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Upper Great Lakes Regional Commission October, 1968

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Upper Great Lakes Regional Commission

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Preface

In its planning work, the Upper Great Lakes Regional Commission has found it useful to summarize a good deal of data on the economy of the Region in the form of maps using available county and other localized data. Such maps make apparent at a glance significant distributional aspects of population, economic, social and institutional information.

In the thought that others would also find the maps interesting and useful, a number of them have been selected for reproduction in this publication. Each is accompanied by a very brief discussion of what the map depicts.

This atlas is released for purely informational purposes.

The atlas and its accompanying text are the work of staff members Victor Roterus and David Arnaudo and Consulting Geographer John C. Lowe and his assistants, Harry Wheeler and Mark Newland. The project was originated under Thomas S. Francis, former Federal Cochairman.

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Population

Total Population, 1967 Population Density, 1967 Population Change, 1940-1967 Net Migration, 1950-1960



Source of Data: SALES MANAGEMENT June, 1967



Total Population in the Upper Great Lakes Region was approximately 2.8 million in 1967. This was 18% of the population of the total states of Michigan, Minnesota and Wisconsin and only about 1.5% of the total U.S. population. The population of the Minnesota and Wisconsin regional areas are approximately equal, Minnesota (962,900) and Wisconsin (1,115,600) with Michigan's regional population somewhat less (703,800).

Areas of greatest population occur around industrialized urban and mining areas in northeastern Minnesota (Duluth and the Mesabi Range), central Wisconsin and select towns in Michigan.

The population in the Region is predominantly rural compared to the nation:

	Region	U.S.
Urban	40%	70%
Rural Non-Farm	39	22
Rural Farm	21	7
		-

The Region's population is somewhat older:

	Region	<i>U</i> . <i>S</i> .
Population under 5 yrs.	$1\overline{2}\%$	11.0%
Population 5-65 yrs	77	79.5
Population over 65 yrs.	11	9.0

Also, apart from a small Indian population of 15,000 the Region is overwhelmingly represented by majority ethnic groups from Europe.

Upper Great Lakes Economic Development Region

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Population Density, 1967, is a function of the total population of a county and of its total area. The average density of the Region is approximately 24 persons per square mile, which is less than half that of the United States

as a whole. The higher density figures are almost invariably associated with the presence of urban centers. The densities in the intermediate range represent fairly dense agricultural settlement, such as those in the Michigan fruit belt and the dairy areas of central Minnesota and Wisconsin.

The central and northern regions have low densities, with the exception of the mining areas. Despite its very large area, St. Louis County has a substantial density, due to the presence of Duluth, which had a population of over 100,000.



Source of Data: U.S. CENSUS OF POPULATION, 1960 SALES MANAGEMENT, June 1967



Population Change 1940-1967

resulted in an increase in the Region from 2.5 millions in 1940 to approximately 2.8 millions in 1967. This slow growth represents an actual gain of only 242,000 persons or 9.5 per cent over a twenty-seven year period.

The Region's average annual growth rate (.35 per cent) is less than one-fifth of the nation's average (1.9 per cent) for this period. This population growth is even slower when compared with the balance of the three states:

	1940-50	1950-60
Region	1.6%	3.6%
Balance of 3 states .	18.1%	22.6%
United States	14.5%	18.5%

With few exceptions, the greatest growth (shown in the darker shades on the map) has occurred in the areas previously indicated as having the greatest density. In other words, such growth as has occurred has largely polarized around the established urban centers.







Net Migration 1950-1960 represents the difference between total in-

resents the difference between total inmigration and total out-migration. Between 1950 and 1960, there was a net out-migration of 270,000 persons from the Region as a whole.

Net out-migration occurred throughout the Region with the exception of twelve counties in which there was net in-migration. However, in each of six of these twelve counties, net in-migration was less than six hundred persons during the decade.

Net in-migration represented probably intra-regional movement. Generally, in-migration is associated with growth in employment opportunities. In the Region, this has been the case in some urban centers as well as, for instance, the significant growth in mining activity in Lake County, Minnesota. The growth in Iosco County, Michigan, can be attributed largely to the growth in armed forces personnel.

Towns and Infrastructure

Urban Places, 1960 Commuting Patterns of Selected Centers, 1960 Ports, Airports, and Railroads, 1967 Major Highways by Traffic Volume, 1964





Urban Places 1960, in the Region, represented the location of a much smaller proportion of the population than is the case for the nation as a whole.

