1980

Social characteristics and trends of the Prairie Pothole region of northern Montana: A preliminary assessment

Todd Gates

The University of Montana

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SOCIAL CHARACTERISTICS AND TRENDS
OF THE PRAIRIE POTHOLE REGION OF NORTHERN MONTANA
A Preliminary Assessment

by

TODD GATES

B.S., University of Wisconsin - Eau Claire, 1977

Presented in Partial Fulfillment of the Requirements
for the Degree of
Master of Science
Rural, Town, and Regional Planning
UNIVERSITY OF MONTANA
1980

Approved by:

[Signatures]
Chairman, Board of Examiners

[Signature]
Dean, Graduate School

Date
July 20, 1980
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CHAPTER I

INTRODUCTION

The National Environmental Policy Act (NEPA) of 1969 requires that an Environmental Impact Statement (EIS) precede all "... major Federal actions significantly affecting the quality of the human environment..."\(^1\) In 1974, a major Federal court decision, in Natural Resources Defense Council (NRDC), et. al. v. Rogers C.B. Morton, et. al., determined that livestock grazing on public lands is a major action and directed the Bureau of Land Management (BLM) to prepare EISs for all grazing management decisions on public lands it administers.\(^2\) As a result of this decision, the BLM must prepare 144 grazing management EISs. The Lewistown, Montana District Office of the BLM has been directed to prepare one such statement (the Prairie Pothole Vegetation Allocation EIS) which is scheduled to be completed by September of 1981. Vegetation allocation concerns the apportionment of forage among competing users.

The Prairie Pothole EIS area includes approximately 1.75 million acres of public lands in northern Montana. The EIS area extends from the Missouri River Breaks northward to the Canadian border and from the Blackfeet Reservation eastward to the North Dakota border (Figure 1). The term "Prairie Pothole" refers to the numerous glacial potholes or depressions found throughout the area.
PRAIRIE POTHOLE AREA

PRAIRIE POTHOLE INTENSIVE STUDY AREA
PROBLEMS OF SOCIAL ASSESSMENT

In preparing a vegetation allocation EIS, the BLM not only assesses impacts on the physical environment, but impacts on people. Thus, the EIS is prepared by an interdisciplinary team, utilizing specialists from both the natural and social sciences. Typically, the EIS team includes specialists from such disciplines as biology, geology, pedology, and forestry, together with English, economics, and sociology. The team member whose duty it is to assess social impacts is frequently referred to by the broad title of "social scientist," but need not come from a specific field of social science. It is his job to describe how area residents will be affected by BLM rangeland management decisions.

The initial problem facing the social scientist is to familiarize himself with the conditions of social life in the study area. This is a preliminary stage in the process of social impact assessment and is a prerequisite to the eventual completion of the social impact sections of the EIS. In his preliminary assessment, the social scientist should not limit himself to data he feels will appear in the EIS, but should attempt to gain an overall "feel" for the area. The preliminary assessment, however, should not be an inventory of raw data. Rather, it should be an analysis of significant social features.

METHODOLOGY

Intensive Study Area

While the entire Prairie Pothole EIS area encompasses portions of an eleven-county region, three centrally located counties contain approximately ninety-four percent of the BLM lands in the area. For this reason, the assessment of social features is limited to a three-county "intensive study area" consisting of Blaine, Phillips, and Valley counties.
(Figure 1). The BLM's holdings in the intensive study area form large, consolidated tracts, as opposed to the much smaller, scattered tracts in the other eight EIS area counties. Thus, the intensive study area is much more sensitive to BLM rangeland management decisions and is therefore the primary focal point for social assessment. Where outstanding characteristics are found to occur in any of the other eight EIS area counties, they are noted.

Use of Social Indicators

Social indicators are used in this paper to identify the significant characteristics and trends in the intensive study area. Three broad categories of potential social indicator data have been identified:

1. Statistical-type data (secondary).
2. Informal interview and field observation data (primary).

The social indicators used in this paper are based primarily on census and other secondary statistical sources. Unfortunately, 1979 Census of Agriculture and 1980 Census of Population data are not yet available for inclusion in this study. Personal knowledge of the area is used to supplement the statistical data and to provide additional analysis. No applicable social survey data were available. Thus, within the limits of available sources, social indicators have been selected which are believed to reflect the characteristics and trends of the intensive study area. Social indicators are presented in four major areas: (1) population, (2) employment and income, (3) land status, and (4) infrastructure and related areas.

The data presented in this paper are the most recent available for each particular set of indicators. In some instances, the data for
past decades are also presented. The comparability of certain data is
limited to some extent by the difference in reporting periods and pro­
cedures used by the various sources.

RESEARCH OBJECTIVES

The purpose of this research is to assess the conditions of social
life in the Prairie Pothole region of northern Montana, pursuant to the
requirements of NEPA. The information presented in this paper is intended
to serve as a base-source for social impact analysis in the Prairie Pothole
EIS. The primary objectives of this research are twofold:

1. To identify and assess the significant social characteristics
   and trends for each of the three counties (Blaine, Phillips,
   and Valley) in the intensive study area.

2. To aggregate county-level data in order to provide a regional
   summary of the salient social features in the intensive study
   area.
CHAPTER II

POPULATION

Eastern Montana has typically been characterized in terms of cowboys, Indians, and wide open spaces. Despite the often uncanny accuracy of such stereotypes, there is an obvious need for more specific, quantitative sources. This chapter presents a detailed analysis of population for three eastern Montana counties, based on statistical sources. The indicators presented herein reflect the recent population changes, racial composition, and population distribution in Blaine, Phillips, and Valley counties.

