THE CULTURAL LANDSCAPE OF RURAL ISABELLA COUNTY: VARIATION IN TIME AND SPACE

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ABSTRACT

THE CULTURAL LANDSCAPE OF RURAL ISABELLA COUNTY:
VARIATION IN TIME AND SPACE

By

F. DeWayne Kyser

The study proceeds from the premise that human or cultural geography consists of the investigation of activities whereby man uses the land to provide his needs and that the cultural landscape resulting from these activities is the tangible expression of the reciprocal impact of man and environment. As such it is the product of two interacting variables: man's cultural background and the character of the land. The cultural landscape is therefore infinitely diverse in both its spatial extent and its existence through time.

The purpose of the study is to examine the interrelationship of landscape, culture, and land. It is hypothesized that even in microcosm, a cultural landscape will show change through time as culture changes, and diversity through space as the character of the land changes. The study focuses on Central Michigan with Isabella County as a sample area.

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Components of the landscape are divided into two categories: (1) spatially extensive elements which do not involve shelter (agricultural land, nonagricultural land, and public function features), and (2) elements which provide shelter for some human activity and which are conspicuous features of the landscape though occupying little space (farmsteads, nonfarm houses, public and commercial structures).

The landscape of the past, with regard to both time change and spatial diversity, is reconstructed from general works on the history of the area, unpublished correspondence and dissertations, newspapers, periodical articles, and interview. Time change up to the turn of the century is found to be largely a matter of converting wilderness to civilization as settlers of European cultural background replaced the Indian, and as local isolation broke down. Since that point, time change has occurred in response to developing culture. The advance of industrialization, commercialization, and exchange to the point where at present, the individual no longer supplies his needs from the land he occupies but instead has become integrated into a world-wide man-land system has greatly affected the local way of life, and this phenomenon has come to be expressed in landscape. It is also found that a very considerable degree of spatial diversity existed at any given time in the past and that this was largely related to heterogeneity of land.

Because the present landscape is observable in detail, categorization of its components is carried further. Agricultural and nonagricultural lands are classified according to intensity of occurrence in an attempt to present their landscape roles as clearly as possible. Farmsteads are subcategorized in order to describe the very considerable changes in form and function occasioned by recent cultural evolution. Nonfarm houses are classified and mapped according to age to show the pattern of development. Public and commercial structures are treated in a similar manner.

Reconstruction and observation support the hypothesis. Changes in the cultural landscape through time are found to be considerable, continuing, and directly related either to cultural replacement or to cultural evolution. Spatial diversity of the cultural landscape is established for any given moment of time and is found in general to be closely related to diversity of the land, a situation which arises as differing lands serve different purposes, and as activities common to diverse lands are accomplished in different ways, and meet with differing degrees of success.

THE CULTURAL LANDSCAPE OF RURAL ISABELLA COUNTY: VARIATION IN TIME AND SPACE

By

F. DeWayne Kyser

A THESIS

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1968

To the memory of my daughter, Anne Kay Kyser

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CHAPTER I

INTRODUCTION

Human or cultural geography is the study of the activities whereby man uses the land, directly or indirectly, to provide his needs and wants. In the process of using the land, man changes the surface of the earth through the alteration of natural features and the addition of certain forms of his own, thus producing a man-modified segment of earth's surface called a cultural landscape.

From the standpoint of geography, culture includes all of man's behavior which is learned rather than instinctive: his physical works, his concepts, his technology, his social structure. Any portion of the earth's surface which bears the imprint of man's activity may be properly called a cultural landscape in opposition to a segment of earth space, often called a natural landscape, which does not bear the imprint of man and which is now rare in inhabited parts of the earth.

The cultural landscape is the tangible and often visible evidence of the reciprocal impact of man and environment, an impact which becomes increasingly significant with the multiplication of human numbers and the mechanical

amplification of human strength. The observation and interpretation of the cultural landscape thus becomes one of the means by which the interrelationship between man and the earth may be studied.

The cultural landscape varies infinitely over the earth for it is the product of the interaction of two ever changing elements: man's cultural background and the character of the land. The total learned experience of a group of people equips them to perceive, at a given instant of time, certain possibilities for the use of a segment of land, and they must choose from these. Another group of people with a different body of knowledge will perceive different possibilities for the use of a similar segment of land. Two quite different cultural landscapes may result, even though the natural landscapes may have been very nearly alike. Cultural landscape variation over the earth is further complicated, especially on a local basis, by the fact that it occurs not only with man's differing perception of like lands, but also with each major shift in the character of the land itself, because with each such change, man perceives a distinctive roster of use possibilities. Diversity of the cultural landscape through space thus becomes great indeed, arising as it does both from the character of the land and from man's culturally conditioned perception of that character, so that given similar land, the cultural landscape varies with culture and given similar culture, the landscape varies with land.

The cultural landscape also changes through time, and it does so largely as a result of modification in man's perception of possibilities, which may come about either through successive occupation of the land by groups with different cultural backgrounds or through the developing culture of a single occupying group. In the latter case, change may be very slow. However, if certain innovations suddenly alter the list of recognized possibilities, change may be very rapid. Cultural landscape change through time may be also due to changing character of the land through time. Most of such change results from man's use of the land. Natural change over much of the surface of the earth has been very slow relative to the span of man's occupance.

It should be noted that the cultural landscape as the term is used here denotes more than the visible landscape, including factors both man-made and natural, such as climate or land survey system, which may not be directly visible to an observer. Also, it may extend spatially beyond the vision of an observer, encompassing all salient phenomena of a designated area of whatever size, and is thus, in varying degrees, a generalization derived from examination of many locations.

Investigation of landscape is commonly used by cultural geographers to help establish man-land relationships in ancient, remote, or primitive cultures. This approach has been used less often, directly and consciously, in the

study of man-land relationships in areas of the modern world. Perhaps one reason for this is that less need is felt to investigate physical evidence of processes that may be observed here and now. Another reason is expressed by Max. Sorre, who says of the application of the concept of "genre de vie," or culture systems, to the study of geography in the modern world:

> We have tried to demonstrate that if its meaning [genre de vie] is adjusted to fit the general evolution of our societies, then the geographer can apply the concept with profit in an explanatory description of the modern world. Genres de vie are dissolving under our eyes. Others are organizing, expanding and being imposed on men. It is enough to recognize the latter forms, but sometimes we hesitate. Is this because we are in the midst of the current and cannot distinguish its banks?[1]

This dissertation attempts to further the notion that study of the interrelationship of a cultural landscape, the culture system with which it is associated, and the character of the land where it is located is one logical approach to the understanding of a segment of the modern western world.

The basic working hypothesis of the study is that reconstruction and observation will show certain notable changes occurring within the cultural landscape through time

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[1]Max. Sorre, "La notion de genre de vie et sa valeur actuelle," Annales de Geographie, LVII (1948), 97-108, 193-204, translated and reprinted in Philip L. Wagner and Marvin W. Mikesell (eds. and trans.), Readings in Cultural Geography (Chicago: University of Chicago Press, 1962), pp. 397-415, p. 415.

as a result of changing culture, and that at a given moment of time, there has existed a conspicuous spatial diversity of the cultural landscape which is related to the heterogeneous character of the land. It is the opinion of the writer that change in the cultural landscape both through time and through space within even small areas is more apparent and is perhaps more revealing with regard to the relationship of man and land than has been commonly appreciated. The study which follows was originally suggested by evident spatial diversity within the present central Michigan rural landscape and by rapid changes now apparently in progress there in which new types of agricultural installations are appearing, old ones are being converted or abandoned, residential use of the land is taking on new character, and public function features such as highways and public utilities show strong modification.

In a study such as this, a choice must be made whether to observe a large area in general or a small area in detail. The latter course is taken here, and the portion of Central Michigan chosen, is Isabella County. A county has the obvious advantage of the availability of certain data, and Isabella County is also a good arbitrary spatial sample of Central Michigan. It is centrally located and may be viewed as physically representative in that it contains some portion of most of the chief landform and soil divisions of the lower Peninsula of Michigan, and as a result has some

of all its classes of agricultural land from the best to the poorest. It is crossed by one limited access freeway and touched upon by another, giving excellent access to urban areas to the east and south while being far enough away from these to be well beyond any immediate urban fringe. The area was settled throughout (with one minor exception) by a fairly heterogenous group of Americans and Europeans which has led to the development of a landscape in the main uncomplicated by enclaves of people with strongly differing cultural backgrounds. These factors make Isabella County an interesting area in which to observe the relationship between an evolving culture and the development of a cultural landscape. Another and perhaps not the least significant reason for its choice is that the writer has personally observed and participated in this landscape evolution over a considerable period.

The scope of the study is limited topically as well as spatially. Only the rural landscape will be considered, and of this, mainly those most salient features which comprise its major content, the farmsteads, the agricultural land, the nonagricultural wooded and idle lands, the nonfarm residences, and those features having a public service function.

It is hoped that the study will be meaningful in that it exposes to close scrutiny a segment of rural landscape which though small may be fairly typical of many

similarly situated areas in the northeastern United States. Landscape study, while not usually an end in itself, is one of the means of investigation of the man-land relationship. By it, certain factors may be objectively studied, such as agricultural or other land use patterns, general spatial organization, density of occupance by certain phenomena, or the types of forms which serve given functions for the occupying cultural group, thereby facilitating the identification of the activities which characterize the man-land relationship existing at any given location. By it, also, certain essentially subjective opinions are formulated concerning factors of the general efficiency of human occupance such as progressiveness, stagnation, or retrogression in land use; constructiveness or destructiveness of operations; orderliness or slovenliness in forms and processes; and impressions are created concerning general aspect of area, may it be pleasant, monotonous, prosperous, poverty stricken, stimulating, or depressing. Landscape study is an essential part of geography whether the underlying purpose may be planning, prediction, or satisfaction of academic curiosity.

CHAPTER II

THE LAND

The spatial diversity that is evident in the character of the land plays a double role in the diversity of total landscape apparent in the study area, being directly involved in the natural setting and indirectly in the cultural features, man having chosen to make differing use of differing lands. It is also involved in the alteration of landscape through time, man having made varying sequences of land use choices in different types of land, thereby giving rise to different sequences of forms. Therefore, the study includes the ensuing discussion of terrain and of land types, categorized in the manner believed most relevant from the standpoint of man's perception of use possibilities and hence to a consideration of the diversity of the rural landscape through space and to the alteration of this landscape through time.

Terrain and Land Type

The study area falls easily into three general terrain divisions. Along the eastern side is a relatively low, flat plain, once a portion of the bed of the western

edge of Glacial Lake Saginaw. The elevation of much of this section is just above 700 feet, and there is a gentle slope to the eastward. Through the central portion, lying mostly at elevations of 800 to 900 feet, is a sector dominated by undulating plains but interrupted by both flat and hilly areas. In the northwest and west is a higher section, with elevations ranging mainly from 950 to 1150 feet, which is predominately rough, but which does encompass some flat or undulating lands.

The situation with regard to land type is much more complicated. For the purposes of this study, land type may be defined as the complex of slope, soil, and drainage conditions existing at a given location. On this basis, the lands of Isabella County have been divided into the seven major types appearing on Figure 1.[1] A discussion of each follows.

Flat, Clay and Silt Loam Plains

Two major land types are for the most part associated with the lake bed plains on the east. One of these consists of flat, clay and silt loam plains of which there may be seen to be two large areas, one in the southeast and the other

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[1]Follows with modification the system of major land types of Michigan, presented by J. O. Veatch in Soils and Lands of Michigan (East Lansing: The Michigan State College Press, 1953), pp. 11-24.