The Region had only two urban centers which had a population of over 50,000; six communities of 20,000 to 50,000; twenty with a population of 10,000 to 20,000, and sixty communities of from 3,000 to 10,000. In addition, there were nearly one hundred and fifty other communities with a population of less than 3,000.

The largest concentration of major urban centers in the Region was throughout the southern agricultural belt. Port centers constituted the second largest group, followed by mining communities in the Upper Peninsula of Michigan and northern Minnesota.

The two largest centers of the Region, Duluth-Superior and Green Bay, were made up of several economic activities, including manufacturing, port-related industries as well as service functions.

The nature of the intermediate sized communities was generally more highly specialized than that of the larger ones. It included mining communities, agricultural communities and small ports. Finally, the smallest communities offered limited services for the surrounding rural population.

Upper Great Lakes Economic Development Region





Commuting Patterns of Selected Centers, 1960, indicates the major employment centers of the

the major employment centers of the Region and their commuting fields. It should be noted that the size of the field does not represent the relative importance of a place as an employment center. The areas shown indicate the distances travelled but do not reflect the total number of people involved. In many cases, commuting distances are fifty miles or more, reflecting the paucity of alternative employment opportunities.

Several centers, located outside the Region proper, attract workers from within the Region. These include Fargo and Grand Forks, North Dakota, Minneapolis-St. Paul, Minnesota, La Crosse and Oshkosh, Wisconsin and Bay City-Saginaw, Michigan.





Ports, Airports and Railroads, 1967, formed a complex of transportation facilities in the Region

including twenty-seven commercial airports, twenty-four ports and an adequate railnet.

The major ports of the Region include Duluth-Superior, from which iron ore is exported and coal is imported; Ashland, which exports iron ore and wheat; Green Bay, through which coal is imported; Ludington, Michigan, which imports sand and gravel; Alpena, which exports non-metallic minerals and imports coal; and, finally, Sault St. Marie which imports both iron ore and coal.

The two major airports of the Region are Duluth and Green Bay, which accommodate regularly scheduled flights. Feeder lines serve the other urban centers.

The Region's railnet decreases in density in the northern part with the exception of the mining areas. The numerous rail lines focus toward the two major centers of Duluth and Green Bay.





Major Highways by Traffic

Volume, 1964, indicates that, generally, traffic volume for the Region as a whole is not very heavy. With the exception of a portion of Interstate Highway 94 between Minneapolis and St. Cloud, in the southernmost part of the Region, nowhere does traffic exceed seven thousand cars per day.

The density of the road network in the Region diminishes from south to north. The density is associated, of course, with the nature of the settlement pattern.

Major traffic volume reflects either what is probably interstate movement or local movement around the large urban centers located within and outside the Region proper.

Traffic volume is the result of a combination of various types of movement which include daily local travel, such as commuting and shopping trips, tourist travel, and interstate truck movement.





Dominant Economic Activity, 1960 Value Added by Manufacturing, 1963 Total Retail Sales, 1967 Commercial Forest Lands Existing and Potential Agricultural Land Value of Farm Output, 1964 Value of Mineral Shipments, 1965 Known Mineral Deposits Total Commercial Tourist Expenditures, 1964 Labor Force Participation Rates, 1960 New Jobs Required in Region to Attain National Level, 1960



Source of Data: U.S. CENSUS OF POPULATION, 1960



Dominant Economic Activity,

1960, shows the basic sectors of the regional economy which include agriculture, mining and manufacturing and employ a sizeable proportion of the labor force of the Region.

Mining, as a major employer, tends to dominate in the north. It exceeds manufacturing in several counties such as St. Louis County, Minnesota; Gogebic County, Michigan; and Iron County, Wisconsin.

The counties with the highest proportion of farm labor cover the most territory in the Region. Although employment in this category also includes forestry and fishing, the number of people involved in the latter activities is comparatively small. Manufacturing shows up as a dominant employer in the central portions of Minnesota and Wisconsin and throughout a sizeable segment of the Lower Peninsula of Michigan.

The relative industry employment pattern for the Region is shown by the following Bureau of Employment Security data for 1966:

Agriculture, Forestry, Fishing .	14.0%
Mining	2.0%
Contract Construction	3.0%
Manufacturing	18.0%
Non-Manufacturing	63.0%
Total	100.0%

Upper Great Lakes Economic Development Region



Source of Data: U.S. CENSUS OF MANUFACTURING, 1963



Value Added by Manufactur-

ing, 1963, represents the difference between the factory sales price of products and the combined costs of supplies, materials, fuel, purchased electrical energy and contract work.