RECENT CHANGES

Population change is presented in this section as an indicator of social stability. Change is measured as increases or decreases in the size of a given population over time. It should be noted that the term "stability," as used here, refers to population changes for entire counties and does not reflect the intra-area movement of population within the counties. Table 1 presents population changes, on a county and state basis, for the periods 1960-1970 and 1970-1977. Blaine, Phillips, and Valley counties each declined significantly in population during the decade of the 1960's. This trend was typical throughout eastern Montana. In contrast, the State as a whole showed a slight increase in population, suggesting that much of this growth occurred in the western counties. Valley
### TABLE 1


<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>#</td>
<td>%</td>
</tr>
<tr>
<td>Blaine</td>
<td>8,091</td>
<td>6,727</td>
<td>7,000</td>
<td>-1,364</td>
<td>-16.9</td>
</tr>
<tr>
<td>Phillips</td>
<td>6,027</td>
<td>5,386</td>
<td>5,400</td>
<td>-641</td>
<td>-10.6</td>
</tr>
<tr>
<td>Valley</td>
<td>17,080</td>
<td>11,471</td>
<td>12,600</td>
<td>-5,609</td>
<td>-32.8</td>
</tr>
<tr>
<td>Montana</td>
<td>675,000</td>
<td>694,409</td>
<td>761,000</td>
<td>+19,409</td>
<td>+2.9</td>
</tr>
</tbody>
</table>


County had the largest loss in the intensive study area with 32.8 percent fewer residents from 1960 to 1970. This was also the greatest loss in the eleven-county region and in the entire State.

The declining trend of the 1960's was reversed during the period 1970-1977 as Blaine and Phillips counties showed a net increase in population. Once again, Valley County stood out with an increase of 9.8 percent, which was slightly higher than the State figure of 9.6 percent.

Components of Change

Change in the size of a population is the result of two factors: (1) reproductive change or natural increase and (2) net migration. Natural increase is the difference between the number of births and the number of deaths within a given population. Net migration is the difference between net change and natural increase, with a negative figure denoting out-migration.

As Table 2 shows, 1960-1970 natural increases in population were offset by significant out-migration in each of the three counties being examined, resulting in a net loss of residents. Net out-migration was experienced by the State as well, but at a much lower level, hence a net population increase.

Figures for the period 1970-1977 once again indicate the influence of out-migration on population change in the intensive study area. That is, the population increases of the 1970's occurred as a result of significant slowdowns in the rates of out-migration. In fact, Valley County showed a positive net migration for the period. The State exhibited a similar pattern.
### TABLE 2


<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>#</td>
<td>%</td>
<td>#</td>
<td>%</td>
</tr>
<tr>
<td>Blaine</td>
<td>857</td>
<td>10.6</td>
<td>391</td>
<td>5.8</td>
</tr>
<tr>
<td>Phillips</td>
<td>547</td>
<td>9.1</td>
<td>213</td>
<td>4.0</td>
</tr>
<tr>
<td>Valley</td>
<td>4,063</td>
<td>23.8</td>
<td>974</td>
<td>8.5</td>
</tr>
<tr>
<td>Montana</td>
<td>77,795</td>
<td>11.5</td>
<td>39,000</td>
<td>5.6</td>
</tr>
</tbody>
</table>


Causes of Out-migration

Out-migration in Blaine, Phillips, and Valley counties, for the period 1960-1970, is believed to have resulted, to a major extent, from a lack of employment opportunities. The extremely high rate of out-migration in Valley County during this period can be at least partially explained by the closure of the Glasgow Air Force Base and the subsequent departure of base personnel. A regional study of out-migration in Montana, for the period 1965-1970, indicates that out-migration was greatest among the 15-24 year age group, in an area roughly corresponding to the overall Prairie Pothole region. It is likely that this trend also held true for the three counties in the intensive study area. In addition to the need for jobs, out-migration among this group would coincide with the need for college-bound high school graduates to move away in order to attend post-secondary schools.

AGE STRUCTURE

Age structure is a fundamental compositional element of a population. One method of analyzing age structure is to establish dependency ratios. This method assumes that the "productive" segment of a population is comprised of the persons in the age group 20-64 years. Persons under 20 years of age (youth) and over the age of 64 (old-age) are assumed to be dependent on the rest of the population. The dependency ratio measures the number of "dependent" persons that each 100 "productive" persons must support. Clearly, the dependency ratio method is based on limited assumptions and is only a rough measure of the dependency load that a population must carry. Notwithstanding, it is a useful method of comparing different populations.
Table 5 displays population figures for each of the three major age groups that were used in determining the dependency ratios found in the last three columns of the table. The dependency ratios were calculated in three parts: (1) the total dependency ratio represents the number of dependent persons in the youth and old-age categories that are supported by each 100 productive adults (ages 20-64); (2) the youth dependency ratio represents the number of persons under the age of 20 that are supported by each 100 productive adults; and (3) the old-age dependency ratio represents the number of persons age 65 and over that are supported by each 100 productive adults.\(^6\) The figures shown in Table 3 are based on 1970 data, which were the most recent available.

All dependency ratios for the counties in the intensive study area were higher than those for the State, with the exception of the ratio of dependent aged for Valley County, 18.1, which was lower than the State figure of 19.8. Phillips County showed the highest old-age dependency ratio, 28.9, as well as the lowest youth dependency ratio, 87.2. In Blaine County the total dependency ratio was 117.9 and the youth ratio was 93.4, the highest such ratios in the intensive study area.

The large dependency ratios in the three counties are probably related to their rural, agricultural way of life, where families tend to be larger than in urban areas and where young adults tend to move away. In addition, counties with large Indian populations have correspondingly large youth dependency ratios. This is evidenced in Glacier County with a youth ratio of 102.5 and in Roosevelt County with a ratio of 97.5, as well as in Blaine County with a ratio of 93.4, all far above the State figure of 80.1.
### TABLE 3

**POPULATION AGE STRUCTURE: 1970**

<table>
<thead>
<tr>
<th>COUNTY</th>
<th>Total</th>
<th>0-19</th>
<th>20-64</th>
<th>65+</th>
<th>Total Dependency</th>
<th>Youth Dependency</th>
<th>Old-Age Dependency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blaine</td>
<td>6,727</td>
<td>2,882</td>
<td>3,087</td>
<td>758</td>
<td>117.9</td>
<td>93.4</td>
<td>24.6</td>
</tr>
<tr>
<td>Phillips</td>
<td>5,386</td>
<td>2,174</td>
<td>2,492</td>
<td>720</td>
<td>116.1</td>
<td>87.2</td>
<td>28.9</td>
</tr>
<tr>
<td>Valley</td>
<td>11,471</td>
<td>4,978</td>
<td>5,497</td>
<td>996</td>
<td>108.7</td>
<td>90.6</td>
<td>18.1</td>
</tr>
<tr>
<td>Glacier</td>
<td>10,783</td>
<td>5,039</td>
<td>4,917</td>
<td>827</td>
<td>119.3</td>
<td>102.5</td>
<td>16.8</td>
</tr>
<tr>
<td>Roosevelt</td>
<td>10,365</td>
<td>4,626</td>
<td>4,747</td>
<td>992</td>
<td>118.3</td>
<td>97.5</td>
<td>20.9</td>
</tr>
<tr>
<td>Montana</td>
<td>694,409</td>
<td>278,276</td>
<td>347,397</td>
<td>68,736</td>
<td>99.9</td>
<td>80.1</td>
<td>19.8</td>
</tr>
</tbody>
</table>

The dependency ratios show where youth and old-age groups comprise significant portions of the population and provide some measure of their demand on the productive groups. Thus, these data are useful in assessing needs and services relative to planning.

