see to that.

Modern man sometimes deplores progress and wishes that he could return to the primitive life. Fortunately for him, that is impossible. But the use of machinery and of chemicals does not preclude good farming practice, nor does industrial and city life preclude the benefits of the more natural environment. Plato compared man's life to a boat on a stormy sea. Naturally it is best that the man in the boat know how to steer and where to steer to. The people of North Dakota, urban or rural, can live satisfying, contented lives; but such lives need to be planned, and the plans must be based upon knowledge. Just so, the ship of state of North Dakota can attain any goal that is set for her if the people of the state know their ship, set a good course, and steer her well.

<sup>1</sup>Kelly, Samuel C. Jr. and Associates, The Population, Labor Force and Income of North Dakota, 1900-1975, Bureau of Economic and Business Research, University of North Dakota School of Commerce, Grand Forks, North Dakota, April, 1954.



This book began with a poem by Dr. Kolstoe. That the final chapter should end with a suitable poem by the same author seems appropriate.

#### NORTH DAKOTA

North Dakota,  
Our prairie home  
We love you for the bounty of this place,  
Your wide horizons,  
Fertile soil,  
Your gently rolling, ample living space.

We love you for  
Your varied scenes;  
Your valley flatness and your rolling plain,  
Your sculptured badlands,  
Flat-topped buttes  
Your pasturelands, your rippling fields of grain.

We love you for  
The mineral stores  
That lie beneath the fertile surface soil,  
Your seams of coal,  
Ceramic clay  
And deeper still, your precious pools of oil.

We love you for  
The pioneers  
Who boldly matched their brawn against your  
strength;  
Who broke your sod  
And faced your storms  
And proved themselves as worthy of your wealth.

We love you for  
Your varied clime;  
Your storms, your dazzling sun, your bracing air.  
Winter blizzards  
Rage at times  
But nowhere else are heavens quite so fair.

We love you for  
Your solid worth,  
Your whimsies and your generosity;  
Your gracious present,  
Rugged past;  
For what in future years you're yet to be.

S. O. Kolstoe