Total value added by manufacturing for the Region amounted to 1.6 billion dollars in 1963, of which about 60 per cent was in Wisconsin, while Michigan and Minnesota shared the remainder almost equally.

Manufacturing in the Region is associated with three urban concentrations: 1) the Duluth-Superior area with specialization in iron and steel production, 2) the Appleton-Green Bay area which has a significant amount of transportation equipment manufacturing, and 3) an area to the north of Grand Rapids-Muskegon in which fabricated metals and machinery manufacturing predominate.

Other important manufacturing industries include food and kindred products, printing and publishing, and a limited amount of apparel. The availability of substantial lumber resources throughout the Region had led to the emergence of some very large paper and allied products manufacturing plants.

Upper Great Lakes Economic Development Region



Source of Data: SALES MANAGEMENT, June 1967



Total Retail Sales 1967 in the Region amounted to over 4 billion dollars. Total retail sales by state were approximately proportional to population. Thus, Wisconsin, with the highest population total of the Region, had total sales of 1.5 billion dollars followed by Minnesota with 1.3 billion dollars and Michigan with 1.2 billion dollars.

Generally, the concentration of retail sales within the Region is associated with the relatively more populated counties. These, of course, reflect the presence of urban centers and their retail facilities. Thus, the Duluth-Superior area generated total sales of 391 million dollars, while the Green Bay-Appleton area had a total of 405 million dollars.

Per capita retail sales are generally quite low, in that they are proportional to per capita income which throughout the Region is less than the United States average.

Upper Great Lakes Economic Development Region





Commercial Forest Lands are those which are actually producing or are capable of producing crops of industrial wood.

With the exception of the Red River Valley (northwest Minnesota) in which the native vegetation is mostly grasslands, the Region as a whole makes up the western portion of the mixed deciduous and coniferous forest belt of the northeast United States.

Due to the great proportion of land which is used for agriculture in the southern parts of the Region, intensity of commercial forest coverage is least. However, where crop agriculture is relatively unimportant (throughout the Upper Peninsula of Michigan, northern Wisconsin and extending into northern Minnesota) over two-thirds of the total area are covered by commercial forests.

The predominant regional forest types include aspen and birch. These trees are generally small in diameter, second growth, and of low value. They are principally utilized by the growing pulp and paper industry.

Scattered stands of white, red, and jack pine, as well as spruce and fir, exist. However, these forest types are generally second growth and too scattered for large scale commercial use.

It should be noted that much of the commercial forest land is in public ownership.





Existing and Potential Agri-Cultural Land shows the percentage of land capable of being cultivated (U. S. Department of Agriculture soil capability classes I to IV).

A National Inventory of Soil and Water Conservation Needs completed in 1958 stated that approximately 70% of the Upper Great Lakes Region is capable of being cultivated as against a percentage of 87% in the balance of the three states. However, only about 10% of the Region's cultivable area is crop land.

A high concentration of existing and potential agricultural land is found in the Red River Valley in N.W. Minnesota, where land is devoted to small grain and specialty crops. Other concentrations of potential land occur in the southern regional interstate corridor in Central Minnesota and Wisconsin, and the western Upper Peninsula where the land is used for dairy and general farming.



Source of Data: U.S. CENSUS OF AGRICULTURE, 1964



Value of Farm Output 1964 in the Region amounted to 884 million dollars. Nearly 90 per cent of this total was concentrated in Wisconsin and Minnesota. As portrayed on the map, most of this concentration was along the southern and western boundaries of the Region, which are the northern and eastern edges of important agricultural areas of the Midwest.

In the northern areas of the Region, extensive swampy areas, with associated drainage problems, inhibit agricultural production. Podzolic soils are extensive throughout the Region, with the exception of degraded chernozems along the western portion of Minnesota.

The generalized types of farming in the Region include dairying, which is dominant throughout the Region, with the exception of fruit, truck and mixed farming along the eastern shore of Lake Michigan, and wheat and small grains along the Red River Valley of western Minnesota.

Dairy cattle are particularly concentrated west of Lake Michigan. Sheep and hogs are found in the south.