RACIAL COMPOSITION

The racial composition of a population is an important component of social structure. It is useful in identifying differences between ethnic groups, such as cultural traits, social status and behavior.

Two major racial groups were identified in the intensive study area, based on the most recent data available, for 1970 (Table 4). As expected, each of the three counties was composed predominantly of White residents. Indian residents comprised the second significant racial group. All other racial groups constituted less than one percent of the population in any of the three counties (these figures were not included in Table 4).

Blaine County had the largest Indian population with 23.2 percent. This was a reflection of the presence of the Fort Belknap Reservation, located mainly in Blaine County. Although Phillips and Valley counties had much smaller Indian populations, 4.8 and 8.5 percent respectively, they still exceeded the State percentage of 3.9.

It is important to note that two counties in the overall Prairie Pothole region had major Indian populations. The Indian population in Glacier County comprised 42.4 percent of the total, or 4,576 residents, reflecting the presence of the Blackfeet Reservation in the county. The location of the Fort Peck Reservation, much of which lies in Roosevelt County, accounted for an Indian population of 30.0 percent in that county.
# TABLE 4

## RACIAL COMPOSITION: 1970

<table>
<thead>
<tr>
<th>COUNTY</th>
<th>Total Population</th>
<th>White #</th>
<th>%</th>
<th>Indian #</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blaine</td>
<td>6,727</td>
<td>5,143</td>
<td>76.5</td>
<td>1,562</td>
<td>23.2</td>
</tr>
<tr>
<td>Phillips</td>
<td>5,386</td>
<td>5,115</td>
<td>95.0</td>
<td>258</td>
<td>4.8</td>
</tr>
<tr>
<td>Valley</td>
<td>11,471</td>
<td>10,458</td>
<td>91.2</td>
<td>972</td>
<td>8.5</td>
</tr>
<tr>
<td>Glacier</td>
<td>10,783</td>
<td>6,167</td>
<td>57.2</td>
<td>4,576</td>
<td>42.4</td>
</tr>
<tr>
<td>Roosevelt</td>
<td>10,365</td>
<td>7,201</td>
<td>69.5</td>
<td>3,110</td>
<td>30.0</td>
</tr>
<tr>
<td>Montana</td>
<td>694,409</td>
<td>663,043</td>
<td>95.5</td>
<td>27,130</td>
<td>3.9</td>
</tr>
</tbody>
</table>


**Note:** Percentages may not add due to rounding.
POPULATION DISTRIBUTION

Urban-Rural Residence Patterns

The geographic distribution of an area's population, in terms of residence, is indicative of the urban or rural nature of the area. The 1970 Census of Population defined as urban those persons living in places of 2,500 or more inhabitants. Persons not living in urban places were classified as rural residents.7

Contrary to popular impression, Montana is an urban state. As of 1970, 53.4 percent of Montana's residents lived in urban communities. This was not the case in the intensive study area. In fact, both Blaine and Phillips counties were classified as entirely rural. Even their largest communities had populations of less than 2,500. The majority of Valley County's residents also lived in rural areas, but 41.0 percent were classified as urban, residing in Glasgow, the only urban community in the three-county area.8 It is anticipated that the town of Malta, the largest community in Phillips County, may be reclassified as urban following the results of the 1980 Census of Population.

Population Density

The rural nature of the counties in the intensive study area, as illustrated in the previous section, was further suggested by their population densities. Phillips and Blaine counties, both classified as entirely rural in 1970, had extremely low population densities of 1.0 and 1.6 persons per square mile. Many of the residents in these counties were relatively isolated. Valley County, with its urban population, had a higher density of 2.3 persons per square mile, but was still well below the State figure of 4.7.9 These figures are presented as crude indicators of population distribution. Caution should be taken in their interpreta-
tion since they are averages and are subject to the limitations inherent therein i.e., they may not reflect local concentrations of population.

Data for 1977 indicate that the only notable changes in population density that occurred were an increase in Valley County to 2.5 and in the State to 5.2 persons per square mile.
CHAPTER III

EMPLOYMENT AND INCOME

This chapter deals with aspects of the intensive study area that are essentially economic, but are so fundamental as to be of basic concern in social analysis. Employment and income data are herein presented as indicators of social well-being.

EMPLOYMENT

Employment by Occupation

The purpose of this section is to provide insight into the nature of employment in terms of livelihood and not to present an actual economic analysis. In this context, employment data, by occupation, were used to identify the principal types of jobs being held by county residents.