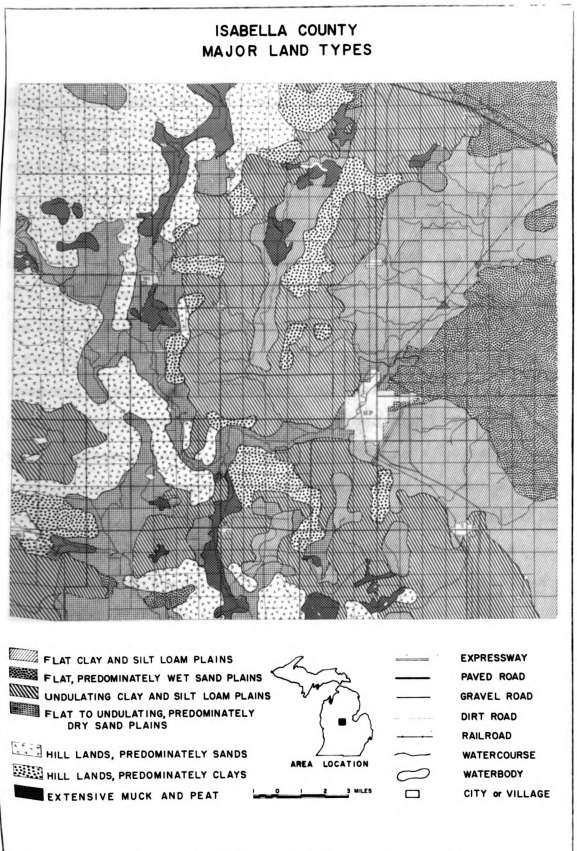
ISABELLA COUNTY
MAJOR LAND TYPES
FLAT CLAY AND SILT LOAM PLAINS
FLAT, PREDOMINATELY WET SAND PLAINS
UNDULATING CLAY AND SILT LOAM PLAINS
FLAT TO UNDULATING, PREDOMINATELY DRY SAND PLAINS
HILL LANDS, PREDOMINATELY SANDS
HILL LANDS, PREDOMINATELY CLAYS
EXTENSIVE MUCK AND PEAT
AREA LOCATION
0 1 2 3 MILES
EXPRESSWAY
PAVED ROAD
GRAVEL ROAD
DIRT ROAD
RAILROAD
WATERCOURSE
WATERBODY
CITY or VILLAGE

Figure 1

toward the northeast. The eastern portion of this type is more nearly level than the western, having been longer submerged, and here the water-modified till surface is usually overlain by a thin veneer of silt and sometimes muck with a variable admixture of sand. The resulting soils are mostly very dark gray silt loams, usually friable, and very slightly acid to alkaline in reaction. The soils of the slightly more undulating western segment contain a higher proportion of clays. Generally the surface is stone free. These soils are the County's most productive, agriculturally, though in a few spots enough sand is present to lower the productivity somewhat below the average for this land type.

The relatively flat surface and the fine texture of both surface material and substratum cause slow natural drainage and wet surface conditions. However, an eastward slope of four or five feet to a mile and moderate incision of the streams facilitate artificial drainage. The slightly undulating character of the western portions complicates artificial drainage to some extent.

Several smaller areas of this land type occur in the County west of the bed of Glacial Lake Saginaw, some of these apparently also resulting from ponded waters. For convenience, this land type will be referred to as "silt lake plain."

This poorly drained heavy land was densely forested by a lowland association consisting in the main of elm, ash,

swamp oak, beech, maples, linden, and aspens.[1] These species are still represented in the remaining woodlots, though the proportion of elm and beech has recently diminished considerably.

Flat, Predominately Wet Sand Plains

The other major land type which is associated very largely with the eastern lake plain is the flat, predominately wet sand plains. For convenience this type will be called "sand lake plain." It may also be seen to exist in two major areas, one of which is the central east and the other in the extreme northeast of the County. Some portions of the sand lake plain are indeed flat though in others low wind and wave built forms may be present. The surface here, though quite variable, is typically gray or yellowish fine sand, highly acid, and most often of very low agricultural productivity. As the name suggests, these sands are neither all wet nor all dry, though in much of this type high water table conditions do prevail. The poor drainage is due to flat surface, impervious clay substratum, or sometimes to a thoroughly cemented reddish brown hardpan (ortstein) layer which is likely to be present at depths of 10 to 30 inches.

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[1] "United States Field Notes, Northern and Western Michigan," Vol. XLVIII, pp. 188-225; Vol. XLIX, pp. 165-222; Vol. L, pp. 123-247; Vol. LI, pp. 242-294. Information concerning vegetation prior to settlement derived largely from survey notes appearing in the above source, and from notations on original survey plats.

This layer impedes movement of water between the soil water zone and the water table tending to produce wet surface conditions most of the year but sometimes contributing to very dry surface conditions during periods of summer drought. Genetically, this type as it occurs in the lake plain is assumed to consist of deltaic sand deposits over water modified till plain. These deposits vary in thickness from a few inches to many feet.

The forest of this sandy portion of the lake plain was largely white pine, hemlock, birch, ash, beech, and maples. Much of the area is now under a replacement oak-aspen forest, largely of low value apparently because marginal growth conditions further susceptibility to disease.

Undulating Clay and Silt Loam Plains

An extensive land type, especially in the central terrain division of the County, is the undulating clay and silt loam plains. The surface material is glacial till on which has developed a variety of clay and silt loams, mostly dark gray, slightly acid, quite thin (six to ten inches), but fairly productive agriculturally. The till is a heterogeneous mixture of very fine material, sand, pebbles, and boulders. Some portions are much sandier or much stonier than others, and there is in some instances a considerable concentration of large boulders (weighing several hundred pounds) at or near the surface. Much of the surface has

gentle slope, in the magnitude of three to six degrees, although in some cases it is more strongly rolling and may merge so imperceptably with the clayey hills (to be discussed later) as to make boundary determination difficult. Soil erosion is often a problem to some degree. Poorly drained depressions are numerous, and much of the surface drains slowly because of low slope and low water transmissibility of the material. A few sharply rising gravel hills (kames) or ridges (eskers) occur. Genetically, this land type is predominately till plain (ground moraine), and for convenience will be usually referred to as "till plain."

This land type was heavily wooded. The forest consisted of an upland combination of hardwoods, often termed the beech-maple association, in which beech and sugar maple were the leading species, with elm, ash, linden, cottonwood, cherry, ironwood, white pine, and others also present. These species are still to be found in the remaining woodlots, though numbers of beech and elm are declining.

Flat to Undulating, Predominately Dry Sand Plains

The flat to undulating, predominately dry sand plains reach their greatest extent in the western one-third of the County. Genetically, this appears to be either sandy till plain, which is slightly rolling, or glacial outwash, which is fairly flat but with depressions, supposed to be ice pits. The latter makes up about three-fourths of the

total area. In the main the surface is dry because of rapid drainage, and this type will be termed for convenience, "dry sand plain." This is not to say, however, that there are no low lying poorly drained areas. The surface materials vary from coarse sterile sand to sandy loams which are fertile enough for at least marginal production of staple agricultural crops.

Characteristically, the surface of the flat, dry sand plain is stone free, as a result of water deposition of the material. However, boulders are common in the undulating dry sand plain, as they are in the undulating clay plain, both seemingly being composed of unsorted material deposited directly by ice. In some parts of the undulating dry sand plain, the profusion of boulders is such that stone fences appear.

Pines were a significant element of the forest in the dry sand plains, as some remaining pine stump fences bear witness. Oaks and most species of the beech-maple association were also present. The replacement forest is primarily oak-aspen, though usually it also contains a few representatives of most of the species found in the beech-maple association.

Hill Lands, Predominately Sands

Hill lands are extensive in the County, especially on the western side. They are usually related genetically to glacial end moraines. Two well recognized end moraines, the Gladwin and the West Branch, produced by the Saginaw Lobe of the Wisconsin ice sheet cross the County somewhat discontinuously in a north-south direction.[1] In a few instances, the hill lands are dissected valley slopes.

Characteristically, the hill lands are decidedly rolling, with many slopes in excess of 12 degrees. Most, though not all, of these lands are relatively high, though the local relief is most often no more than 50 or 60 feet. The general aspect is that of a confused mass of mounds, ridges, and depressions.

Of the two types of hill lands shown in Figure 1, those whose surface is predominately sand, for convenience called "sand hills," are much the more extensive, occupying about three and one-half times the area of the hill lands whose surface is predominately clay loams. The soils of the sand hills vary from infertile coarse yellow sand to fine gray loamy sand of moderate fertility. All are acid. Small areas of gravel or clay are sometimes present. The sand

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[1] Helen M. Martin, Map of the Surface Formations of the Southern Peninsula of Michigan, Publication 49, Department of Conservation, Geological Survey Division, 1955.

absorbs rainfall so readily that erosion has in general not been a major problem even though slopes are steep and vegetation sometimes sparce. The depressions are normally dry, and there are few streams and no lakes. Some portions are fairly stony. Erratics weighing several hundred pounds are common, and a few are much larger.

Not all the area included as sand hills on Figure 1 is strongly rolling. The hills are interspersed with small areas of more subdued relief, which are nevertheless included in this division because, like the hills, they are most often sandy, dry, and rather infertile, with vegetation and land use quite like that of the surrounding rougher lands, and their segregation would thus produce unwarranted fragmentation.

The forest of the sand hills contained a high proportion of white and Norway pine, usually mixed with hemlock, beech, and maples, and sometimes ash, elm, oak, and aspen. A replacement forest, now an increasingly significant feature of the landscape, is predominately oak-aspen with some species of the beech-maple association also present.

Hill Lands, Predominately Clay Loams

In the case of those hill lands in which the surface is predominately clay loams, rainfall penetrates the soil much less readily than in the case of the sand hills, and erosion is a major problem where the vegetative cover is

disturbed. The clay loam soils being moderately fertile, these lands have often been cultivated despite the steep slopes, with the result that many crests and slopes have lost most or all the top soil exposing the parent till. Here depressions often are not dry and lakes and streams are common.

The forest of the clayey hills was a beech-maple association quite similar to that found in the till plain. These species still dominate the remaining woodlands.

Extensive Muck and Peat

Muck and peat, sometimes of considerable depth though usually of small extent, occur in undrained depressions at a multitude of well scattered locations everywhere in the study area outside the lake plain. The stage of vegetative fill varies from complete, to a boggy border about a lake or pond. Only a few areas are extensive enough to constitute the major land type shown on Figure 1. The most significant of these occur where relatively large expanses of shallow stagnant water existed in what are apparently old glacial spillways. This material is found in a wide range of development from strongly acid, poorly decomposed peat to nearly neutral, thoroughly decomposed muck. Comparatively little soil of this type has been used for agriculture.

Most of the muck and peat area was forested, supporting a variable mixture of cedar, hemlock, tamarack, spruce,

elm, red maple, ash, swamp oak, linden, and aspens, in which either the conifers or broadleaved species might predominate. Some white pines were present, especially near the borders.[1] These areas have been cut over, but in most of them the forest was allowed to return. The original species are still represented, though the pines are now scarce, and the hemlock and tamarack seem to have diminished in numbers. A small proportion of the muck and peat lands supports sedges usually mixed with tree growth.

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[1] J. A. Kerr and F. W. Trull, Soil Survey of Isabella County, Michigan, U. S. Department of Agriculture, Bureau of Chemistry and Soils, in cooperation with the Michigan Agricultural Experiment Station, Number 36, Series 1923 (Washington, D.C.: Government Printing Office, 1928).

CHAPTER III

THE EARLY DEVELOPMENT PERIOD

The Michigan territorial government, in the process of dividing the northern part of the state into political divisions, on March 2, 1831, defined and named Isabella County. Surveyors coming into the area in 1832 found it an almost unbroken expanse of forest, a wooded wilderness apparently at that time entirely devoid of human habitation.[1] This essentially primeval landscape was, however, by no means completely without the imprint of man.

The Prehistoric Aboriginal Occupance

The Saginaw Lowland, of which the eastern edge of the County forms the western extremity, seems once to have

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[1] Isaac A. Fancher, Past and Present of Isabella County (Indianapolis: B. F. Brown and Co., 1911), p. 83. Also, "United States Field Notes, Northern and Western Michigan," Vol. XLVIII, pp. 188-225; Vol. XLIX, pp. 105-222; Vol. L, pp. 123-244; Vol. LI, pp. 242-294. The first source states that at the time the county was organized, it was completely forested and entirely uninhabited. The second, which consists of surveyors field notes in manuscript form, available at the Michigan Department of Conservation, Lands Division, is negative evidence of the truth of the statement, in that there is no mention of other than forested lands or any sign of human habitation, at the time of the original survey.

supported Michigan's densest aboriginal population. Nearly 30 percent of all the Indians of Michigan (who are estimated to have totaled no more than 15,000)[1] frequented that territory which is now contained by the counties of Bay, Saginaw, Genesee, Shiawassee, and Tuscola.[2] Not only was this comparatively large population noted by the first Europeans to enter the region, but 120 old village sites have been discovered in Saginaw County alone, prior to 1931.[3]

It would seem, then, that the Saginaw Lowland must have possessed attributes attractive to the Michigan Indian. Prior to the coming of the European, he provided his food by hunting, gathering, and rudimentary agriculture; for shelter he used the bark of large trees or the skins of animals; for clothing he used the skins of animals; his favorite mode of transportation was the canoe, and the streams and lakes were his highways. The Saginaw Lowland was an area of fertile soils, dense hardwood forests harboring a relatively high population of useful plants and animals, and tranquil streams

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[1]Michigan Writer's Program, W.P.A., "Archaeology and Indians," Michigan a Guide to the Wolverine State, reprinted in Charles M. Davis' Readings in the Geography of Michigan (Ann Arbor: Ann Arbor Publishers, 1964), p. 129. Also W. B. Hinsdale, Primitive Man in Michigan (Ann Arbor: University of Michigan Press, 1925), p. 65.

