Settlement Changes Caused by Strip Coal Mining in Indiana

LEE GUERNSEY[1], Indiana State Teachers College

An examination of the United States Census Bureau map showing the percentage change in population by county during the 1950-1960 decade reveals that only 19 counties out of the 92 Indiana counties failed to increase in population during the last ten years (Figure 1). Of the 19 counties which experienced a population decrease, according to the 1960 preliminary Census data, all except four are located in Western and Southwestern Indiana. Oddly enough these four exceptions (Switzerland, Ohio, Union, and Jay counties) are all located next to the Ohio border.

All except four of the 14 counties wherein strip coal mining has occurred experienced a decline during the 1950-1960 decade (Table 1).

Table 1.—Population of Strip Mine Counties: 1960 and 1950
(Minus sign (—) denotes decrease)

County	1960 (preliminary)	1950	Percent increase 1950 to 1960
Total	391,093	399,220	—2.0
Clay	24,057	23,918	0.6
Daviess	26,467	26,762	—1.1
Fountain	18,549	17,836	4.0
Gibson	29,791	30,720	—3.0
Greene	26,129	27,886	—6.3
Knox	41,392	43,415	—4.7
Owen	11,421	11,763	—2.9
Parke	14,617	15,674	—6.7
Pike	12,731	14,995	—15.1
Spencer	15,986	16,174	—1.2
Sullivan	21,483	23,667	—9.2
Vermillion	17,531	19,723	—11.1
Vigo	107,668	105,160	2.4
Warrick	23,271	21,527	8.1

These four exceptions are Fountain, Vigo, Clay, and Warrick counties. Six of the county seat cities of the 14 Indiana coal-producing counties also declined during the last ten years. The six which declined are Boonville, Jasonville, Petersburg, Rockport, Sullivan, and Washington. (Table 2)

None of the four coal-producing counties which gained in population had an increase comparable to the State average of +17.8 per cent. The coal-producing county which had the largest relative gain was Warrick County which had a relative increase of 8.1 per cent and an absolute increase of 1,644 persons. The relative and absolute increases are due

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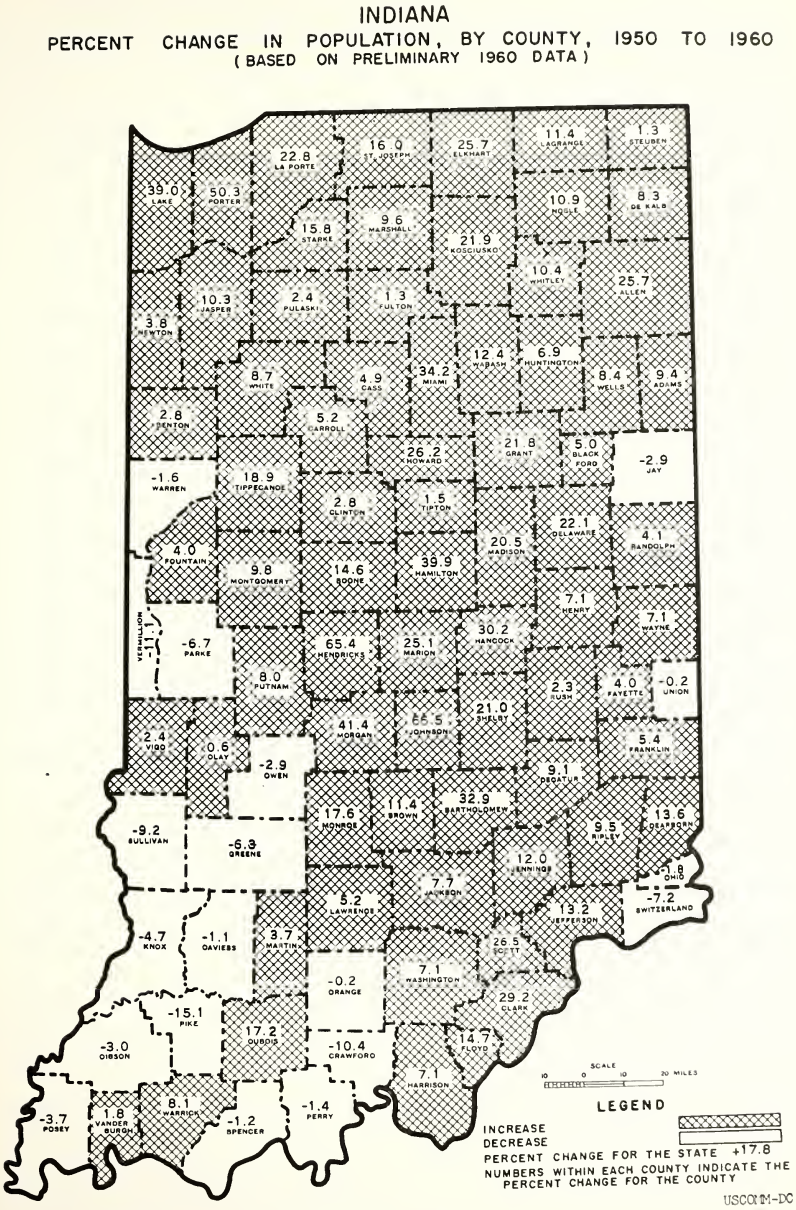