Table 5 lists the percentage of employed persons in various occupational categories, on a county and state basis, for 1970. Farming was overwhelmingly the largest category in each of the three counties. It accounted for 29.7 percent of all jobs in Blaine County, 34.5 percent in Phillips County, and 22.4 percent in Valley County. The farming category includes farmers and farm managers together with farm laborers and foremen. (As used here, the term "farm" is synonymous with "ranch.") Secondarily, the professional/technical workers and the service workers categories were consistently large throughout the counties. In comparison, the two most important occupational categories in the State were clerical workers (14.0 percent) and professional/technical workers (14.0 percent). For
<table>
<thead>
<tr>
<th>OCCUPATION GROUP</th>
<th>Blaine Co.</th>
<th>Phillips Co.</th>
<th>Valley Co.</th>
<th>Montana</th>
</tr>
</thead>
<tbody>
<tr>
<td>Professional, Technical, &amp; Kindred Workers</td>
<td>12.2</td>
<td>12.8</td>
<td>12.3</td>
<td>14</td>
</tr>
<tr>
<td>Managers &amp; Administrators (Non-Farm)</td>
<td>6.6</td>
<td>8.4</td>
<td>9.2</td>
<td>10</td>
</tr>
<tr>
<td>Sales Workers</td>
<td>3.6</td>
<td>5.5</td>
<td>4.7</td>
<td>6</td>
</tr>
<tr>
<td>Clerical &amp; Kindred Workers</td>
<td>8.6</td>
<td>6.1</td>
<td>10.9</td>
<td>14</td>
</tr>
<tr>
<td>Craftsmen, Foremen, &amp; Kindred Workers</td>
<td>8.9</td>
<td>9.8</td>
<td>9.4</td>
<td>12</td>
</tr>
<tr>
<td>Operatives &amp; Kindred Workers</td>
<td>7.3</td>
<td>4.9</td>
<td>9.7</td>
<td>11</td>
</tr>
<tr>
<td>Laborers (Non-Farm)</td>
<td>2.4</td>
<td>1.0</td>
<td>4.3</td>
<td>4</td>
</tr>
<tr>
<td>Farmers, Farm Managers, Farm Laborers, &amp; Foremen</td>
<td>29.7</td>
<td>34.5</td>
<td>22.4</td>
<td>11</td>
</tr>
<tr>
<td>Service Workers, Except Private Household</td>
<td>12.7</td>
<td>9.2</td>
<td>12.3</td>
<td>13</td>
</tr>
<tr>
<td>Private Household Workers</td>
<td>3.0</td>
<td>0.9</td>
<td>0.5</td>
<td>1</td>
</tr>
<tr>
<td>Occupation Not Reported</td>
<td>4.9</td>
<td>7.1</td>
<td>4.3</td>
<td>4</td>
</tr>
<tr>
<td>TOTAL EMPLOYED</td>
<td>2114</td>
<td>1991</td>
<td>4152</td>
<td>248,342</td>
</tr>
</tbody>
</table>


Note: Includes all persons ages 14 years and over who were employed; only whole figures were shown for the State. Percentages may not add due to rounding.
the State as a whole, the number of workers in the various occupations was fairly evenly dispersed, in contrast to the intensive study area.

While there was uniformity among the counties in terms of total workers, there were variations according to sex. In each county, for 1970, farming was the most important occupational category for men, but service workers formed the largest category for women. Service workers include hotel maids, waitresses, nurses aides, hairdressers, etc., except private household workers. For the entire State, craftsmen formed the largest category for men and clerical workers the largest category for women.11

Unemployment

Unemployment rates are presented in this section as indicators of a local population's access or lack of access to job opportunities. As used here, the unemployment rate refers to the percentage of persons in the civilian labor force (ages 14 and over) who were unemployed but seeking work. Persons not classified in the civilian labor force include: military personnel, students, housewives, retired and disabled persons, prisoners, and the voluntarily idle.12

Table 6 presents unemployment rates, on a county and state basis, for the years 1970 and 1977. In 1970, Blaine was the only county in the intensive study area with an unemployment rate higher than that for the State, 5.1 vs. 4.4 percent. It should be noted that two other counties with large Indian populations, Glacier and Roosevelt, also had high unemployment rates. By 1977, the situation had changed. Valley County's unemployment rate had grown to 8.8 percent, making it the highest in the three-county area, while Blaine County and the State had identical rates of 6.4 percent. Thus, the three counties showed increased rates of unemployment for the period 1970-1977, following the statewide trend.
TABLE 6
ANNUAL AVERAGE UNEMPLOYMENT RATES: 1970 AND 1977

<table>
<thead>
<tr>
<th>COUNTY</th>
<th>1970</th>
<th>1977</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blaine</td>
<td>5.1</td>
<td>6.4</td>
</tr>
<tr>
<td>Phillips</td>
<td>4.2</td>
<td>5.9</td>
</tr>
<tr>
<td>Valley</td>
<td>4.0</td>
<td>8.8</td>
</tr>
<tr>
<td>Glacier</td>
<td>5.8</td>
<td>8.9</td>
</tr>
<tr>
<td>Roosevelt</td>
<td>5.8</td>
<td>6.1</td>
</tr>
<tr>
<td>Montana</td>
<td>4.4</td>
<td>6.4</td>
</tr>
</tbody>
</table>

Per Capita Personal Income

Personal income data are useful as an indicator of the material comfort and well-being of a population. This assumes that the higher the level of income, the greater the access to social amenities. For purposes of comparison, personal income data were calculated on a per capita basis, reflecting population size.

Table 7 lists the levels of per capita personal income, on a county and state basis, for 1977. Blaine County showed the lowest income level in the three-county area ($4,239) and ranked fiftieth out of a total of fifty-six counties in the entire State. Phillips County ranked forty-ninth in the State ($4,420), following Valley County which ranked thirty-eighth ($4,861). The level of per capita personal income in all three counties was well below the State level of $6,093. This is presumably related to the dominance of farming as an occupation in each county. The type of job in which a worker is employed clearly influences what he earns. Since farming was one of the lowest paying occupations in the State, it follows that per capita personal income was also quite low in the intensive study area.

Poverty Status

Income data can be expressed not only in terms of levels, but in terms of distribution as well. Specifically, the number of persons in a population who have incomes below a given poverty level is indicative of social status and well-being. Persons with poverty-level incomes may have difficulty obtaining basic necessities such as food, clothing, shelter, medical care, and transportation.
TABLE 7

PER CAPITA PERSONAL INCOME: 1977

<table>
<thead>
<tr>
<th>COUNTY</th>
<th>LEVEL</th>
<th>COUNTY RANK</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blaine</td>
<td>$4,239</td>
<td>50</td>
</tr>
<tr>
<td>Phillips</td>
<td>$4,420</td>
<td>49</td>
</tr>
<tr>
<td>Valley</td>
<td>$4,861</td>
<td>38</td>
</tr>
<tr>
<td>Montana</td>
<td>$6,093</td>
<td>--</td>
</tr>
</tbody>
</table>

Table 8 presents the number and percentage of persons below the poverty level, on a county and state basis, for 1969. The figures are based on a poverty index, as defined by the Bureau of the Census. The poverty level varies according to factors such as age, sex, family size, and farm or nonfarm residence. For example, the poverty level for a non-farm family of four, headed by a male (under 65 years), was $3,745, as compared to $3,197 for a corresponding farm family.\textsuperscript{14}