[2]W. B. Hinsdale, Distribution of the Original Population of Michigan (Ann Arbor: University of Michigan Press, 1932), p. 30.

[3]Hinsdale, Distribution of the Original Population of Michigan, p. 30.

abounding in fish, shell fish, and often beavers, muskrats, and other semiaquatic animals. This area thus provided the resources whose use the aborigines best understood and was therefore capable of supporting a denser population than, for instance, the sandy pinelands to the west and north, whose comparatively sterile soils and resinous vegetation provided little food for either animals or man, and little in the way of materials useful to the Indian, other than fibrous tree roots for binding and resins for sealing.

The most optimistic estimate of possible maximum density of aboriginal population in Michigan, even in the most favorable areas of the Saginaw Lowland, is approximately 65 people per 36 square miles (one township).[1] This is about one-tenth the population density in the least densely settled townships of Isabella County today, and archaeological investigation has found no sign that anything approaching this density ever actually obtained here. Isabella County seems to have been peripheral to the Saginaw Lowland with regard to aboriginal population as well as area.

Absence of the Indian at Time of Survey and Early White Settlement

The lack of any aboriginal occupation of the Isabella County area at the time of the original survey is probably at least partially the result of the white man's

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[1] Hinsdale, Primitive Man in Michigan, p. 66.

influence having preceeded his physical presence there. Fur trading got underway in Michigan with the establishment of a French trading post at Sault Ste. Marie perhaps as early as 1616.[1] The Michigan Indian seems soon to have discovered that the trading of pelts for the white man's goods was an easier way to live than that which he had previously known. In the aboriginal economy, the function of the Saginaw Lowland then changed from Michigan's most favorable subsistence area to one of its highest producing commercial areas.

Increasing appetite of the Indian for trade goods and increasing ability, through their possession, to take fur bearing animals, eventually led to the near extinction of the fur bearing population by the early years of the nineteenth century, and hence to the destruction of the Indian's principal means of livelihood. In addition, treaties between 1807 and 1836 extinguished Indian claims to all of the lower peninsula of Michigan except for reservations. Many Michigan Indians either voluntarily migrated westward or were transferred by the United States to western lands, and the aboriginal population of the Saginaw Lowland seems to have diminished drastically.[2] In the 1830's, when

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[1]Ida Amanda Johnson, The Michigan Fur Trade (Lansing: Michigan Historical Commission, 1919), p. 15.

[2]Fred Dustin, "The Treaty of Saginaw, 1819," Michigan History Magazine, IV (1920), 248.

the survey crews first came to Isabella County, most of the remaining Indians of the area seem to have been on reservations in the eastern part of the Saginaw Lowland.

Traces and Possible Distribution of the Aboriginal Occupance

Sparce occupance by a people with a primitive culture oriented almost wholly toward use of the natural environment as it existed rather than toward any major modification of it, could be expected to leave a minimum imprint upon the face of the land, and this seems indeed to be the case in Isabella County, but minor though they were, known landscape modifications by this culture did exist. Inasmuch as no archaeological research was undertaken until after much of the land had been cultivated for a considerable time, many traces of the aboriginal culture no doubt disappeared without record.[1] Recorded forms are mainly trails, mounds, village sites, pits, and burial grounds. Of these only the trails and mounds were normally fairly conspicuous. Other modifications, either now obliterated or unrecognized, probably existed, such as clearings for the planting of corn, beans, squash, or pumpkins;[2] killing of trees by stripping of bark; dispersal of certain plants; or the disruption of

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[1] Davis, p. 131.

[2] W. B. Hinsdale, The First People of Michigan (Ann Arbor: George Wehr, 1930), p. 143.

animal distribution patterns. There is also the possibility of the existence of modifications whose nature is thus far unsuspected.

Hinsdale[1] shows two trails crossing the area, one coming in from the east paralleling the Chippewa River and joining, near the present site of Mt. Pleasant, another which crossed the County diagonally from southeast to northwest. The same source shows five village sites and several burial mounds and burying grounds, more than half of which are concentrated in the southeast along the streams and in the area of upland hardwood forest. It is not difficult to point out a few factors which could have influenced a preference on the part of the aborigine for the type of habitat found in the southeast.

Crude plantations could have flourished in tracts of fertile, adequately drained soil which make up part of the till plain portion of the area. Beavers, prized for both meat and pelt, as well as muskrats seem to have been plentiful here. The sugar maple, much prized for the making of maple sugar, was abundant, and of course other useful species generally found in the upland hardwood forest, such as beech, cherry, ironwood, hickory, and birch were present. There were even a few pine trees to provide resins. To be sure, areas similarly endowed are to be found other than in

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[1]W. B. Hinsdale, Archaeological Atlas of Michigan (Ann Arbor: University of Michigan Press, 1931), p. 23.

the southeast, in the zone extending through the central part of the County where the till plain land type predominates. Why the southeast section was preferred over these, if indeed it was, seems less readily hypothesized. Regardless of the answer to this question, however, the evidence of archaeological discovery, for whatever it may be worth, does seem to point to discrimination between land types on the part of the aborigine in the area and frequent choice of the till plain land type as his occupance site.

Composition of the Developing Landscape

Thus while prehistoric man is known to have made use of certain of the area's resources, his modification of the natural landscape, so far recognized, was minimal. The European, on the other hand, entering the area in the middle of the nineteenth century in far greater numbers, and possessing a culture embracing the knowledge and means of more intensive and sophisticated resource use, soon wrought drastic and extensive alterations.

For the purposes of this study, only those elements of the landscape which comprise its major content are considered, with little attention being given to the unique or the strictly localized, which can generally be of little broad significance. The rural landscape is regarded as consisting of two primary categories of elements. One comprises that portion of the general land complex which

occupies the vast proportion of the land area and which does not involve structures whose function is the provision of shelter for a human activity. This category is designated "Category I," and is viewed as being divisible into three subcategories. The first of these consists of those elements which serve a public function (Category I,A), chiefly transportation lines, public utilities, and public drainage facilities. The second embraces land put to use through tillage processes including rotation pasture and meadow (Category I,B) and is identified as "agricultural land." The third is composed of lands which have neither an agricultural nor a specific public service function (Category I,C) and is termed "nonagricultural land." Within this latter division fall the forested lands, partially cleared lands, marsh lands, and completely cleared but untilled lands.

The second primary category, designated as "Category II," embraces those landscape components which involve structures that provide shelter for an activity, e.g., residence, animal husbandry, or industry, and which are prominent features of the landscape though occupying relatively little land area. This category is comprised by farmsteads and nonfarm residences, along with public, commercial, and industrial buildings. This basic approach to landscape classification is followed throughout the study. However, in dealing with the present landscape, which has been

observed and mapped in some detail, subcategorization is carried further.

Early Settlers

Although Isabella County was occupied in its early history by both Caucasians and Indians, the first white settlers, contrary to the usual situation, found an uninhabited land and thus preceeded the forebears of the present Indian population into the area. The first white settlement occurred in 1854, with the arrival of several families into the southeast corner of the County in what is now Coe Township (Figure 2).[1] Indians started to come in after the establishment of a reservation in 1855.[2]

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[1]Fancher, p. 100. (This source is quoted several times, and it should perhaps be explained that Isaac Fancher was a native of New York State, who came to Mt. Pleasant, Isabella County, Michigan on July 4, 1863, as a practicing lawyer. He was also a surveyor, served several years as State Road Commissioner, was elected a State Representative in 1873, and a State Senator in 1875. He once owned The Northern Pioneer, the first newspaper in the County. He once served as County Prosecuting Attorney and as Postmaster for Mt. Pleasant. In 1870, he was Census Commissioner for Isabella and Clare Counties. He was involved in the building of the Saginaw and Mt. Pleasant Railroad, which was the first railroad to reach Mt. Pleasant, and also in the building of the Toledo, Ann Arbor, and Northern which reached Mt. Pleasant later. He owned the first water power site in Mt. Pleasant, later a steam saw mill, and at one time, as many as 169 lots. Probably no other citizen was involved in such a broad cross section of the County's early development.)

[2]Fancher, p. 61. (The treaties of 1855 and 1866 are quoted in this source in their entirety, and the specific information used in this paper regarding their content is taken from it.)

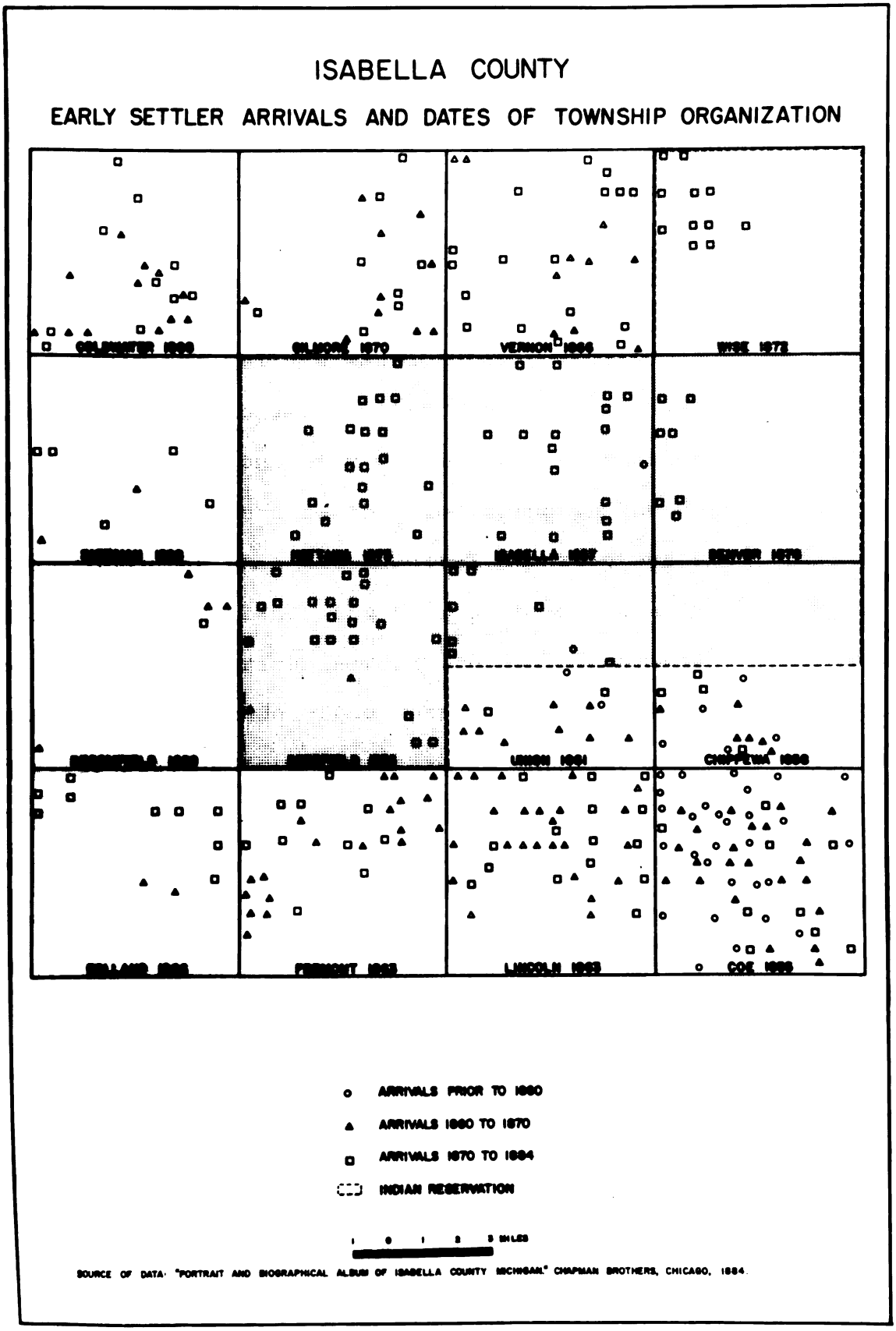
ISABELLA COUNTY
EARLY SETTLER ARRIVALS AND DATES OF TOWNSHIP ORGANIZATION
VERNON 1866
ARRIVALS PRIOR TO 1860
ARRIVALS 1860 TO 1870
ARRIVALS 1870 TO 1884
INDIAN RESERVATION
SOURCE OF DATA: "PORTRAIT AND BIOGRAPHICAL ALBUM OF ISABELLA COUNTY MICHIGAN" CHAPMAN BROTHERS, CHICAGO, 1884.