The Region's major crops are corn, oats, peas and beans. Sugar beets are grown on the eastern side of the Lower Peninsula of Michigan and the Door Peninsula. Apples and peaches predominate in the fruit belt on the east side of Lake Michigan. In the Red River Valley are grown a wide variety of crops: wheat, barley, oats, potatoes, sugar beets, alfalfa and flax seed. There is also a sizeable animal population consisting mainly of dairy cattle and some hogs and sheep.

Upper Great Lakes Economic Development Region





Value of Mineral Shipments

1965 amounted to approximately 750 million dollars in the Upper Great Lakes.

By its basic nature, mineral production is sporadically located: Minnesota accounted for about two-thirds of this total, Michigan less than one-third, and the remainder was in Wisconsin.

Production areas are concentrated in the northern portions of the Region, primarily in the Upper Peninsula of Michigan and northeast Minnesota. Most of the Region is underlain by a complex of igneous and metamorphic rocks which are inherently high in metallic mineral content. The eastern portion of the Region, in Michigan, is underlain with carboniferous materials which contain extensive coal measures.

Highest values of shipments, as shown on the map, reflect the occurrence of the iron ore and taconite production areas of northeast Minnesota and the Upper Peninsula of Michigan. The high value of nearly 390 million dollars in St. Louis County is associated with the Mesabi and the Vermillion Ranges. Copper production is concentrated on the Keweenaw Peninsula. Smaller, but significant values of shipment occur on the Lower Peninsula of Michigan due to the production of petroleum, natural gas, salt and coal.





Known Mineral Deposits, of which several are of considerable size, are found in substantial number throughout the Region.

The Region is still one of the world's largest iron ore resource areas. Despite intensive exploitation for over a century, the Region still has over 100 billion tons of usable iron ore reserves. Exhaustion of high quality iron ore reserves has been partially compensated for by recent technological developments which have enabled the use of low grade ores.

Exploratory wells have resulted in recent years in the discovery of new oil fields in the Basin District of central Michigan. Osceola, Arenac and Clare Counties in Michigan consistently rank as high petroleum producers in Michigan.

There are three copper deposit areas in the Upper Peninsula of Michigan. Copper mining is an integrated operation in Michigan. Producing companies mine and process the ore and use it in their own fabricating plants. Michigan copper ore is free of other metals except silver. Consequently, the ores receive a premium price.

The nickel deposits of Minnesota are a comparatively recent discovery. Since 1948, some 120,000 acres have been leased to private companies for exploration. There is little production as of now.

In addition, there are widespread deposits of commercial clays in Minnesota which are manufactured into brick, pottery, floor tile and sewer pipes, mostly for local use. Limestone in Wisconsin and sandstone in Minnesota and Wisconsin constitute other mineral resources which are quarried for local uses.

Upper Great Lakes Economic Development Region



Source of Data: CHECCHI & CO. (Tourism Monograph, Sept. 1967)



Total Commercial Tourist Expenditures 1967, amounted to about 245 million dollars in the various types of tourist accommodations located throughout the Region. Approximately a

fourth of this total was in Minnesota, while Wisconsin and Michigan shared almost equally in the remainder. The wealth of outdoor recreation op-

portunities is reflected by the existence of numerous winter sports areas including some seventy ski areas. In addition, summer recreational opportunities are generally associated with water-based activities, many of which are concentrated on the eastern shore of Lake Michigan, although canoe trails and fishing areas are found throughout the entire Region.

Leading counties of the Region in terms of commercial tourist expenditures (in millions of \$) include:

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Vilas Co., Wisc.	\$14.7
Oneida Co., Wisc.	12.4
Cass Co., Minn.	8.2
Crow Co., Minn.	7.6
Sawyer Co., Wisc.	7.4
St. Louis Co., Minn.	7.4
Door Co., Wisc.	6.2
Mackinac Co., Mich.	6.0
Grand Traverse Co., Mich.	5.7
Cheboygan Co., Mich.	5.6
Emmet Co., Mich.	5.5

Upper Great Lakes Economic Development Region





Labor Force Participation Rates 1960 represent that propor-

tion of the population, between fourteen years and sixty-five years of age, which is either employed or actively looking for employment.

The rate is generally lower throughout the Region than the national average, with the exception of eight counties, seven of which are in Minnesota. This phenomenon may be explained partly by the fact that the long-term unemployed eventually drop out of the labor force in that they are no longer actively seeking employment. However, as new opportunities develop, they may re-enter the labor force.



