

## Indiana's Comparative Richness

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### Introduction

About thirty years ago, Indiana was compared with other nearby states in various respects. A paper in the Academy *Proceedings* for 1922 summarizes this comparison, as do the final chapters in *Handbook of Indiana Geology* (published by the State Department of Conservation), and *The Economic Geography of Indiana*.

These earlier studies disclose that Indiana's small size (thirty-seventh state), obscures its richness, because in many statistical respects it ranks below the larger states. However, the total for a state is often less significant than is the wealth per square mile. When the area is considered, Indiana is exceptionally rich, one of the best agricultural states, with high rank in many other respects.

### Recent Field Studies

What further light on comparative wealth has appeared?

Although frequent studies were made in subsequent years of other regions, with comparison to Indiana almost continually in mind, special efforts were made along this line recently. Hence the following summary supplements the earlier discussion significantly. In 1950 and 1951, I crossed the continent from the Atlantic to the Pacific six times, traveling by day chiefly by auto or by airplane. Thirty-eight of the states were visited, many of them repeatedly. Large areas were seen well. Canada was visited repeatedly and extensively. Almost the entire length of Cuba was seen, partly from the air, and representative bits of northern Mexico. These recent studies supplement earlier extensive trips in Europe, Asia and Australia, and residence of years' duration in Illinois, South Dakota and Minnesota; months have been spent in each of Arizona, Wyoming, Montana, Connecticut, Washington, D. C., Europe, Australia, the West Indies, and in the Pacific tropics. These observations afford vital background for the following conclusions.

How can Indiana be compared with the areas I know and with other areas? Let us consider size, population, production, elevation, topography, soil, forests and grass, minerals, climate: temperature, precipitation, storms, drouths, freezes, and also water supply, scenery and location.

### Indiana's Elevation

Indiana's average altitude above sea-level is about 800 feet, which is only one-third as high as the average land of the earth. Some of the advantages of its relatively low elevation are easier transportation, reduced erosion and better climate, especially smaller climatic extremes.

Indiana's average elevation is about the same as that of Michigan and Illinois, somewhat less than that of other midwestern states, and notably less than that of most of the United States. About three-fourths of the land of the world is higher.

### Indiana's Topography

Indiana is mostly a gently rolling plain—little of the state is hilly, none of it is really rough or mountainous. Sizeable areas were formerly poorly drained, but most of them are now artificially drained and are choice farm land. As compared with most areas of comparable size and shape, Indiana is relatively level. For example, Kentucky, Ohio, Wisconsin and Missouri have distinctly more rugged land than Indiana. About three-fourths of the United States is rougher than Indiana, and of the other one-fourth, some parts have much land that is too level, for example, Florida and Maine. Indiana is better topographically than is three-quarters of the world's land. One of Indiana's significant resources is the large percentage of its land that is topographically suitable for agriculture, for rapid transportation, and for the construction of buildings.

### Indiana's Soil

Indiana's soil is mostly good, though the average ranks appreciably below the best soils of the world, which are found in grasslands, for example, in eastern Dakota and in the Black Earth section of Russia. Indiana's soil is rendered less rich by the extensive leaching due to the abundant rainfall, and to the fact that most of Indiana was formerly forested. Forest soils are less excellent than are prairie soils.

Perhaps ten percent of Indiana's soil is relatively poor, but even it is better than the poor soils of most of the world. For example, the sandy soils of Indiana yield well as compared with the sandy soil of the Southeast and many other areas. This is because, as a result of glaciation, Indiana's sand is less pure quartz.

Indiana's average soils surpass the average for Michigan and Wisconsin, Ohio and Kentucky, and all the more southern states, and also the average of the entire western half of the United States. They are also better than the average of all the states east of Indiana. Indiana's soil ranks below the average of Illinois and Iowa, and below the better third or fourth of several other states, from North Dakota to Texas. But the soils in the poorest third of those states are distinctly poorer than the soils in the poorest third of Indiana. Their poorness is mostly due to the extensive sandiness, rockiness, or alkali, but is partly due to climate. Soil that is too dry or too cold is, of course, of little value. Very little of the dry west can be irrigated because there is insufficient water.

### Indiana's Forests and Grass

Formerly about nine-tenths of Indiana was forested, most of it with valuable hardwood trees. The clearing of the land to permit

farming was laborious, but it was done too completely. Indeed, at least one-tenth of Indiana ought to be wooded, and presumably will ere long be reforested. The fact that valuable trees grow as readily as they do is an advantage of significance. In this respect, Indiana is more fortunate than is most of the world. Apparently less than one-fourth of the world's land is as favored in this respect. Indiana even surpasses most of the favored Midwest in this respect, and far exceeds most of the other states.

Grass grows so well in Indiana that in the carrying capacity of pastures, it ranks almost at the top among all the states, according to impartial findings of the U. S. Department of Agriculture. Indiana's chief crops, the small grains and corn, belong botanically to the grasses. Their exceptionally large yields reflect the suitability of Indiana for grasses.

### Indiana's Minerals

The most valuable minerals in Indiana are water and soil. They are so abundant that they are "taken for granted" by most Hoosiers. For such persons, coal is Indiana's most important mineral, followed by oil and gas. Sand, gravel and stone are minerals of even greater total or potential value than coal, but, like water and soil, they are often taken for granted.