Figure 2

Pioneer Character of the Area

To peoples of European origin, the entire area was in 1854 a complete wilderness, seemingly untouched by the hand of man, with the exception of the placement of survey markers, and the first to come were indeed pioneers in what seemed a vast, essentially trackless, primeval forest. However, American culture was generally well advanced at this time, and the pioneer character of the area was the result of local isolation. The middle of the nineteenth century was a fairly late date for pioneering in the United States. Even though at this time central Michigan was still very much a frontier land, the United States was already coming of age. The American Revolution was eighty years past, and the country extended from coast to coast. Rails reached the Pacific Coast before they came to Isabella County. Western type exchange economy based on commercial agriculture and factory industry was developing rapidly. Some manufactured goods were now being exported to Europe, and Ralph H. Brown, speaking of the period of 1850 to 1880, says:

> In short, American manufactures were highly varied, reflecting inventiveness, enterprise, capital funds, cheap labor, abundance of raw materials, an insatiable public demand, and ease of transportation.[1]

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[1] Ralph H. Brown, Historical Geography of the United States (New York: Harcourt, Brace and Co., 1947), p. 355.

Machinery and animal power had already replaced much hand labor in agricultural processes, a factor which facilitated the expansion of agriculture in Isabella County in comparison to some areas entered earlier. Considering the fact that a rapidly developing exchange economy had become an integral part of American culture by the middle of the nineteenth century,[1] those who came to settle on the land must surely have anticipated that, with the clearing of the land and the establishment of adequate transport connections with outside markets, the initial subsistence enterprise would soon give way to farming of a more commercial nature.

Most of the common amenities which existed anywhere in the western world were not at any great distance in 1854. Comfortable houses, well stocked stores where personal or household needs could be purchased ready made,[2] frequent mail, schools, churches, doctors, and all season transportation by rail or highway were all to be found at Saginaw or St. Johns. The staples such as clothing, hand tools, and provisions could be purchased at Maple Rapids.

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[1]Assumed from examination of such sources as the following: Ralph H. Brown, Historical Geography of the United States (New York: Harcourt, Brace and Co., 1947); George N. Fuller, Michigan, A Centennial History of the State and Its Peoples (Chicago: Lewis Publishing Co., 1939), I; Bella Hubbard, Memorials of a Half Century (New York and London: G. P. Putman's Sons, 1887); Willis F. Dunbar, Michigan: A History of the Wolverine State (Grand Rapids: William B. Erdmans Co., 1965); and Michigan newspapers of the period.

[2]Indicated by examination of newspaper advertising in St. Johns and Saginaw newspapers of the period.

Depending upon location within the County, these centers were only forty or fifty miles away. However, five or six days were required to make the round trip to St. Johns by ox team,[1] when the trail was passable, which was by no means always the case. Saginaw at first could apparently be reached only by canoe.[2] That the provision situation was difficult is evidenced by the fact that between 1854 and 1860, Gratiot County which adjoins Isabella County on the south and which was thus closer to sources of supply, received the epithet, "starvation Gratiot."[3]

Thus, at this period, the contrasts between developed and undeveloped sections of the country were great, and once settlement was underway, rapid and extensive change in a pioneer fringe territory like Isabella County was to be expected. Pioneering in the settlement sense consists of the occupation of an area in which there is little or no material cultural development and the bringing of the level of development of the new land to an approximation of that of the settler's homeland or perhaps to that of an adjacent earlier settled region. The changes which were made in the

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[1]Fancher, p. 91.

[2]Portrait and Biographical Album of Isabella County, Michigan (Chicago: Chapman Brothers, 1884), pp. 451, 560.

[3]George J. Miller, "Some Geographical Influences in the Settlement of Michigan and the Distribution of Its Population," Bulletin of the American Geographical Society, XLV, No. 5 (1913), 334.

landscape of Isabella County during the last half of the nineteenth century were largely of this nature.

The European Approach to Exploitation of the Area

The great majority of Caucasians who came to Isabella County as settlers, came to practice agriculture, being attracted by availability and low price of land. In the census of 1880, the total population of Isabella County is given as 12,159 and that of Mt. Pleasant, the only central place of appreciable size, as 1,115, indicating rural residence for most of the people of the county. Examination of microfilm copies of original manuscript census reports for 1860, 1870, and 1880 shows that, with minor exceptions, these rural people were farmers.[1] Most of those not listed as farmers were also connected with agriculture, being for the most part, laborers employed on farms. There was also a scattering of innkeepers, blacksmiths, clergymen, teachers, storekeepers, mill operators, and carpenters who no doubt mostly served the farmers and sometimes evidently were part time farmers themselves.[2] The only notable exception to

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[1] Indicated by examination of biographies published in the "Album" cited previously, and also by examination of microfilm copies of original manuscript census reports which gave occupations. For example, the 1870 census shows in Lincoln Township, part of the early settled southeastern area with a population of 672, only two heads of households who were not farmers.

[2] "Album," p. 228.

agricultural involvement to be found in the census reports were several groups of laborers living at inns or boarding houses, who, judging from date and location were probably working on state roads or railroads.

Not long after the first farmers arrived, the lumbermen appeared on the scene. Few lumbermen appear as such in the above cited reports, and they seem to have contributed relatively little to the population. Many men who worked at the lumber camps were itinerants and others were farmers who took occasional winter employment as loggers.

Lumbering got under way in Isabella County in about 1860.[1] Pine of commercial quantity and quality existed in perhaps as much as one-half of the area.[2] Fancher, discussing forestry in the county, makes the statement that the total estimated commercial cut of all timber (largely pine) prior to 1910 would, at the 1910 price of fifteen dollars per thousand board feet, have had a value approximately twice that of all land and improvements in the county in 1910.[3] Even though the numbers of people who came into the

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[1]Fancher, p. 269.

[2]Rolland H. Maybee, "Michigan's White Pine Era, 1840-1900," a John M. Munson Michigan Historical Fund Publication (Lansing: Michigan Historical Commission, 1960), p. 12; and J. O. Veatch, map entitled, Presettlement Forest in Michigan (East Lansing: Department of Resource Development, Michigan State University, 1959), United States Field Notes, Northern and Western Michigan.

[3]Fancher, p. 265.

area to exploit the pine were not large nor was the operation of comparatively long duration, there were several significant ramifications which will be discussed later.

Origins of the Early White Settlers

The Caucasians who came to Isabella County during the first quarter century of settlement seem to have been without exception of Western European origin.[1] Most, however, came not directly from Europe but from the Eastern States and Canada, with New York being the heaviest contributor, especially prior to 1870. For example, the census of 1860 lists a total of 124 heads of families for the County, and of these, thirty were born in Western Europe, sixty in New York, and the rest in Pennsylvania, Ohio, Michigan, or the New England States. A somewhat similar pattern emerges in the eight townships which appear in the census for the first time in 1870. Lincoln Township, which of this group had the largest rural population and for which 151 heads of families were listed, shows twenty-two born in Western Europe, seventy-seven in New York, nineteen in Ohio,

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[1]The original manuscript census reports for 1860, 1870, and 1880 list places of birth for each individual, and for 1860 and 1870, also the birth place of both parents. All those who were not born in Anglo-America, were born in the British Isles, France, the German States, or the Scandinavian Countries. Names, and birth places of parents, where given, indicate Western European ancestry for those born in Anglo-America.

and the rest in Michigan and eastern states other than New York. Ohio and New York continue to rank as heavy contributors to those townships which appear in the census reports for the first time in 1880 (the last township was organized in 1876), but Michigan and Canada now rank with, or sometimes ahead of them.

These white settlers, being all of Western European background, came with a similar cultural heritage. In the main, they distributed themselves about the area without noticeable concentrations by national origin, and so, for the most part, the County took on an aspect of cultural homogeneity. The one exception worthy of note was that a group of people of Germanic origin and Catholic faith settled in Nottawa Township (Figure 2). While the first census of Nottawa Township indicates German birth for only thirteen heads of families, biographical sketches[1] and interview[2]

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[1] "Album."

[2] Interviews, November 1967, with Peter Schafer and Elizabeth Schafer of Beal City, Michigan and Pauline Boge of Mt. Pleasant, Michigan, who were born in Nottawa Township during the early period indicate that a number of the pioneer settlers came from the German settlement of Westphalia in Clinton County, and that ties with that community were maintained during the childhood of the informants. News of the establishment of the nucleus of a new German Catholic community seems to have traveled far, and instances were cited by the informants of German Catholic settlers who came to Nottawa Township from Canada and the Upper Peninsula of Michigan.

establishes German parentage for many whose birth place is listed as Michigan or Canada. Today, Beal City, a village near the center of the Township, has a large Catholic church and school, and the people of the village and vicinity are often locally referred to as "Beal City Germans" or "Beal City Dutchmen." The names on the 1964 plat of Nottawa Township are predominately German. Minor landscape peculiarities possibly traceable to this slight variation from the general cultural pattern of the county will be noted later.

The early white settlers coming into Isabella County seem, for the most part, to have had some conception of the wilderness environment they would face and of the labors they must perform before the level of cultural development of the new area could be brought to an approximation of that which they were leaving. They must have been proficient at wielding an axe and handling an ox team, for there is no indication in the accounts of early life in the area or in the early newspapers that many became discouraged and moved back to the "civilization" which existed just a few miles to the south, and there is every indication that settlement and removal of the forest proceeded rapidly. As one instance of the expansion of settlement, Lincoln Township in the southeast, whose population was entirely agricultural, seems to have had no more than half a dozen families by 1860, but it appears in the 1870 census with a population of 672, and in the 1880 census with 1,237. Biographical sketches of early

residents[1] indicate previous farm experience for nearly all who settled on the land as well as previous pioneering experience for some.

Bella Hubbard,[2] writing of the period 1835-1837, says that immigration into Michigan then consisted mostly of people of means from the older states looking for cheaper lands, and explains that many were speculators only, who had neither intention of, nor competence for, braving the wilderness themselves. However, while it is true that when attention turned to Isabella County some two decades later, there were those who engaged in land speculation from afar, and while it is also true that most of those who took up land in the area were from the older states, nevertheless a great many who came were young people[3] of very limited means.[4] They sought cheap unimproved land on which to establish homes and improve their economic status by increasing the value of the land through improvement, essentially a process

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[1] "Album."

[2] Bella Hubbard, Memorials of a Half Century (New York and London: G. P. Putman's Sons, 1887), p. 94.

[3] Ages are given in the manuscript census reports of 1860, 1870, and 1880.

[4] Established through personal property value estimates given in the early manuscript census reports, biographical sketches in the "Album," and interview with senior citizens who remember the economic situation of their pioneer parents and grandparents, whether at first hand or word of mouth.

of substituting labor, which they could furnish, for the capital which they did not possess.

Alienation of the Land

With respect to Caucasian acquisition of Michigan lands, George N. Fuller says:

> The first step toward orderly occupation of the Northwest Territory was the extinguishment of the Indian titles to the land. After that came survey of the land, opening of land offices for its sale, and establishment of civil government by organization of counties and townships.[1]

The extinguishment of Indian claims to all lands of the Lower Peninsula except for certain reservations was completed by the Washington Treaty of 1836. The major portion of the Isabella County area passed to the United States under this treaty, with, however, a strip along the eastern side having been previously ceded in the treaty of Saginaw in 1819.[2] The original survey of Isabella County lands was completed by 1838. Five northern townships were resurveyed in 1847 and 1851,[3] but the original work seems to have been reasonably good, and few changes were made. The land was

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[1]George N. Fuller, Michigan, a Centennial History of the State and Its People (Chicago: Lewis Publishing Co., 1939), Vol. I, p. 141.

[2]Willis F. Dunbar, Michigan: A History of the Wolverine State (Grand Rapids: William B. Erdmans Publishing Co., 1965), p. 44.