Source of Data: U.S. CENSUS OF POPULATION, 1960



New Jobs Required in Region to Attain National Level, 1960,

shows the geographic distribution of the "job gap." The measure is computed as the difference between the actual number of employed persons in a given area and the number of people who would be employed *if* the area had an unemployment rate of 4 per cent of the civilian labor force *and* if the area had a national labor force participation rate of 55.3 per cent.

In the Region, unemployment rates are higher than 4 per cent and labor force participation rates are lower than 55.3 per cent. Thus it is obvious that a substantial job gap must exist. The total size of the gap for the Region as a whole was over 100,000 of which 10 per cent was in St. Louis County, Minnesota.

The job gap gives a crude indication of the magnitude of the economic development tasks ahead.

Three counties had a job gap of over 4000, six counties of between 2000 and 4000, and seventeen counties had a gap of 1000 to 2000 jobs.

Upper Great Lakes Economic Development Region



Per Capita Income, 1967 Farm Operator Level of Living Index, 1959 Sound Housing, 1960 Educational Attainment, 1960 Higher Education Facilities

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Per Capita Income 1967 is a function of the aggregate income from all sources of an area divided by the total population of that area. Per capita income in the Region is quite low. Nowhere does it equal the United States average of \$2543. In fact, in only eight of the counties of the Region does the per capita income value come close to equalling that of the U.S. On the other hand, in six of the counties, the figure is actually less than half that for the U.S. as a whole. Throughout the remainder of the Region, the value of per capita income is generally low, ranging from fifty to ninety per cent of the U.S. average.

The relatively high per capita income figures are generally associated with the existence of a sizeable urban center. Thus, in Minnesota, Moorhead in the western part of the state and Duluth at the western tip of Lake Superior are representative of this phenomenon, along with Lake County in which the preponderance of mining activity is reflected. Other relatively high per capita income areas include Eau Claire, Green Bay and Appleton in Wisconsin and Manistee in Michigan.

The very low per capita income figures of the Region are scattered throughout the central belt, where economic activity is largely in the form of marginal agricultural production.





Farm Operator Level of Living Index 1959 is a combined measure

MIUGA IDUD is a combined measure of value of farm, value of products as well as the number of automobiles, telephones and home freezers.

About half of the counties in the Region have indices above the national average. As can be expected, the areas of primary agricultural production in the Region, including the Lower Peninsula of Michigan, the southern parts of Wisconsin and Minnesota and the Red River Valley, have the highest indices.

The lowest indices of the Region represent counties with marginal farming operations, largely scattered throughout the northern areas of the Region.





Sound Housing 1960 is defined as housing with no visible defects or slight defects which are usually rectified through normal maintenance, and which has all indoor necessary plumbing facilities.

Condition of housing for the Region as a whole is below the United States average (40.7 per cent unsound as against 26 per cent for the U. S.). As is true for the nation generally, housing in predominantly rural areas is not as well maintained as that in urban areas. Because much of the Region is of a rural character, it is not surprising that overall housing is of relatively poor quality.

Generally, the lowest values in the Region are found in the sparsely populated and isolated areas. Conversely, relatively better quality housing is found in the counties with urban population concentrations.



U.S. Median School Years Completed - 10.6



Educational Attainment, 1960, in the Region generally compared favor-

in the Region generally compared favorably with that of the nation as a whole. Approximately one-fourth of the counties attained or were above the national average.

As would be expected, counties which contain higher educational institutions had high averages. The same phenomenon was associated with counties which contain urban centers where employment opportunities require relatively high levels of educational attainment.

Conversely, some of the lower values were in the farm areas of the south and west in the Region.





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Higher Education Facilities

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generally serve the Region well, in terms of both quality and quantity. The locational pattern does not correspond to the distribution of population. This is because both private and public educational authorities have apparently desired to locate educational centers in rural surroundings away from the distractions of the big city. Consequently, even thinly populated areas of the Region such as the Upper Peninsula of Michigan have several large institutions of higher education. This dispersed nature of the pattern allows people living in all subareas of the Region to "receive" higher education in a convenient manner without the necessity for much long distance travel.

Below is a list of the locations of the larger institutions – those having an enrollment of over 4000 students:

Ferris State College,

Big Rapids, Michigan

Michigan Technological University, Houghton, Michigan

Northern Michigan State University, Marquette, Michigan

St. Cloud State College, St. Cloud, Minnesota

Wisconsin State University, Eau Claire, Wisconsin Stevens Point, Wisconsin Superior, Wisconsin

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