Figure 1

largely to the new Alcoa plant which represents the first step in large-scale industrial development in Southwestern Indiana outside of Terre Haute and Evansville.

Table 2.—Population of Strip Mine County Seats of 1,000 Inhabitants or More: 1960 and 1950

(Minus sign (—) denotes decrease)

Population of Strip Mine County Seats	1960 (preliminary)	1950	Percent increase 1950 to 1960
Bloomfield	2,198	2,086	5.4
Boonville	4,625	5,092	—9.2
Brazil	8,788	8,434	4.2
Covington	2,685	2,235	20.1
Jasonville	2,388	2,937	—18.7
Petersburg	2,923	3,035	—3.7
Princeton	7,846	7,673	2.3
Rockport	2,453	2,493	—1.6
Rockville	2,744	2,467	11.2
Spencer	2,486	2,394	3.8
Sullivan	4,934	5,423	—9.0
Terre Haute	71,786	64,214	11.8
Vincennes	17,939	18,831	4.7
Washington	10,754	10,987	—2.1

Vanderburgh and Vigo counties had the greatest absolute gains within Southwestern Indiana with increases of 2,891 persons and 2,528 persons respectfully. These absolute increases occurred because Evansville gained 11,857 persons and Terre Haute gained 7,572 between 1950 and 1960. In short, Warrick, Vanderburgh, and Vigo counties all have increased their industrial employment over their 1950 levels and each has experienced a resulting increase of population.

Settlements in Strip Mining Areas

There are no "mining towns" associated with strip mining. Strip mine labor is very mobile and most employees are local persons who have found employment with strip mine companies. Other miners commute from nearby towns which are usually located at a distance of not more than 20 or 30 miles away.

The closing of 153 underground coal mines since the 1920's has resulted in a fewer number of settlements in Southwestern Indiana. Strip coal mining is not conducive to the creation of any settlements since strip mines constantly migrate from place to place.

Once a large strip mine is opened, it commonly has a life span of 20 to 30 years. Of the 50 strip mines now operating in Southwestern Indiana, the local communities do not live in fear of a sudden shutdown. The end of strip mining in any area leaves neither ghost towns nor widespread unemployment. In contrast, both ghost towns and unemployment are common results of the closing of underground coal mines.

Semi-Urban Settlements

In strip-mine townships, the semi-urban settlements are concentrated near good roads, near urban areas, and usually have frontage on strip

mine lakes. Lakes formed among the spoil banks serve as sites for fishing, swimming, duck hunting and boating. A majority of the semi-urban settlements have their own private recreational facilities which are constructed around lakes left by the last box cut of the drag line.

In most cases, the coal companies retain ownership of the land after the coal is mined. They, therefore, can control to a considerable degree the location and number of semi-urban settlements. Several platted subdivisions are now being developed, and the selling of subdivisions is often a lucrative business. In these cases, it will probably expand in the future. It is estimated from field observations that between 500 and 800 semi-urban homes are located in the sections where strip mining has taken place in southwestern Indiana. But, exact numbers were impossible to correctly ascertain because of "no trespassing" and "keep out" signs or locked gates which are placed at the end of private lanes.

Impact of Strip Mining on Roads

The road pattern varies a great deal between the strip mined and unmined areas of Southwestern Indiana. The road pattern of the sections which have been strip mined is often oriented toward the preparation plant. In contrast, in the sections which have not been stripped, the roads generally follow the physical features or the section lines. The average mileage of roads per section in which strip mining has taken place was measured to be 2.8 miles, but in the sections where no strip mining has occurred there are only 2.2 miles of road per square mile.