[3]"United States Field Notes."

surveyed according to the township and section system established by the Ordinance of 1785. This rectangular survey has had a profound effect on the development of the landscape, being expressed in the pattern of roads, settlement, property lines, and fields.

The first land was purchased in the County in 1851.[1] At this time, public lands could be purchased for one dollar and twenty-five cents per acre in plots as small as forty acres. In 1854, the Graduation Act was passed putting public lands on sale at prices ranging from one dollar down to twelve and one-half cents per acre. Some of the first land to be settled in the County was purchased under this act for fifty cents per acre.[2] Land sales in Isabella County ran far ahead of settlement during the decade, 1850-1860,[3] with lumber companies and speculators accounting for the majority of alienated but unsettled land. Prospective settlers seem to have occupied their lands as soon as possible after purchase. In 1862, the Graduation Act was repealed and the Homestead Act passed whereby a settler could obtain land by paying only a nominal registration fee and "proving up" his

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[1] Fancher, p. 99.

[2] J. E. Day, "Sketch of the Settlement and Growth of Isabella County," Michigan Pioneer and Historical Collections, XXVII, 324; and Fancher, p. 99.

[3] Dallas Lee Jones, "The Survey and Sale of Public Land in Michigan" (microfilmed Master's dissertation, Cornell University, 1952), p. 103.

claim, which he did by living on the land for five years and cultivating some part of it. Much land passed from public to private ownership in the County under the provisions of this Act, especially outside the earliest settled areas in the southeast.[1] The public domain disappeared rapidly, and transfers between individuals were common by the middle 1850's. For the most part, the settlers, as apart from the speculators or pine land buyers, seem to have sought only land on which to establish family farms, though some did engage in speculation of a sort. A few made nominal improvements on a parcel of land, sold it at a profit to later comers and moved on to newer, cheaper land. Some bought or homesteaded more land than they could hope to bring into agricultural production, later selling a portion at a price high enough perhaps to very nearly cover the cost of the entire purchase.

Pioneer Occupance of the Hardwood Forest Lands

The first white settlers, approaching the area from Saginaw or St. Johns, entered the southeastern part of the County and encountered either the silt lake plain land type, densely forested by the lowland hardwood association mentioned in Chapter II, or the till plain land type, almost as

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[1]Established by interview with several informants and biographical sketches in the "Album."

densely forested by the upland beech-maple association. They chose first the till plain lands.[1] No doubt this was partially because previous experience had indicated that soils supporting the beech-maple forests were productive, and also because portions of the till plain were naturally fairly well drained while the lake plain in contrast was mostly wet, and drainage on any very considerable scale was difficult or impossible for the individual pioneer farmer, equipped as he was in the beginning with nothing more than a shovel and his own muscle power. The pioneer white settler thus seems to have chosen the same land type, i.e., the till plain, preferred by his prehistoric predecessors, but his choice stemmed from the agricultural potential of the land rather than the subsistence potential of the forest.

Access to these early settled lands consisted of crude trails cut through the forest, winding to avoid, wherever possible, the swamps or steepest slopes. Trees were cut low enough for high wheeled wagons to pass over the stumps, and logs were laid across the trails to prevent bogging down in the wettest spots. The earliest "roads" were often first established by the settlers themselves endeavoring to reach their lands with families and goods. However,

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[1]Fancher, pp. 99-102; Atlas of Isabella County, Michigan (Philadelphia: C. O. Titus Co., 1879); and biographical sketches appearing in the "Album."

as soon as settlement proceeded far enough to provide a labor supply and permit political organization, roads were established along the section lines and improved as rapidly as circumstances would allow. Figure 3[1] shows the well settled areas of 1879 with a fairly complete network of section-line roads. Also, quarterline roads were not uncommon, having been established either because of a physical obstruction such as a lake along the sectionline or because farmsteads had been built along the quarterline rather than the sectionline because of real or fancied site advantage. These early roads along the rectangular survey lines were local projects constructed under the auspices of county or township governments, usually the latter.

The first state road to reach the County was the Alma and Clinton State Road, running north-south across the east side of the County through Mt. Pleasant, improving somewhat the southward connections. An announcement for the letting of contracts for this road appeared in the June 7, 1865

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[1]Three settlement maps have been prepared for Isabella County for the years 1879, 1899, and 1915 from information taken from plat books of the County published on those dates. Sources are as follows: Atlas of Isabella County, Michigan (Philadelphia: C. O. Titus Co., 1879); Plat Book of Isabella County, Michigan (Minneapolis: C. M. Foote Co., 1899); and Atlas and Farm Directory of Isabella County, Michigan (Chicago: Standard Map Co., 1915). In the above sources, symbols for structures not otherwise designated represent farmsteads and are so indicated on the settlement maps. However, judging from circumstances, a few represent residence other than farmhouses and are shown as nonfarm. Some doubtful cases are shown as unknown.

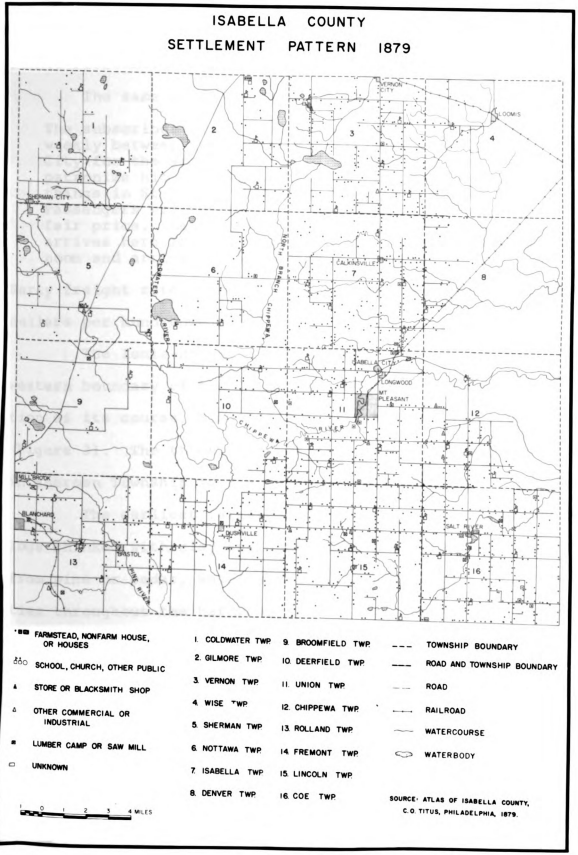
ISABELLA COUNTY
SETTLEMENT PATTERN 1879
FARMSTEAD, NONFARM HOUSE, OR HOUSES
SCHOOL, CHURCH, OTHER PUBLIC
STORE OR BLACKSMITH SHOP
OTHER COMMERCIAL OR INDUSTRIAL
LUMBER CAMP OR SAW MILL
UNKNOWN
1. COLDWATER TWP.
2. GILMORE TWP.
3. VERNON TWP.
4. WISE TWP.
5. SHERMAN TWP.
6. NOTTAWA TWP.
7. ISABELLA TWP.
8. DENVER TWP.
9. BROOMFIELD TWP.
10. DEERFIELD TWP.
11. UNION TWP.
12. CHIPPEWA TWP.
13. ROLLAND TWP.
14. FREMONT TWP.
15. LINCOLN TWP.
16. COE TWP.
TOWNSHIP BOUNDARY
ROAD AND TOWNSHIP BOUNDARY
ROAD
RAILROAD
WATERCOURSE
WATERBODY
0 1 2 3 4 MILES
SOURCE: ATLAS OF ISABELLA COUNTY, C.O. TITUS, PHILADELPHIA, 1879.
VERNON CITY
LOOMIS
SHERMAN CITY
CALKINSVILLE
ISABELLA CITY
LONGWOOD
MT. PLEASANT
CHIPPEWA
SLEEPY
BLANCHARD
WINFIELD
BASTOL
SALT RIVER

Figure 3

issue of The Northern Pioneer, a weekly newspaper published at Mt. Pleasant.

The same issue carries the following advertisement:

> The subscriber will continue to run his Express Wagon weekly between St. Johns, Mt. Pleasant, and Isabella City for the accommodation of all who feel inclined to patronize him. He will attend to the purchasing of things in St. Johns for those who wish to have him. Passengers will be taken to and from St. Johns at a fair price. Leaves St. Johns on Tuesday morning and arrives here Thursday noon. Leaves here Thursday afternoon and arrives in St. Johns on Saturday.

Early freight rates from St. Johns to Mt. Pleasant were three dollars per hundredweight.[1]

The Ionia-Houghton Lake State Road reached the western boundary of the County in 1869[2] and ran for a portion of its course, diagonally across the northwest corner (Figure 3). The three miles of diagonal road still present in Sherman Township is a segment of this road.

The earliest farmstead buildings were constructed of logs chinked with clay and usually roofed with shakes split from pine or cedar, which was available in limited quantities throughout the hardwood forest area. Livestock shelters were sometimes pole structures covered with straw or brush. When enough cereals could be grown to produce a straw stack, cattle were sometimes allowed to run to these

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[1] Fancher, p. 98.

[2] Keith M. Decker, "Early Pioneer Homesteads in Central Michigan," Papers of the Michigan Academy of Science, Arts, and Letters, XLIV, 321.

in winter with little else in the way of feed or shelter. However, saw mills soon appeared in the area (the first in 1856 or 1857),[1] and in the relatively productive lands of the southeast, frame structures soon became prevalent. Indeed, many farmsteads established after the first sawmills went into operation, originally consisted of frame buildings.[2] Some structures still in use, especially houses, are basically the originals, although somewhat modified.

The prevalent frame house of the early days was the multiple segment "tee" or "cross" floor plan type, always at least partially two story, shown in Figure 4. Another common though less prevalent house was the square, hip roofed, two story type, often with a single story wing, shown in Figure 5. The two story construction was conservative of building time and material, and in the days before central heating, heat rising from the first floor living area mitigated to some extent the winter temperature situation in the unheated sleeping rooms above. Balloon framing further simplified construction.[3] Both types are very common in the

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[1]Fancher, p. 102; and "Album," p. 256.

[2]For the purpose of this paper, the term "farmstead" refers only to the building complex consisting of the farmer's residence and those structures involved in the farming operation along with the immediately associated grounds.

[3]In this type of framing, the upright members ran all the way from the ground floor sills to the second story plates with second story floor joints attached to the upright members, instead of resting on the first story plates as is the usual practice today.

Figure 4. (right) Early house type ("T" plan).

Figure 5. (left) Early house type (square plan).

Figure 6. (right) Early barn type.

rural midwest. The farmer was often his own builder and neither of these types required any great skill or imagination to construct. Close examination of surviving units often shows considerable lack of finesse. These are still the leading farmhouse types in the County, even though probably none have been built since World War I and few since 1900.

The early frame barns were "A" roofed, timber frame structures usually without basements, similar to that shown in Figure 6. These were normally sturdy structures and some survive. However, many have been replaced, if not because of deterioration, then because of lack of capacity or adaptability to later enterprises. Prior to the exhaustion of the pine about 1890, most building materials were of local derivation, and even today small amounts of construction lumber are obtained from local woodlots, though the great majority has long been imported.

Water for domestic use is a prime consideration in settlement. Many early settlers chose land where water was available from springs, streams, or lakes. Most, however, obtained their supply from open wells from which water was dipped by a variety of arrangements. Fortunately in the till plain or lake plain, a water bearing inclusion of gravel is usually to be found at depths of less than thirty feet.

The hardwood forest, which the aborigines seem to have prized as their most productive environment, was regarded by the white settler mainly as a nuisance to be removed as quickly as possible. In the meantime, however, he did make certain uses of it. He hunted woodland game animals, fished the lakes and streams, gathered nuts, fruits, and certain plants of the forest floor such as leeks and wild turnips, and made maple sugar. The latter was both a significant subsistence product and a commercial item. In the beginning it was often his only source of sweetening and sometimes, before he had managed to clear much land, virtually his only salable product.

The forest as he felled it, served for building, fencing, and fuel materials. Sometimes it had a slight commercial value through use of the ashes remaining from the wood burned in the clearing process to produce potash. (Some of the huge iron kettles used for potash boiling are still to be found in the area.)