In coal production and reserves, Indiana ranks among the upper one-tenth of the world. Several states are ahead of Indiana in present production of coal, oil and gas, but more than three-quarters of the states are far behind. Indiana's production and reserves of these minerals are far greater than those of three-fourths of the world's countries, irrespective of their size.

Indiana has no production of metals, but neither do most other parts of the world.

In stone, gravel and sand supplies and output, Indiana is more fortunate than is two-thirds to three-fourth of the states and countries.

### Indiana's Climate

Climate is a resource of special significance. Without suitable climate, most other resources can be used only with great difficulty. Indiana has sufficient warmth for several highly valuable farm animals and crops, and generally has sufficient moisture for them; it has comparatively few disastrous storms. Indiana's climate admittedly is not ideal. The summers are partly too hot, and the winters have insufficient sunshine, and are partly too cold; torrential rainfalls, "cloud bursts", and spells that are too wet or too dry occur fairly often, and hailstorms, tornadoes, icy-coverings and fog are fairly frequent.

However, the climate of every other part of the world likewise is imperfect. A large share of the world is characteristically too dry, or too cold, or too hot, or too monotonous, or too extreme. Somewhat detailed comparisons have been made in *Climate of Indiana*, and elsewhere, between the climate of Indiana and that of other parts of the

world. Indiana's climate is clearly better than that of four-fifths of the world. Certainly little of the world has a climate better suited to the development of the type of life we desire. The greater dependability of Indiana's climate than that of most other areas is shown by the greater average yields of crops, and in several other ways. The contrast in the total yield of crops in a bad year and in a good one is notably smaller than in most states. Indeed, Indiana never has a year when some one of its major crops does not do well. The worst year of record in Indiana had a total agricultural output of two-thirds the annual average. By contrast, most of the world has seasons when the total crop harvest is considerably less than half of the normal output. The climate of Indiana is distinctly more stimulating to human activity than that of the regions south of Indiana, and more dependable than those of areas to the west or north.

The amount of land rated by the U. S. Department of Agriculture as "high quality crop land" is an excellent evidence of the suitability of the climate, soil, and topography for agriculture. Indiana has a larger acreage of Type 1 land than all but three larger midwestern states, and a larger area than the total, combined, area present in thirty other states. The area of such choice land is larger in Indiana than in the total continents of Australia and Africa. Asia has considerable land of comparable agricultural value only in small parts of northern India and south-eastern China. South America has comparably choice land in only a small area near Buenos Aires. Canada, Mexico and Central America have almost no land of the high quality of the better half of Indiana.

### Indiana's Water Supply

Indiana has relatively abundant water supplies largely because the climate is humid. The abundant rainfall renews the underground water supply, the many streams, and the lakes and reservoirs. Geologically recent glaciation yielded many gravel deposits, much sand, and many glacial lakes, all of which contribute notably to the State's water supply. One of the highly significant aspects of Lake Michigan is that it offers an unlimited supply of water to industries requiring much water. For example, Gary uses far more water than does Indianapolis.

The large amount of water available in Indiana has greatly facilitated its industrial development. In most of the states, the water supply is far less adequate than it is in Indiana. Many a site otherwise fairly suitable for industrial development is prevented from great growth by inadequate water.

### Scenery in Indiana

Although Indiana lacks spectacular canyons, waterfalls, and mountains, it has several notable limestone caverns, splendid sand dunes, picturesque gorges, and many attractive valleys, hills and plains. The

autumn colorations of the trees and shrubs are widely admired. A haze which is classed by artists as exceptionally beautiful adds to the attractiveness of widely-admired Brown County. Other scenic aspects which are more common than in most other parts of the world are hoar-frost, and ice-blanketed twigs and branches. The clouds of Indiana contribute more beauty than do the clouds of much of the world. Indeed, few Hoosiers realize that much of the world is generally either overcast or cloudless.

It is believed that despite the lack of spectacular scenic features, Indiana surpasses three-fourths of the world in scenic attractiveness of varied types. Every part of the world has, admittedly, scenic aspects, but most areas possess far fewer types of scenery than does Indiana; they have more scenic monotony.

The state parks of Indiana are exceptionally successful in making available to the public the scenic advantages of the state. In this respect Indiana is far ahead of most of the world—it is in the top five percent.

#### Locational Resources of Indiana

Indiana is exceptionally finely located, in the midst or heart of a progressive, rich, friendly area, near large markets and abundant raw materials. Only a small share of the world is nearly as favorably situated. Indiana has benefitted greatly from its favorable location. As the locational factor is of increasing significance (as a result of increased commerce and less isolation) it seems highly probable that Indiana's favorable location will have augmented importance, as North America develops. Conversely, the areas of the world which have relatively poor locations are declining in importance. Indiana's location is more favorable for its people than is the location of nine-tenths of the world's other tracts of similar shape and size.

#### Conclusions

Although in each of the resources here considered, Indiana is not ideal, and is surpassed by a few percent of the world, Indiana's average rank is very high. Areas which surpass it in one or two resources are generally far behind in respect to other important resources. In average rank as to these great resources, Indiana is surpassed by less than one-tenth of the world.

The conclusion that Indiana ranks very high as compared with most of the world reflects not local patriotism (I am not a Hoosier), nor youthful enthusiasm. Instead, it is based on considerable knowledge of other parts of our country and of the world, and on mature judgment.

Indiana's comparative richness justifies increased efforts of its citizens to make its leadership among the states even greater than at present.