Roads of the strip mine sections were often originally built for the hauling of coal to the preparation plant; and after the section is mined out, strip mine roads were commonly left as public roads. These county roads are well-built from slag and designed for heavy loads of coal. Thus, roads are of higher quality, road mileage is increased, but the road pattern is less efficiently arranged as a result of strip mining.

Farms and Farmsteads

Strip mining has encroached upon 1,310 farms in Southwestern Indiana, but 905 of the farm families have remained on the farm despite the strip mining (Table 3). Two factors are primarily responsible. First, strip mine companies do *not* generally strip completely contiguous sections of land in Indiana. Rather, strip mine patterns take on a disseminated distribution which leaves unmined lands within the sections for home sites. Secondly, the coal companies often leave the former land owner leveled lake sites by the box cut for his home. Strip mine lake sites in Indiana have no doubt attracted more families than the spoil banks have repelled.

Strip mining creates a "crazy quilt" pattern of fields (Figure 2). Most of the fields in the sections in which strip mining has occurred are irregular in size and shape. The traditional use of the land for agriculture is such that all available land suitable for cultivation is cropped, and normally spoil banks form the field boundaries. Some farmers rent land from as many as six different tracts in order to get sufficient acreages for cropland. Field boundaries are very irregular. The fields generally average from 10 to 15 acres in size with the fields being as large as strip mining will permit.

Table 3.—Impacts of Strip Coal Mining Upon Indiana Settlements

County	Acres of Land Strip Mined	Number of Farms Affected	Number of Farm Families Moved to Strip Mine
Clay	18,295	319	67
Greene	18,200	258	3
Pike	16,104	79	36
Warrick	13,265	142	42
Sullivan	8,303	145	67
Vigo	7,727	132	74
Knox	2,825	52	50
Owen	2,690	34	15
Vermillion	2,340	28	16
Daviess	2,218	40	13
Spencer	890	62	17
Parke	443	9	2
Fountain	380	5	3
Gibson	156	5	0
TOTAL	93,836	1,310	405

The number of farmsteads generally reflects the amount of strip mining that has occurred within each section. Strip mining has reduced the number of farmsteads by about 30 per cent, consequently, the more strip mining that occurs within one section, the fewer number of farmsteads that remain. Within all the townships of Southwestern Indiana in which strip mining has occurred, only one per cent of the farmsteads have been constructed since the land was stripped; and 69 per cent have remained unchanged.

Strip mining has caused 405 farm families who leased or sold their land for strip mining to move away from the area. They were seldom replaced by other persons. Farmsteads in the coal mining area have been reduced in number in recent years with a total of 393 having been torn down or abandoned in order to strip mine the coal. Furthermore, only 13 new farmsteads were constructed since the land was strip mined. From the farms on which the dwellings were torn down or abandoned, 405 families moved off farms which were strip mined. Thus, approximately 1,620 persons moved as a result of strip mining. There was about one family moved for each 231 acres of land strip mined.

The farms operating in the "coal mining area" are smaller than those in the "farming area" of Southwestern Indiana. Of the farmers interviewed, it was found that the average sized farm in the "coal mining area" was 92 acres as compared to 135 acres in the "farming area." These figures compare with 125 acres as the average sized Hoosier farm.

Farm operators in the "coal mining" area" are predominantly part-time farmers. Almost two-thirds of those interviewed worked off their