Blaine County had the highest percentage of persons below the poverty level of any county in the intensive study area (31.4 percent). In fact, the figure was so high as to approach twice that of Phillips (16.6 percent) and Valley (16.8 percent) counties. The high figure for Blaine County was undoubtedly related to the relatively large Indian population, as discussed in the previous chapter. That there is a relationship between the relative size of a county's Indian population and the percentage of persons with incomes below the poverty level was further exemplified in Glacier and Roosevelt counties. All five of the counties mentioned above had larger percentages of their residents below the poverty level than did the State (13.6 percent). Additionally, the importance of farming as an occupation, with its low income level, appears to have been a factor, particularly in the intensive study area.
TABLE 8
PERSONS WITH INCOME BELOW POVERTY LEVEL: 1969

<table>
<thead>
<tr>
<th>COUNTY</th>
<th>TOTAL POPULATION</th>
<th>BELOW POVERTY LEVEL</th>
<th>Number</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blaine</td>
<td>6,660</td>
<td>2,073</td>
<td>31.4</td>
<td></td>
</tr>
<tr>
<td>Phillips</td>
<td>5,374</td>
<td>890</td>
<td>16.6</td>
<td></td>
</tr>
<tr>
<td>Valley</td>
<td>11,486</td>
<td>1,933</td>
<td>16.8</td>
<td></td>
</tr>
<tr>
<td>Glacier</td>
<td>10,932</td>
<td>3,225</td>
<td>29.5</td>
<td></td>
</tr>
<tr>
<td>Roosevelt</td>
<td>10,255</td>
<td>2,385</td>
<td>23.3</td>
<td></td>
</tr>
<tr>
<td>Montana</td>
<td>676,437</td>
<td>91,669</td>
<td>13.6</td>
<td></td>
</tr>
</tbody>
</table>

CHAPTER IV

LAND STATUS

Land use is indicative of the relationship between the people of an area and their physical environment. In Blaine, Phillips, and Valley counties, where agriculture is the mainstay, land use is a particularly important indicator of the way of life. In the previous two chapters, the rural/agricultural nature of the three counties was briefly discussed. This section focuses more closely on the various types of farming and ranching activities that occur.

LAND USE

Table 9 presents a breakdown, by county, of the major land uses in the intensive study area, for 1974. Grazing was the dominant land use in each of Blaine, Phillips, and Valley counties. Rangeland provides the forage that is essential to livestock grazing. Rangeland refers to those areas where the native vegetation consists mainly of grasses along with shrubs and forbs. In addition, these lands provide forage and habitat for wildlife, help maintain soil stability and water quality, and provide recreational opportunities. As shown in Table 9, 74 percent of the total land area in Phillips County was used for grazing, with 60 percent in Blaine County, and 47 percent in Valley County.

Crop production constituted a second important land use in each county. As used here, cropland refers to harvested acreages and those used for pasture. Wheat was the primary crop, with some barley also being
### TABLE 9

**LAND USE: 1974**

<table>
<thead>
<tr>
<th>LAND USE</th>
<th>BLAINE CO.</th>
<th>PHILLIPS CO.</th>
<th>VALLEY CO.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No. Acres</td>
<td>Percent Total</td>
<td>No. Acres</td>
</tr>
<tr>
<td>Total</td>
<td>2,735,872</td>
<td>--</td>
<td>3,336,064</td>
</tr>
<tr>
<td>Grazing</td>
<td>1,634,908</td>
<td>60</td>
<td>2,474,645</td>
</tr>
<tr>
<td>Crop Production</td>
<td>391,929</td>
<td>14</td>
<td>405,420</td>
</tr>
<tr>
<td>Irrigated Land</td>
<td>50,962</td>
<td>2</td>
<td>50,606</td>
</tr>
<tr>
<td>Woodland</td>
<td>29,891</td>
<td>1</td>
<td>5,621</td>
</tr>
<tr>
<td>Other Land</td>
<td>628,182</td>
<td>23</td>
<td>399,772</td>
</tr>
</tbody>
</table>


Montana Department of Community Affairs, Profile of the Native American, cited by Abt Associates, Regional Economic Analysis, p. 68. Derived.

Note: Percentages may not add due to rounding. Asterisk denotes less than 0.5 percent.
grown. Valley County, which had the lowest percentage of land devoted to grazing, had the highest percentage of land devoted to crop production (23 percent) in the intensive study area. Blaine and Phillips counties had 14 and 12 percent of their respective land areas in crop production.

Both the woodland and irrigated land categories comprised relatively minor proportions of the land area in each of the three counties.

The category, "other land," includes urban and built-up areas, lands used for farm buildings, roads and small ponds, and Indian and wildlife lands that were not leased for agricultural purposes. Wildlife lands include those areas that have been set aside as refuges. The Indian lands refer to the reservations, which make up the majority of the category, "other land."

The majority of the lands in the intensive study area were privately owned. However, it is important to note that the Bureau of Land Management (BLM) controlled a significant proportion of the land in each county, primarily rangeland. The BLM controlled almost one-third of the total land area in Phillips and Valley counties, 32 percent in each, and 17 percent of the land in Blaine County. Much of the BLM rangeland was leased to private ranchers for livestock grazing. Thus, many ranch operations relied on the use of BLM rangeland to provide part of the forage for their livestock (mainly cattle). The terms "ranch" and "farm" are not necessarily exclusive since many operations raise both livestock and cash crops. Clearly, the BLM's land management decisions have a significant influence on the ranching based way of life in the three counties.

**AVERAGE FARM AND RANCH SIZE**

The history of agriculture in eastern Montana has been a changing one. From droughts to depressions, the farms and ranches have still sur-
vived. This section looks at some of the more recent changes that have occurred in farms and ranches in the intensive study area.

Table 10 shows the changes that occurred in the number and average size of farms and ranches, for the period 1964-1974. These figures, based on Census of Agriculture data, should be viewed with caution. According to the Census Bureau's definition:

... a farm is any place from which $250 or more of agricultural products were sold, or normally would have been sold, during the census year, or any place of ten acres or more from which $50 or more of agricultural products were sold, or normally would have been sold, during the census year.¹⁶

This definition would tend to overestimate the actual number of viable farm and ranch units and to slightly underestimate the average size.