Clearing the land for agriculture was a two stage operation. First a plot was "chopped." This consisted of felling and removing standing timber, usually by windrowing and burning, as hardwood timber had no commercial value before the pine ran out. The settler then tilled the soil as best he could among the stumps to plant a crop. If he already had some cleared cropland, he might pasture the plot for a few years (blue grass rapidly took over the

untilled clearings). After a period of five years or so, the hardwood stumps decayed to the point where they could be removed, and the plot was then "stumped." It was now fully cleared, except perhaps for boulders, and was now ready for normal cultivation. In some cases standing timber was girdled, and crops planted among the dead trees, with removal of the entire tree taking place later. Felling coupled with later removal of the stumps was much the more usual procedure.[1] Thus throughout the early periods, most farms consisted of partially or completely cleared agricultural land and two types of nonagricultural land, i.e., land cleared of trees but not of stumps, most often in hay or pasture, and land still in forest.

Small fields of five to ten acres became the rule in the hardwood forest area, as clearing was a slow laborious process, and it was usually not possible to bring larger plots into production in any given season. Usually the clearing of plots even as small as this was possible only by the assistance of neighbors. This required reciprocity, which meant that there were years when the settler may have cleared little of his own land. Fields were usually square in order to conform to the rectangular survey and to facilitate fencing.

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[1]Clearing process established by interview with senior citizens who witnessed some of it.

The rate of clearing was often slowed by need for cash by the new settler who could not obtain it from his forested acres during his first few years on the land and so was obliged to seek work elsewhere. It was most often to be found in the pine logging operations. Work in the lumber camps paid twenty-six to thirty dollars per month.[1] The time involved in clearing no doubt influenced the size of the holding and thus the number of farmsteads in the hardwood forest area. The majority of settlers seem to have hesitated to buy large farms, even though, with unimproved land being very cheap, some may have had the means, because of the necessity of paying the property tax for a considerable period on unproductive land. If the settler borrowed money to buy, he faced the double problem of paying for, and paying tax on, unproductive land.

Fencing in the early days was accomplished by splitting logs, usually oak, into rails and laying them up one atop another in a zigzag pattern in such a manner that they were self supporting. Later, rails were often laid in a straight line supported at the juncture by double posts. The extent of agricultural land in the beginning being very much smaller than that of nonagricultural land, the usual

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[1]Irene Hargreaves and Harold M. Foehl, The Story of Logging the White Pine in the Saginaw Valley (Bay City: The Red Keg Press, 1964), p. 36.

procedure was to fence livestock out of the crops and otherwise to allow them the run of the area regardless of property lines. Thus in the early days of settlement, livestock generally roamed not only the public domain but also private nonagricultural lands irrespective of ownership.

Drainage was of universal concern in the southeast. Even though the earliest settlers chose land, some portions of which were reasonably well drained naturally, virtually every farm in the till plain land type of the southeast nevertheless had drainage problems. Also, the silt lake plain segment of the southeast seems almost immediately to have been perceived as potentially good agricultural land once drainage could be accomplished, and settlement advanced here as rapidly as possible. The major portion of this land type existing in Coe and Chippewa Townships was fairly well settled by 1879 (Figure 3). Correct assessment of the value of lands in the southeast may have been aided by the astute judgment of the original surveyor who in his report termed the till plain land, "class two," and the wet silt plain outside the actual swamps, "class one"[1] (though this land appears flat to the casual observer, it is gently undulating).

By the time settlement started in Isabella County, drain tiles were in use in earlier settled areas of the state, but there being no local tile manufacturing plants,

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[1]"United States Field Notes," XLVIII, p. 91, and XLIX, p. 92.

transportation rates being prohibitive, and capital being in short supply, early drainage in the county was mainly by open ditch. The earliest drains were trenches dug by hand meandering along a course of least resistance, but once the land was cleared of stumps, horse powered scoops or graders could be used. In the till plain, ditches followed natural depressions to the streams. Drainage of the deeper depressions was often not feasible before the use of tile. In the lake plain, ditches often followed straight courses sometimes along roads or property lines. Drainage was aided here by the process of "furrowing out," whereby open plow furrows ran across the fields to the ditches. This system is still used in the silt lake plain to some extent but has now largely been replaced by tiling.

As is the case today, the larger, longer ditches carrying water from more than one farm were normally public projects, while branch drains on the individual farms were the private business of the owners. Early drainage records are fragmentary. Public drainage was at first the responsibility of the townships, being taken over by the county in 1886. Most township records do not survive. However, one existing drain commission ledger for Coe Township shows public drain construction occurring in 1876. No earlier ledgers seem to be available, though probably public drainage projects were underway somewhat before 1876. County records show several reconstruction and extension projects

during the 1890's in the till plain and silt lake plain areas, probably indicating, at least in the case of reconstruction, the existence of considerably older projects.

As previously indicated, early agricultural enterprises were necessarily partially of a subsistence nature. Potatoes, turnips, and rutabagas all of which yielded well and could be stored in vegetable pits were staple crops,[1] along with corn, wheat, buckwheat, and timothy hay.[2] While all these crops were used by the pioneer for food and livestock feed, any surplus soon came to have local commercial value. In the early days while production remained very limited, a market was provided by the lumber camps, some of which were established in the early 1860's, or by later settlers who had not yet had time to make a crop, and by Mt. Pleasant residents after the middle 1860's. Supplies of agricultural products were small and prices were high. In 1864, wheat is reported to have been selling for three

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[1]Ellen L. Woodworth, a typescript prepared by the Clarke Historical Library, Central Michigan University, Mt. Pleasant, Michigan p. 46. (This source consists of a collection of correspondence between Mrs. Ellen Woodworth and her husband, Samuel Woodworth, serving with a corps of Engineers in the Union Army during the Civil War. The Woodworths came to Lincoln Township, Isabella County, in 1862. Mr. Woodworth enlisted in the fall of 1863. Mrs. Woodworth stayed with her two children in the log cabin on their farm through the winter of 1863-1864, then moved to Mt. Pleasant until Mr. Woodworth returned from the war.

[2]Frequent reference to these crops are found in accounts of pioneer days in the County, e.g., "Album," p. 451; Woodworth, pp. 131, 179; and Decker, p. 320.

dollars per bushel and hay, in at least one instance, for thirty-five dollars per ton.[1] In the spring of 1864, potatoes were one dollar per bushel and butter sold for twenty-five cents per pound.[2] Even turnips had commercial value, and Ellen Woodworth mentions selling fifty bushels at twenty cents per bushel.[3] Maple sugar is reported to have been worth one shilling per pound.[4]

Livestock consisted mainly of cattle and swine, with apparently greater dependence on the latter, which were allowed to roam the forest in autumn and fatten on acorns. Pork and corn ("hog and hominy") constituted the mainstay of pioneer diet. Dairy cattle were a prized possession but difficult to feed through the winter because of the very small hay acreages. Oxen were the usual draft animals of the early days,[5] being cheaper to buy or raise than horses and being better able to survive by browsing leaves from

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[1]Woodworth, p. 131.

[2]Woodworth, p. 65.

[3]Woodworth, p. 38.

[4]Woodworth, p. 70.

[5]Indicated in many sources. Oxen were still more numerous than horses as late as 1870, with the census of 1870 reporting 634 oxen and 568 horses for Isabella County. Source: Compendium of the Ninth Census of the United States (Washington, D.C.: Government Printing Office, 1872), pp. 746, 747.

trees. A team of horses was sometimes worth as much as eighty acres of land.[1]

There is ample evidence that Isabella County pioneer settlers sorely missed the fruits, especially apples, available in the longer settled areas from which they came. Dried apples were on sale locally at twenty-five cents per pound.[2] Turnips were termed "Michigan apples."[3] Pauline Boge of the German settlement in Nottawa Township tells of early settlers going back in autumn to the Westphalia area from whence many had come to obtain a supply of apples for the winter. Westphalia lies more than fifty miles to the south of Nottawa Township. The early local newspapers frequently carried advertising by nurseries in southern Michigan for fruit trees to be delivered to Isabella County residents, sometimes on credit. Orchards were established on almost every farm. These always consisted of several varieties of apple trees and often of plum, peach, and pear trees as well. These orchards represented a considerable modification of the landscape. The agricultural census of

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[1]Woodworth, p. 34. Ellen Woodworth reports that her brother-in-law, Isaac Fancher sold his horses for $190.00. For a time previous to 1854, eighty acres of the unimproved public domain would have cost $100.00. When the Graduation Act (as it applied to much of Isabella County) went into effect, the cost dropped to $40.00.

[2]Woodworth, p. 91.

[3]Woodworth, p. 19.

1904 reports 3,079 acres of apples, and 89,731 trees, with a production of 140,027 bushels, worth $36,212. The plum and peach trees were not long lived but many of the old apple trees and a few pear trees survive, often marking the former site of a pioneer farmstead.

Beginning of the Lumbering Era

As mentioned in Chapter II, white and Norway pine was a significant constituent of the forest in the sand lake plain, the dry sand plain, and the sand hills land type, which together make up more than 40 percent of the total area of the county. In addition, pine trees were scattered through the predominantly hardwood forest on the heavier soils and sometimes existed there in commercial quantities, especially on inclusions of sandier soils. In the beginning, only pine had commercial value and the vast proportion of the total commercial cut made during the lumbering era consisted of pine, though lumbering operations did eventually get around to the cedar, spruce, hemlock, and tamarack (swamp larch) of the lowlands and even to certain hardwoods.

Isolation was not the problem to commercial lumbering that it was to commercial agriculture. Logs could be floated down the streams during the spring high water periods to saw mills in the Saginaw area. In the main, logs were brought to the streams during the winter by use of horse drawn sleighs. However, in 1877, the narrow gauge

railway was successfully introduced as a means of moving logs, in the area immediately to the north of Isabella County,[1] and this innovation, which greatly facilitated the logging of areas distant from the streams and helped to eliminate the disastrous effect of poor sleighing seasons, soon came to Isabella County. The grades of some of these may still be traced through the former pine areas in some cases.

As previously mentioned, pine logging was underway in Isabella County in the early 1860's. It seems not, however, to have gotten into full swing until the 1870's,[2] as was the case with much of the rest of the Lower Peninsula of Michigan.[3] Information concerning the actual spatial progression of lumbering in the County is fragmentary, but there is evidence that several factors were involved.

In the beginning, only pine which would produce the highest quality lumber was worth cutting, so these stands were taken first. Then, of these first quality stands, those closest to the streams, especially the Chippewa, were entered before the more distant ones. Proximity to settlement and hence to local supplies of labor, food, and feed

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[1]Maybee, p. 41.

[2]Maybee, pp. 18-21; and "Album," pp. 321, 333, 336, 346, 395, 489, 556.

[3]George H. Hazleton, "Reminiscences of Seventeen Years Residence in Michigan," Michigan Pioneer and Historical Collections, XXI, p. 411.

was also a consideration, so those superior stands which existed close to both streams and settlements were given priority. The result was that in a very general way it may be said that pine lands close to the agriculturally and commercially active southeast were lumbered off before the more remote areas such as Wise Township in the northeast and Sherman and Broomfield Townships in the west. The spatial progression, however, was by no means clear cut. There was much back tracking as less perfect trees became valuable and as means of moving logs improved. Apparently, much standing timber remained in Chippewa Township in the southeast as well as in the northern and western areas in 1883 or 1884.[1]

The lumbering operation removed a great source of wealth from the area. However, while in the main, the financial harvest was reaped by outside interests, some benefit was derived locally. As previously mentioned, the lumber camps provided outlets for agricultural products which could not otherwise have been marketed before the coming of the railroads, and they gave winter employment to pioneer settlers who sorely needed cash to provide food and clothing, and to meet land payments and tax bills. Local saw mills also provided limited employment, for while most of the cut went down the Pine or Chippewa Rivers to the Saginaw area, some was processed in the County. Settlement was stimulated

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[1]"Album," pp. 545, 550, 553, 556.

to some extent in that a few who came to work in the lumber camps bought land and remained.

The Indian Reservation

Indians constituted yet another element in the early historic occupation of the County. As elsewhere in Anglo-America, the Indians of the Lower Peninsula of Michigan found themselves driven ahead of the advancing line of white occupation with its accompanying private ownership of the land and removal of the forest. There was no longer room for the aborigines to sustain themselves by seminomadic hunting, gathering, and primitive agriculture. They found their numbers being depleted by disease, privation, and removal to western lands, while their area of occupancy constantly shifted and shrank. One such shift resulted from the Treaty of 1855, which established a reservation in Isabella County for the "Chippewas of Saginaw, Swan Creek, and Black River."