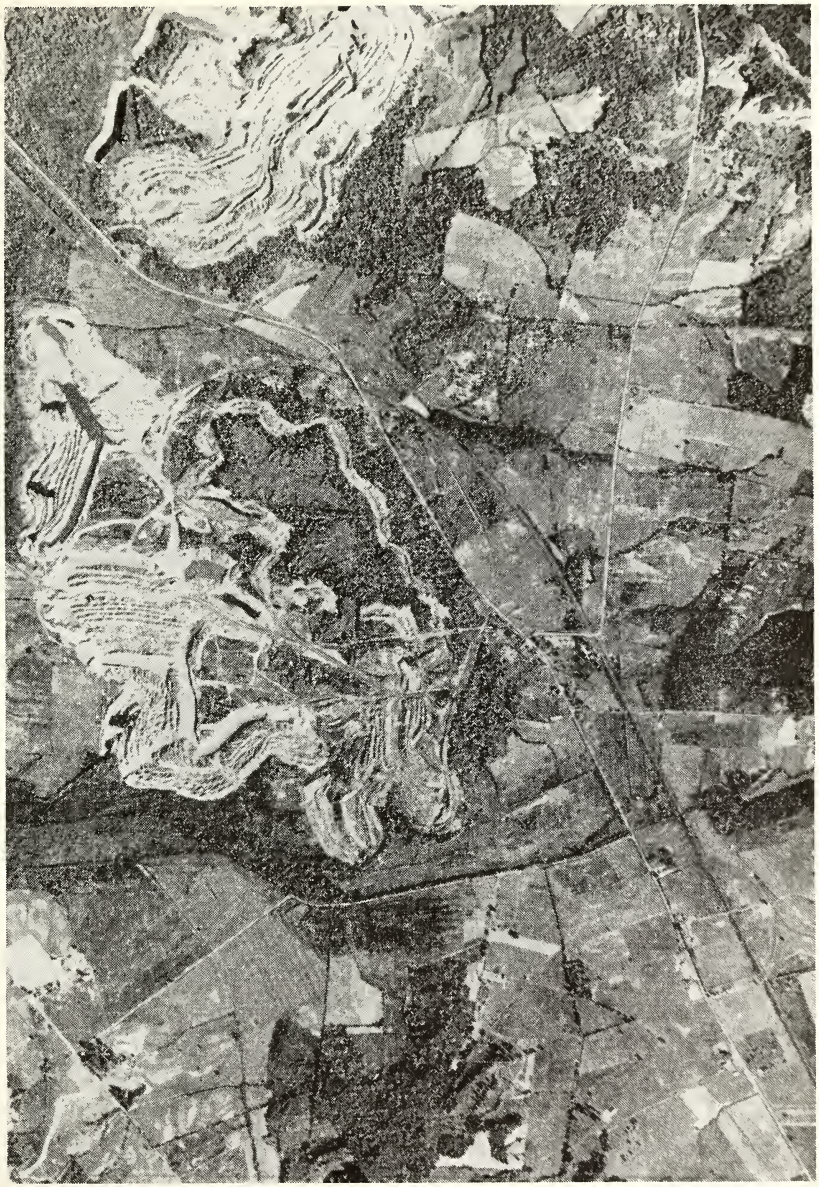

Figure 2. Patterns of fields created by strip mining

farm during 1959. Forty per cent had regular full-time jobs and farmed after completing work in various non-agricultural occupations. Strip mines provide employment to several hundred part-time farmers as truck drivers, shovel operators, mechanics, electricians, and ground men.

Conclusions

The comparison between the rural settlement patterns in all Indiana townships in which strip mining has taken place with those where no strip mining has occurred, demonstrates that strip mining causes some instability of settlements but not enough to have caused the population decline of 7,198 persons within Indiana's coal-mining counties. An analysis of the effect of strip mining on the rural settlements has revealed the following trends:

1. The number of individual farms decreased about 30 per cent after the tract of land was strip mined.
2. About 500 to 800 new semi-urban dwellings are now located on strip mined lands in Indiana.
3. A more irregular field pattern and smaller fields are created by strip mining, and single farm operating units are being changed into more complex multiple tracts.
4. Roads in the strip mined areas are of better quality; in addition, road mileage is increased, and a more random road pattern results from strip mining.
5. In 69 per cent of the townships where strip mining occurred, the rural farmsteads have remained unchanged, and in only one per cent of the farms affected, new buildings were constructed after the land was strip mined.

From the above data, it seems evident that strip coal mining is not the *direct* cause of the striking population decline of the Southwestern Indiana counties during the 1950-1960 decade. Despite the fact that 93,836 acres have been strip mined for coal in Indiana, only 405 farm families, or about 1,620 persons, have moved from the strip mined areas. At the same time, Hoosiers have found strip mine lakes to be desirable sites for several hundred semi-urban homes.

On the other hand, the *indirect* settlement changes caused by strip coal mining is considerably greater. For example, there are 93,836 less acres available as buildable land for industries or as cropland for agriculture. A total of 50,495 acres of cropland have been destroyed in order to mine the coal, and the value of the products from the strip mine acreages to date has been virtually nil and unable to support any settlements.

But, the lag between present industrial development and southwestern Indiana's industrial potential appears to be the *primary* reason for the general population decline rather than settlement changes caused by strip coal mining in Indiana. In short, the meager industrial development has not absorbed persons migrating from the relatively low-producing rural areas. Even though rural persons are reluctant to migrate, the lack of a dependable source of rural income has forced a total decline of 7,198 persons during the 1950-1960 decade in the counties wherein strip coal mining is located.