Notwithstanding, Table 10 indicates that an important trend occurred. For the period 1964-1974, the number of farm and ranch operations declined while the average size increased. Thus, there appears to have been a tendency for the smaller operations to merge or to be annexed by the larger operations, reflecting the overall capital intensification of agriculture. This trend was most pronounced in Blaine County, where the number of farms and ranches decreased by 21.2 percent and the average size of operation increased by 20.0 percent. The only exception was a slight decrease in the average farm size in Phillips County of 1.5 percent. The considerable difference in the direction and percentage of change in the average farm size between Blaine County (+20.0 percent) and Phillips County (-1.5 percent) may be attributable to the proportionately smaller number of small/marginal operations in Phillips County.¹⁷
TABLE 10
CHANGE IN NUMBER AND AVERAGE SIZE OF FARMS: 1964–1974

<table>
<thead>
<tr>
<th>COUNTY</th>
<th>NO. OF FARMS</th>
<th>CHANGE</th>
<th>AVG. SIZE FARMS (Acres)</th>
<th>CHANGE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1964</td>
<td>1974</td>
<td>#</td>
<td>%</td>
</tr>
<tr>
<td>Blaine</td>
<td>618</td>
<td>487</td>
<td>- 131</td>
<td>-21.2</td>
</tr>
<tr>
<td>Phillips</td>
<td>621</td>
<td>540</td>
<td>- 81</td>
<td>-13.0</td>
</tr>
<tr>
<td>Valley</td>
<td>887</td>
<td>746</td>
<td>- 141</td>
<td>-15.9</td>
</tr>
<tr>
<td>Montana</td>
<td>27,020</td>
<td>23,324</td>
<td>-3,696</td>
<td>-13.7</td>
</tr>
</tbody>
</table>


Note: The term "farms," as used here, includes "ranches."
CHAPTER V

CRIME, EDUCATION, HEALTH, AND HOUSING

The provision of public services and facilities which provide for the general health, safety, and welfare of a population is an important aspect of social well-being. This chapter presents social indicators which are believed to reflect the significant aspects of community infrastructures in the intensive study area.

CRIME

Public and personal safety is one of the most important factors affecting the quality of life. Moreover, the control of criminal behavior is a basic concern of all communities. The Montana Board of Crime Control itemizes reported criminal acts on a county basis. Crimes are classified by type, namely: aggravated assault, robbery, burglary, grand theft, rape, homicide, and auto theft. These data must be interpreted with caution because they reflect only those offenses known to police. Also, residents' willingness to report crimes may vary, with crime usually being under-reported in rural areas as compared with urban areas.

Table 11 presents crime rates broken down by the various types of crimes, on a county basis, for 1974. The crime rates indicate the number of offenses per 100,000 persons. Both Phillips and Valley counties were highest in grand theft, followed by burglary. In contrast, Blaine County was highest in aggravated assault, followed by burglary. In terms of total crime rate, each of the three counties in the intensive study area was well below the State rate of 2114.1. Phillips County had the
### TABLE 11

**CRIME RATES BY TYPE OF CRIME: 1974**

(Per 100,000 population)

<table>
<thead>
<tr>
<th>TYPE OF CRIME</th>
<th>BLAINE CO.</th>
<th>PHILLIPS CO.</th>
<th>VALLEY CO.</th>
<th>MONTANA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aggravated Assault</td>
<td>417.9</td>
<td>56.5</td>
<td>51.6</td>
<td>--</td>
</tr>
<tr>
<td>Robbery</td>
<td>0.0</td>
<td>0.0</td>
<td>7.4</td>
<td>--</td>
</tr>
<tr>
<td>Burglary</td>
<td>317.0</td>
<td>376.9</td>
<td>176.8</td>
<td>--</td>
</tr>
<tr>
<td>Grand Theft</td>
<td>100.9</td>
<td>546.6</td>
<td>272.6</td>
<td>--</td>
</tr>
<tr>
<td>Rape</td>
<td>28.8</td>
<td>18.8</td>
<td>7.4</td>
<td>--</td>
</tr>
<tr>
<td>Homicide</td>
<td>0.0</td>
<td>18.8</td>
<td>7.4</td>
<td>--</td>
</tr>
<tr>
<td>Auto Theft</td>
<td>57.6</td>
<td>150.8</td>
<td>44.2</td>
<td>--</td>
</tr>
<tr>
<td><strong>TOTAL CRIME RATE</strong></td>
<td><strong>922.2</strong></td>
<td><strong>1168.4</strong></td>
<td><strong>567.4</strong></td>
<td><strong>2114.1</strong></td>
</tr>
</tbody>
</table>


**Note:** Represents only those offenses known to police. Crime rates by type of crime were not presented for the State.
highest total crime rate (1168.4) followed by Blaine County (922.2) and finally Valley County (567.4).

As expected, the most populous counties in the State had the highest crime rates. For example, Yellowstone County, with the largest population in the State, had the highest crime rate (6834). Thus, the predominantly rural counties in the intensive study area appeared to be significantly safer places to live compared to the State as a whole and particularly the urbanized counties. This assumes that the crime rates accurately reflect the situation and are not the result of lower reporting rates in the rural counties.

EDUCATION

The education received by a population is an important indicator of community characteristics and values. This section examines two components of education. First, student/teacher ratios are presented as a rough measure of the quality of education. While many other factors are involved in providing a quality education, the ratio of students to teachers is indicative of the opportunity for students to receive individual attention. A second component of education being examined is the median number of school years completed, which is presented as an approximate measure of a population's level of educational attainment.

Table 12 presents student/teacher ratios, on a county and state basis, for the 1974-1975 school year. The overall State ratio of 20.1 students per teacher exceeded that in each of the three counties in the intensive study area. Blaine County had the lowest student/teacher ratio of 14.1, followed by Valley County with 17.5 and Phillips County with 18.3. It would appear that, in terms of contact between teachers and pupils, the students in the above mentioned counties were fairly well off.
**TABLE 12**

**EDUCATIONAL CHARACTERISTICS: 1974-1975 and 1970**

<table>
<thead>
<tr>
<th>COUNTY</th>
<th>1974 - 1975</th>
<th>1970</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No. of Students</td>
<td>No. of Teachers</td>
</tr>
<tr>
<td>Blaine</td>
<td>1,848</td>
<td>131</td>
</tr>
<tr>
<td>Phillips</td>
<td>1,394</td>
<td>76</td>
</tr>
<tr>
<td>Valley</td>
<td>3,437</td>
<td>197</td>
</tr>
<tr>
<td>Montana</td>
<td>180,553</td>
<td>8,994</td>
</tr>
</tbody>
</table>


**Note:** Figures for median number of years of school completed represent all persons 25 years of age and over.
compared to the State as a whole. It should be noted, however, that other factors may be important here. The positive student/teacher ratios in these rural counties are likely due, in part, to schools that are relatively small in size. Such schools may lack teaching expertise in some subjects as well as lacking many facilities that larger schools may have.