These so called Chippewas were a recent amalgamation of Chippewas, Pottawatomies, Wyandottes, Ottawas, and others.[1] The area set aside for these people in Isabella County encompassed all unsold lands in a total of six townships, including all of Wise, Denver, Isabella, Nottawa, Deerfield, and the north half of Union and the north half

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[1] "Album," p. 533. Source: Major James W. Long who served as Indian Agent for the State of Michigan from 1867 to 1871.

of Chippewa Townships (Figure 2). This area was not turned over in its entirety to be held in common, but rather was set up as a reserve from which lands could be selected to be held in severalty. Each family head was allowed eighty acres and each single individual over twenty-one years of age and each orphan child was allowed forty acres. In addition, all lands not selected at the end of five years were to remain government property, subject to Indian entry only and at the same rate as other government lands, which meant that while this provision was in effect, white settlement was barred from an area of nearly 100,000 acres.[1]

The treaty also provided money for the education of the children and for the purchase of tools, agricultural implements, livestock, or other material needs with which to establish themselves in their new location. The United States agreed to maintain a blacksmith shop for a period of ten years and to build a saw and grist mill for Indian use. The blacksmith shop was established, and the mill was constructed at Isabella City, 1857, just north of the subsequent site of Mt. Pleasant (Figure 3). Tribal organization, except for the purpose of implementing the treaty, was dissolved. The Indian agent was required to classify all who selected lands as either "Competent" or "Not so Competent," depending on whether or not the subject's education,

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[1]Fancher, p. 270.

experience, and intelligence was judged sufficient to equip him to cope with the white man's world. The "Competents" were to be issued alienable fee simple patents, but patents issued to the "Not so Competents" could be transferred only by the consent of the Secretary of the Interior.

The Indians were urged to come to the new Reservation, but not forced to do so. Evidently, many did come. The census of 1860 lists the total population of Isabella County at 1,443, with 595 whites and 848 Indians.[1] Most of the land selections and settlements resulting from the Treaty of 1855 occurred in 1856 and 1857.[2] The Indians came by water in dugout canoes, or by land with ponies or on foot. They brought guns, rudimentary tools, and certain household equipment, but no wagons or agricultural implements other than the simplest hand variety.[3]

They did not distribute themselves evenly over the Reservation but concentrated in Isabella, Nottawa, western Denver, and northern Union Townships,[4] in the till plain,

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[1] Compendium of the Tenth Census of the United States, 1880 (Washington, D.C.: Government Printing Office, 1883), pp. 35, 355.

[2] Fancher, p. 80.

[3] Fancher, p. 81.

[4] The manuscript census reports for 1880 shows virtually all of the Indian population of the County in these four townships (Isabella, Denver, Nottawa, and Union), while the Atlas of Isabella County published in 1879 shows very few Indian properties with dwelling symbols lying outside the area described in the text.

silt lake plain, or clay hills land types, all of which for the most part supported hardwood forest, again pointing to the aborigine's seeming preference for this habitat. Some Indians did, however, choose some pine land, or at least land bearing a certain amount of pine, as evidenced by a quote appearing later.

Regarding their mode of occupance, Fancher says:

> They built small wigwams out of birch bark or of logs, covered them with bark to keep out inclement weather and proceeded to make some clearing, cutting down the timber and burning the same.[1]

Concerning the general attitude and character of these people he says:

> . . . Indians who come to Isabella County under the said treaties were greatly above average in their desire to be good sober citizens and that but a small percentage of them were addicted to the use of intoxicating liquors to excess. On the whole they were a very quiet and peaceable class of citizens. . . . They were good workers in the woods, cutting logs, and especially in driving logs down the river in the spring to their destination at Saginaw and Bay City.[2]

Unfortunately, in spite of probable good intentions on the part of both Washington and the Indians, the project could not be called a great success. Most of the Indians did not take readily to farming. Fancher assumes this to stem at least partially from the uncertainty with regard to the future status of Indian lands which resulted from the

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[1]Fancher, p. 80.

[2]Fancher, p. 81.

development of a considerable lag between the selection of lands and the issuance of patents. Whatever the causes, Fancher reports as follows:

> . . . They began to neglect their clearing and improvement and many of them left again to seek a livelihood by hunting, fishing, trapping and the making of baskets by the female portion of the family, gathering the materials for baskets and woven articles wherever most convenient.[1]

Also, even though schools were established, the Indian children did not understand English, and the white teachers did not speak the Indian dialects. Attendance seems to have been poor and results likewise.

The treaty of 1855 was supplemented by the Treaty of 1864 in which the Indians were again promised patents to lands already selected or which might be selected in the future, and more came to the Reservation. Some Chippewas, today, claim that their numbers reached 2,000 but there seems to be no proof of this. Some who selected lands never occupied them, and also, Indians were not counted in the census of 1870. By 1880, when Indians were again counted, the Indian population of the county had dropped from the 848 reported in 1860 to 479, while the total county population had risen from 1,443 to 12,159.[2] The drop seems to have been due both to a high death rate and migration to less

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[1] Fancher, p. 80.

[2] "Compendium, 1880," p. 355.

densely settled areas of the northern and western parts of the state.

Patents for land selection in the reservation were finally issued, beginning in 1871.[1] By this time white settlement had already overspread most of the promising agricultural lands of the till plain and silt lake plain land types outside the Reservation, and considerable pressure developed for the issuance of "Competent" or alienable titles to the Indian lands. Speaking of this situation, Fancher says:

> The whitefolks were desperately in favor of Brother Lo getting a clear title to his land, and they had good reason for this desire. There were about 100,000 acres of land, a large portion as fine as any in the state, and millions of feet of splendid pine timber, with large amounts of hardwood timber and all of it just coming to be worth good money. If this is all to be tied up by the Indian agent, it surely would be a calamity not to be tolerated, if there was any way to avoid it.[2]

There was a way. The following passage is from the sketch of Major James W. Long appearing in the previously cited Portrait and Biographical Album of Isabella County.

> Major Long held the position of Indian Agent during the most important period of its existence. The country in which the Indian Reservations were situated, was being stunted in their growth by the Indian lands not being taxable or the titles transferable. Major Long set to work earnestly and to him Isabella County owes the present flourishing condition of its northern portion

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[1] Fancher, p. 270; and "Album," p. 259.

[2] Fancher, p. 74.

> by reason of his procuring the Indians their patents from the government.[1]

The paragraph goes on to explain that everyone was pleased with the outcome of the issuance of the patents, mostly transferable. Probably this was true. The Indians, in most cases seemingly being given to little worry about the future and being not much interested in farming, wanted to sell, and the whites wanted to buy, not only the Indian lands, but the unclaimed lands which had up to this point been held in reserve in the Reservation.

Major Long himself commenting on the outcome of the issuance of the patents said:

> Lumber speculators soon bought the pine, coupled with the right of removal, at a nominal figure; and after them the land speculators purchased the land. Some of the Indians kept their land (very few comparatively) but none of them kept their pine.[2]

The following passage is an excerpt from a general description of Isabella Township appearing in the same volume (published in 1884):

> There are a number of Indians yet living in Isabella, and much of their lands are yet unimproved. Most of these lands will pass into the hands of the whites during the next five years, and the development of Isabella will rapidly ensue.[3]

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[1] "Album," p. 514.

[2] "Album," p. 534.

[3] "Album," p. 546.

Some few Indians were forced to keep their land by reason of holding "Not so Competent" patents. A few plots of land in the former Reservation are still in this category. Some few Indians held their land because they wished to do so, becoming respected members of the farming community.

Apparently, for the most part, the Indians who lived on the Reservation, like their prehistoric predecessors, wrought no spectacular changes in the natural landscape, at least in the carrying out of projects of their own initiation. The Indian in most cases seemed still to perceive the usefulness of the land to lie largely in the resources of the undisturbed forest and therefore modified it but little. Not only is this indicated in sources already cited but several people interviewed[1] who remember the Reservation area while the Indians were still fairly numerous there, report that they mostly lived in log houses surrounded by small clearings or none at all, did little farming, hunted, trapped, made baskets, picked wild berries, made and sold maple sugar[2] and in some cases worked in the lumber camps, in the spring log drives, and on the roads. They remained the dominant element of the population in some parts of the

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[1]Interviews with Emery McLaghlan of Section 34, Vernon Township, and Frank Benn, retired farmer of Section 15, Sherman Township, Isabella County, November 1967; also Peter Schafer and Pauline Boge.

[2]Woodworth, p. 70. (Evidence in addition to that furnished by interviewees cited in note 1 above.)

reservation for a short time after it was opened to white settlement. Nottawa Township was organized in 1874, and at the first election, of a total of thirty-three voters, five were white and twenty-eight were Indian.[1] Most Indians, however, as indicated above, soon sold out to the whites and left, though a few remain today.

Progression of Settlement During the Early Development Period

It is difficult to point to an exact date as the end of this period because of the overlapping in time of those phenomena mainly responsible for landscape change during the first half century of settlement. Pioneer occupance of the till plain and silt lake plain, though largely already accomplished, was still in progress to some extent when farmers started moving into the cut over pine areas of the sand lake plain, the sand hills, and the dry sand plains. Accompanying this spatial transition from agricultural settlement of the heavy lands to settlement of the sandy lands was an economic transition from an agriculture largely subsistence in nature and very limited in production to an agriculture integrated into the commercial structure of the nation and coming to bear the major responsibility for the economic well being of the area. The exploitation of the

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[1] "Album," p. 552.

pine overlapped both of these events. Eighteen eighty was chosen as the approximate date of the end of the period because it seems to lie reasonably close to a midpoint in both agricultural transitions as well as at about the half-way line and the high point in the exploitation of the pine.

Comparison of Figure 3 with Figure 1 (see pocket inside back cover) shows that at about the close of the period under discussion, settlement was well advanced in the southeast in Coe, Lincoln, Fremont, and Southern Chippewa Townships in the till plain and silt lake plain areas, and that a broad well settled band extended through the central eastern part of the County in Union, Isabella, and Vernon Townships, again largely in these land types. Small clusters of settlement now also appear in the southwest in till plain and dry sand plain land types and in the north west in the sand hills. Voids are obvious in the west and northwest and in the northeast and central east in the sand lake plain and silt lake plain.

The progression of white settlement from the southeast toward the north and west is indicated to some extent by the dates of organization of the several townships of the County (Figure 2). The late dates of organization of Denver in the east and Deerfield and Nottawa in the central area are due to the existence of the Indian Reservation (Figure 2). The early organization of Isabella Township, also within the Reservation, is due to white settlement which predated

the Indian Reservation and to the fact that Isabella Township as first organized included all territory in the County outside Coe and Chippewa.

Figure 2 also shows something of the early progression of settlement by means of presentation of data extracted from the Portrait and Biographical Album of Isabella County, which was published in 1884. The date of arrival and location of residence is usually given in the biographical sketches of County residents which appear in this volume. Whenever the sketch indicates the resident to be the original settler on the parcel of land or the first to accomplish major improvement of the parcel (erection of permanent buildings and accomplishment of significant clearing) a symbol indicating the period of arrival was entered in the square mile containing the land in question. The record is imperfect, both because there is often no indication as to whether the settler was the first to occupy his land and because the volume contains biographical sketches of only those County residents who contributed financially to its publication. The pattern which emerges, however, is in most cases that which is to be expected from known circumstances.

It may be noted from Figure 2 that all arrivals documented by the above means prior to 1860 occurred with one exception in the southeast and very largely in Coe Township. The one exception appears in Isabella Township in the central east in the Indian Reservation and represents the one

Indian farmer who appears in the publication. Comparison of Figure 2 with Figure 1 shows all of these in the till plain or along the western border of the southern segment of the silt lake plain.

Arrivals during the decade 1860 to 1870 are shown to be much more wide spread but still very largely in the till plain or silt lake plain with the exception of a cluster appearing in the sand hills in southeast Coldwater Township. Perhaps this is partially accounted for by the fact that relief of this area is below average for this land type and that there are more inclusions of heavier soils here than in most of the sand hills type. The gap in the central eastern part of the County where symbols for settlement during the decade 1860 to 1870 do not appear results from the existence of the Indian Reservation from which white settlement was excluded prior to 1871.

Thus Figure 2 which represents white settlement only, with the exception of the one Indian who appears in the "Album" shows occupance of the area comprising the Indian Reservation occurring entirely subsequent to 1870. Otherwise the symbols representing the period, 1870 to the compilation of the "Album," may be seen to be well dispersed among these representing the decade, 1860 to 1870. Expansion of settlement during this period then, seems to have consisted mostly of white movement into the former Indian

Reservation and increasing density of settlement within the area first occupied during the preceeding decade.