Table 12 further presents the median number of school years completed, based on census data for 1970. The median for each of the three counties was slightly less than the median for the State. The figures represent persons 25 years of age and over. Blaine County had the lowest median of 11.8 years of school completed compared with 12.3 for the State.

The uniformly low median number of school years completed in the intensive study area, as compared to the State, was most likely related to the rural/agricultural nature of the three counties. Jobs in such areas often require less educational background than the more specialized urban labor markets. Students in rural areas, particularly males, typically leave school at a relatively early age to join the labor force, while females tend to marry at an early age. Ethnic composition may also be a factor as suggested in Blaine, Roosevelt, and Glacier counties, which have the largest Indian populations as well as the lowest median number of school years completed (Roosevelt 11.6 and Glacier 12.0) in the overall EIS area.

HEALTH CARE

The provision of health care services is one of a community's basic goals and most important priorities. However, adequate medical care may not be available to certain segments of a population, particularly residents of rural areas. This section focuses on the availability of medical care as an important indicator of social well-being.
Table 13 presents two indicators of the availability of medical care, the number of persons per physician and the number of persons per hospital bed. These data are presented on a county and state basis, as of January, 1973.

The number of persons per physician for the State was 843. Each of the counties in the intensive study area had a substantially larger ratio. Phillips County had by far the highest figure with 2,693 persons per physician, which was more than three times the number for the State. The corresponding figure for Valley County was 1,629 followed by 1,121 for Blaine County. Using the State as a benchmark, the availability of physicians would appear to have been a problem for many residents in the counties mentioned above, particularly Phillips County.

Both Phillips and Valley counties had fewer persons per hospital bed, 180 and 169 respectively, than the State, with 196 persons per bed. There were no hospitals in Blaine County. It is assumed that residents requiring hospital care traveled to Malta, in Phillips County, or to Havre in neighboring Hill County. Many rural residents in the intensive study area live long distances from the nearest hospital. In the event of the need for immediate hospital care, the time required to transport a patient becomes an obvious problem, particularly in the winter when road conditions may be poor.

HOUSING

Adequate housing and suitable living conditions are vital to the well-being of any society. This section addresses the adequacy of housing in terms of structural quality and the suitability of living conditions in terms of overcrowding.
TABLE 13

AVAILABILITY OF MEDICAL CARE: 1973

<table>
<thead>
<tr>
<th>COUNTY</th>
<th>NO. OF PERSONS PER PHYSICIAN</th>
<th>NO. OF PERSONS PER HOSPITAL BED</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blaine</td>
<td>1,121</td>
<td>(No Hospital)</td>
</tr>
<tr>
<td>Phillips</td>
<td>2,693</td>
<td>180</td>
</tr>
<tr>
<td>Valley</td>
<td>1,639</td>
<td>169</td>
</tr>
<tr>
<td>Montana</td>
<td>843</td>
<td>196</td>
</tr>
</tbody>
</table>

Structural Quality

The structural condition and quality of housing may be roughly estimated by looking at the age of the structures in question. It is assumed that, in general, older houses have fewer conveniences and are more likely to be in a deteriorated condition, unless regular repairs have been made.\(^22\)

Table 14 shows the percentage of housing units by the decade of construction, as of 1970. The reader is cautioned that this is 1970 data and does not reflect new construction and improvements made over the decade of the 1970's. In each of the three counties in the intensive study area, the largest percentage of houses were constructed prior to 1940, which represents the oldest category of houses. The figures for Blaine (66.4 percent) and Phillips (66.1 percent) counties were high in relation to the State (49.8 percent). Apparently, relatively little new construction occurred in the more recent decades because there was little or no population growth. The percentage of houses constructed prior to 1940 was lower for Valley County (40.9 percent) than for the State. This appears to have been the result of the large amount of new construction that occurred during the first part of the decade, when the newly constructed Glasgow Air Force Base was being fully activated.

In addition to the age of the structures, the quality or adequacy of housing is commonly determined by the presence or lack of complete plumbing facilities. The Department of Housing and Urban Development defines as inadequate any housing unit which lacks one or more of the following plumbing facilities: (1) hot piped water, (2) a flush toilet for the use of the household only, or (3) a bathtub or shower for the use of the household only.\(^23\)
### TABLE 14

**DECADE OF HOUSING CONSTRUCTION: 1970**  
(Data Based on Sample)

<table>
<thead>
<tr>
<th>COUNTY</th>
<th>TOTAL NO. HOUSING UNITS</th>
<th>DECADE OF CONSTRUCTION (Percent of Total)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blaine</td>
<td>2,305</td>
<td>66.4</td>
</tr>
<tr>
<td>Phillips</td>
<td>2,066</td>
<td>66.1</td>
</tr>
<tr>
<td>Valley</td>
<td>5,193</td>
<td>40.9</td>
</tr>
<tr>
<td>Montana</td>
<td>240,304</td>
<td>49.8</td>
</tr>
</tbody>
</table>


**Note:** Figures do not include seasonally occupied units.
Table 15 shows the number of housing units lacking some or all plumbing facilities and the percentage of total houses lacking, as of 1970. Both Blaine and Phillips counties had significantly higher percentages of their housing stocks lacking complete plumbing facilities than did the State. The figure for Valley County, 9.7 percent, was much closer to the State figure of 8.8 percent. Valley County thus appeared to have the highest quality housing stock in the intensive study area.

Overcrowding

While overcrowding is not an indicator of housing quality in a structural sense, it is a useful indicator of the suitability of living conditions. In this section, overcrowding was determined using the Bureau of Census' definition of 1.01 or more persons per room as an overcrowded housing unit.

Table 16 shows the number of occupied housing units that were classified as overcrowded and shows it as a percentage of the total number of occupied houses, by county and state, as of 1970. All three counties in the intensive study area had a higher percentage of overcrowded units than did the State. Specifically, the largest percentage of overcrowded housing units occurred in Blaine County (16.1 percent), followed by Phillips (11.7 percent) and Valley (10.6 percent) counties. This compared with a figure of 9.6 percent for the State. Glacier and Roosevelt counties (in the broader EIS area), both with large Indian populations, also had notably high percentages of overcrowded houses (Glacier 20.7 and Roosevelt 12.3), pointing to ethnicity as a factor. Thus, in terms of both structural quality and overcrowding in the intensive study area, Blaine County had the poorest conditions and Valley County had the best.
TABLE 15
HOUSING UNITS LACKING COMPLETE PLUMBING FACILITIES: 1970
(Data Based on Sample)

<table>
<thead>
<tr>
<th>COUNTY</th>
<th>TOTAL NUMBER HOUSING UNITS</th>
<th>HOUSING UNITS LACKING COMPLETE PLUMBING FACILITIES</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number</td>
<td>Number</td>
</tr>
<tr>
<td>Blaine</td>
<td>2,305</td>
<td>564</td>
</tr>
<tr>
<td>Phillips</td>
<td>2,066</td>
<td>372</td>
</tr>
<tr>
<td>Valley</td>
<td>5,193</td>
<td>513</td>
</tr>
<tr>
<td>Montana</td>
<td>240,304</td>
<td>21,746</td>
</tr>
</tbody>
</table>


Note: Figures do not include seasonally occupied units.
## TABLE 16
OVERCROWDED HOUSING UNITS: 1970
(Data Based on Sample)

<table>
<thead>
<tr>
<th>COUNTY</th>
<th>TOTAL NO. OCCUPIED HOUSING UNITS</th>
<th>NO. OVERCROWDED HOUSING UNITS</th>
<th>% OVERCROWDED HOUSING UNITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blaine</td>
<td>1,956</td>
<td>315</td>
<td>16.1</td>
</tr>
<tr>
<td>Phillips</td>
<td>1,722</td>
<td>202</td>
<td>11.7</td>
</tr>
<tr>
<td>Valley</td>
<td>3,485</td>
<td>369</td>
<td>10.6</td>
</tr>
<tr>
<td>Montana</td>
<td>217,304</td>
<td>20,777</td>
<td>9.6</td>
</tr>
</tbody>
</table>


Ibid., cited by Jay Schimke, Socio-Economic Profile, p. 7-2. Derived.

**Note:** Figures do not include seasonally occupied units or units vacant year-round.
CHAPTER VI
REGIONAL SUMMARY

In the previous four chapters, significant characteristics and trends in Blaine, Phillips, and Valley counties were identified and assessed. As evidenced therein, the three-county intensive study area was remarkably homogeneous in many respects. The purpose of this final chapter is to look at the three counties from a broader perspective, as a region, presenting a regional summary of salient social features.

POPULATION

The intensive study area, as a region, was characterized by a high level of out-migration and subsequent population decline during the decade of the 1960's. This downward trend was reversed during the 1970's, with the rate of out-migration having stabilized and the population having increased slightly. As of 1977, the region had a total population of 25,000, which was 3.3 percent of the State total. The region was further characterized by a large number of Indian residents. In fact, almost 20 percent of Montana's Indian population resided in the region (as of 1970). In terms of age, the region had a larger proportion of its population in the youth (under 20 years) and old-age (over 64 years) categories than did the State (again as of 1970).

The majority of the region's population had rural residences (1970). The city of Glasgow, in the eastern part of the region, stood out as the only urban community in the intensive study area and the
second largest city on the High-Line. Its counterpart, the city of Havre, is located immediately to the west of the region and is the largest city on the High-Line. Both Glasgow and Havre serve the region as centers of trade and service, as well as cultural activity. The overall population density of the region, as recently as 1977, was only 1.7 persons per square mile. This helps to bring into focus the truly rural nature of the region and the relative isolation of many of its residents.

EMPLOYMENT AND INCOME

The outstanding characteristic of the intensive study area, in terms of employment and income, was its dependence on agriculture. The single largest occupation in the region was farming/ranching (1970). Certainly, numerous other jobs depended on this clientele. Since farming/ranching was one of the lowest paying occupations in the State, it is not surprising that the per capita personal income for the region was substantially less than the State level. It should be noted, however, that persons owning farms and ranches have substantial capitalized assets.

Following a Statewide trend, the unemployment rate for the region increased from 4.3 percent in 1970 to 7.4 percent in 1977.

LAND STATUS

Grazing was overwhelmingly the largest land use in the intensive study area, with rangeland accounting for 63.8 percent of the total land area (1974). A significantly large proportion of this rangeland was administered by the Bureau of Land Management and leased to ranchers, primarily for cattle production. Cropland was also an important land use, with wheat the principal crop.
Notably, there was a trend toward the consolidation of agricultural land as the farms and ranches in the region grew smaller in number and larger in size (1964-1974). This change may have occurred through the creation of family partnerships and corporations or through the absorption of small/marginal operations by larger farms and ranches.

CRIME, EDUCATION, HEALTH, AND HOUSING

One of the most striking features of the intensive study area was its remarkably low crime rate, which was substantially below the rate for the State (1974). Consequently, in terms of public and personal safety, the region appeared to have had a highly desirable living environment. Education was another bright spot, with the region displaying a favorable student/teacher ratio compared to the State (1974-1975).

While the indicators for crime and education were quite favorable, those for health and housing were less encouraging. The availability of medical care appeared to have been a problem because of a scarcity of physicians (1973), with the time and distance required to transport a patient to a hospital increasing the problem. As far as housing conditions in the region were concerned, the most notable characteristic was the relatively large number of units lacking complete plumbing facilities (1970).

CONCLUSION

The information presented in this paper is intended to serve as a base-source for social impact analysis in the Prairie Pothole EIS. As a reference document, it is designed primarily to serve the needs of the BLM, but may also be useful to various other organizations and private citizens interested in natural resource management in the Prairie Pothole
area. In addition, it is hoped that this paper will serve as a model for future social impact analyses in other areas. As both a reference and a model, this paper will serve its most important function by identifying problems and clarifying issues relative to natural resource planning and environmental impact assessment in the Prairie Pothole area.
FOOTNOTES


5 Bogue, Principles of Demography, pp. 154-155.

6 Ibid.


9 Ibid., cited by Abt Associates, Socioeconomic Profiles, p. 23.


23. Abt Associates, Socioeconomic Profiles, p. 82.
24 Ibid., p. 83.

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