The Landscape at the Close of the Early Development Period

In the early days of settlement, man's imprint upon the landscape was largely in the nature of winding trails and scattered clearings in the forest. Ellen Woodworth, probably along with most early settlers, regarded the area not as divided between rural and urban but between "town and woods."[1] By the end of the early development period however, considerable clearing of farm property had been accomplished and in the earliest occupied sections, the forest no longer dominated the rural scene. In addition to time and place of arrival, The Portrait and Biographical Album of Isabella County often reports the number of acres cleared per farm at the time of compilation (1883 or 1884). As is to be expected, clearing had proceeded farthest in the areas which had been settled longest. Of the twenty-seven farms established prior to 1860 for which this information was given, twenty-four or 89 percent were reported to be half or more clear. Seventy-nine out of 107 or 74 percent of those settled between 1860 and 1870 were reported half or more clear, while forty-five out of ninety-two or 49 percent of those settled between

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[1]The rural area is often referred to as "the woods" in the Woodworth letters.

1870 and the compilation of the "Album" were reported to be half or more clear.

It follows, then, that the percentage of clearing for agriculture was greater in the east than in the west, and greater in the south than in the north. There is no direct evidence as to how much of the area reported to be clear may have been agricultural land and how much may have been nonagricultural land in the form of stumpland, either idle or in native grass pasture, but accounts of customary procedure would seem to indicate that even if stumpland were often reported as clear, a high percentage of the clearing would still have been agricultural land. In the sandy lands, stumpland was often tilled, and while this seems to have been less often the case in the hardwood forest areas, stumps were much more rapidly eradicated here so that the percentage of stumpland probably remained low.

The Southeast

At the close of the early period, clearing would thus have progressed farthest in the southeast, especially in Coe Township, in the till plain and silt lake plain. Some farmers reported their holdings 80 to 90 percent clear. The "Album" states:

> Coe was originally well timbered, but now it is the most highly improved and thickly settled township in the County.[1]

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[1] "Album," p. 544.

However, some farms reported as little as 25 percent of the land clear, while some plots remained entirely undisturbed, and even though Coe Township seems indeed to have been at this time the "most highly improved township" it is the opinion of the writer that probably nearly half of the forest remained, considering the township as a whole.

It may be seen from Figure 3 that in the southeast in general a rectangular road pattern was well developed by 1879 and that many farms existed along these roads. Schools, churches, country stores, inns, blacksmith shops, and saw and grist mills are not too hard to find. Roads were apparently often graded[1] and drainage ditches were appearing on the scene. In the older settled areas of the southeast, most of the log buildings had no doubt now either disappeared or were standing unused. People of that part of the County probably considered that at this point they had achieved success in bringing "civilization" to this formerly pioneer land.[2]

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[1]The following statement appears in the "Album," p. 539: "Those who travel over the nicely graded roads of the County today (1884), cannot realize how utterly impossible it was for the teams to draw a wagon at an early day along the narrow paths cut in the woods."

[2]The following appears in the "Album," p. 535: "The people of this generation, those who are reared in the midst of luxury and rocked in the cradle of affluence, know comparatively nothing of the hardships and pleasures attendant upon pioneer life. The attractiveness of our beautiful farms and picturesque landscapes, dotted here and there with neat substantial residences, present a pleasing picture in strong contrast with the humble log cabin of 1854, whose walls sheltered a few articles of rude furniture, and the stumps in the dooryard were repositories for cross-cut saws, the beetle and the ax."

The Southwest

By 1879, settlement extended pretty well across the southern part of the County but did taper off rather sharply in the much fragmented land types of the southwest. Here, somewhat less of the area was cleared for agriculture, though lumbering was in progress and there was now a considerable area of cut over lands.[1] The road pattern can be seen to be much less complete than in the southeast, and the roads were no doubt less well graded. There were more log cabins, few buildings to house services, and very few drainage ditches. There were, however, more and larger saw mills.

The Central and Northern Area

Proceeding northward from the comparatively well developed southeast, the well settled area, which at the close of the period extended nearly all the way to the northern boundary of the County, mostly in till plain, was in various stages of development. Some portions of the townships which had comprised the Indian Reservation still had many Indian residents,[2] and as previously indicated, these people had for the most part modified the forest but little.

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[1]The following statement appears in the "Album," p. 448: "Rolland . . . has furnished many millions of feet of lumber. Numerous mills are rapidly thinning out the forests. . . ."

[2]The following statement regarding Nottawa Township appears in the "Album," p. 552: "This is still included in the Indian Reservation, and most of the inhabitants are Indians."

By the end of the period, most of the white settlers had been in the area less than a decade, and it retained many of its pioneer aspects, such as poorly developed roads, low percentage of agricultural land, and log farmsteads. However, with respect to general clearing, the area contained some pine, and cut over land also existed here.

The well settled area to the north in Vernon, southwestern Gilmore, and western Wise Townships now seems to have shown less of a pioneer character than the former Indian Reservation, having now been occupied by white settlers for a longer period. Judging from an account appearing in The Portrait and Biographical Album of Isabella County, both lumbering and clearing for agriculture were well under way.[1] The "Album" also indicates that for a "new country" the roads were well graded and mentions "choice tobacco" as one of the products of Vernon Township, disclosing at least the existence of commercial agriculture.[2]

The Sand Hills and Dry Sand Plains of the Central West and Northwest

Settlement was generally sparse in the central west and northwest. Lumbering was the main enterprise here, and much cut over land now existed, though some stands remained untouched. Although only the pine was taken during the

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[1] "Album," p. 549.

[2] "Album," p. 549.

heyday of lumbering, the remaining growth was often destroyed either in the logging process or by the fires which usually followed the lumberman in the "pine slash." Fires were especially severe in 1871,[1] and affected particularly the west and northwest area.

The Sand Lake Plain and Silt Lake Plain of the East and Northeast

At the close of the early period, there was almost no agricultural settlement in the eastern part of the County north of the southern segment of the silt lake plain whose northern boundary runs diagonally across Chippewa Township (compare Figure 3 with Figure 1). Lumbering, however, was in progress here with much of the pine already removed from the sand lake plain in Denver Township, though apparently some remained in Chippewa Township.[2] Sawmilling had become a significant enterprise at the village of Loomis[3] in Wise Township. Much of the northern segment of the silt lake plain lying in southern Wise and northern Denver Townships seems to have remained, at the end of this period, almost

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[1]Fancher, p. 270.

[2]The following statement appears in the "Album," p. 557: "All the east half of Denver Township was covered with a heavy growth of pine, but this has mostly been cut away," while on page 545, appears this statement: "Only the west half of Chippewa Township is very well improved, a large portion of the lands in the eastern part being covered with heavy timber."

[3]"Album," p. 557.

entirely undisturbed by man, with no settlement existing in the eastern four tiers of sections in either township. There was no pine in commercial quantities here, and settlers had not yet ventured into this flat wet area.

Summary of Early Landscape Development

In the early days of white occupance, it may be said that, in general, farmers took over the till plain and much of the silt lake plain land types, while lumbermen invaded the sand hills and sand plains. The wettest and most remote of the silt lake plain and the muck and peat lands remained largely untouched by either.

With respect to Category I elements of the landscape, agricultural and nonagricultural lands were probably about equally extensive in the southeast. In the well settled central and northern areas, nonagricultural lands were no doubt still clearly in the majority, while in the remainder of the County, nonagricultural lands were either the sole element of the rural landscape or were overwhelmingly in the majority.

The agricultural lands of the well settled till plain and silt lake plain land types in the eastern portion of the County consisted in the main of rectangular fields most often completely cleared, fenced with rails, and producing well, while the limited agricultural lands existing elsewhere were of varied character. The nonagricultural

lands of the till plain and silt lake plain consisted largely of luxuriant hardwood forest but also to some extent of stump land, usually in a brief transition to clear agricultural land. In the sandy land types, the very extensive nonagricultural lands found there consisted of mixed pine and hardwood forest, and also large areas of cut over and burned over lands.

The road pattern was most nearly complete and the roads most improved in the well settled till plain and silt lake plain areas. The few public drains then in existence were for the most part to be found only in these land types.

Considering Category II elements, farmsteads were far more numerous in the till plain and silt lake plain lands of the east than elsewhere, as were all other types of structures which provided shelter for human activity. Occupied pioneer buildings were the exception in the southeast at the close of the period. These were, however, frequently to be noted in the remainder of the east and they were, in general, still the rule in the west.

CHAPTER IV

THE PERIOD OF EXPANDING COMMERCIAL AGRICULTURE

The period discussed in this chapter encompasses approximately the two decades from 1880 to the end of the century. Whereas the early period saw the initial agricultural occupance of most of the productive heavier lands of the County, the comparatively brief existence of the Indian Reservation, and the rise of pine lumbering, the period now under consideration witnessed the demise of pine lumbering, the impact of the railroads, the expansion of agriculture to most of the remainder of the area, which consisted largely of the cut over pine lands, and the establishment of commercial agriculture as the County's leading economic enterprise.

Change in the Time-Space Relationships of the Area

Throughout the Early Development Period, the local isolation, so largely responsible for the pioneer character of the area, was slowly breaking down. However, even though the construction of the State Roads, mentioned in Chapter IV, did improve connections with the outside world, it still remained a long and arduous trip by wagon, carriage, or

stage from most locations in the County to a railhead in any direction, and while daily mail and passenger service had come by the end of the early period,[1] movement of bulk goods remained slow and prohibitively expensive. Not until the passage of railroads through the area was there a really significant break in the wall of isolation. The first railroad to touch the County was one of several attracted by the lumbering development of the central and northern parts of the state and was constructed in 1871.[2] It ran from Saginaw to Ludington, crossing the northeast corner of Isabella County. It spurred lumbering in the sand lake plain of the northeast and probably stimulated the agricultural development of the north central portion of the County which was sparcely settled at the time.[3] In 1875,[4] rails came to the southwest with the construction of the Detroit, Lansing, and Northern Railroad which passed across the corner of Rolland Township (see Figure 3). Again lumbering seems to have been responsible for the building of the road, but the agricultural development of the southwest part of the County also

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[1] Michigan State Gazateer and Business Directory (Detroit: R. I. Polk and Co., 1885), Vol. VII, p. 1582.

[2] Fancher, p. 271.

[3] The population of Vernon Township in 1870 is listed in the United States Census reports as 383, and that for Gilmore as 88. In 1880, the population is reported to be 1,090 and 261, respectively.

[4] Fancher, p. 141.

benefitted.[1] However, the most populous and by far the best agriculturally developed portion of the County in the southeast remained without a railroad. To be sure, rails could be reached at Clare on the Saginaw and Ludington Road by means of the Alma and Clinton State Road, or at Remus on the Detroit, Lansing, and Northern by means of the Big Rapids and Mt. Pleasant State Road, but it was still a two day round trip from Coe Township to either of these centers. It was not until December of 1879,[2] when the Saginaw and Mt. Pleasant Railroad linked Mt. Pleasant to the Saginaw and Ludington Railroad at Coleman that the southeast achieved a really feasible connection with the general rail and water transportation system of Anglo-America. This railroad was hailed as a tremendous economic asset to Mt. Pleasant and the southeast area.[3] In 1886, the railway being built by the Toledo, Ann Arbor, and Northern Co. from Toledo to Frankfort, which became known as the Ann Arbor, reached Isabella County.[4] It crossed the County from south to north, locally connecting Salt River (Shepherd), Mt. Pleasant, and Clare and established the first direct southward rail connections for the southeast, drastically altering the time-space

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[1]Fancher, p. 141.

[2]"Album," p. 577.

[3]"Album," p. 577.

[4]Fancher, p. 271.

relationships of this area, no part of which was now more than half a day away from economically feasible transport connections with the heartland of developed America.

A minor landscape change resulted from the circumstance of the passage of the Ann Arbor Railroad just to the west of the village of Salt River. The business district of the settlement soon shifted from the river to the railroad, and the name was changed from Salt River to Shepherd.

In the western portion of the County, two branch railroads were constructed during this closing period of the century. One came in from the village of Lake in Clare County to the Village of Brinton in Coldwater Township, for the purpose of moving the product of a large charcoal plant established there. The other entered the County from Remus and ran to the village of Weidman in eastern Sherman Township. Weidman was established in 1895[1] on the basis of a shingle mill operation using cedar cut from the large swamp area existing in that part of the County (note muck and peat land type areas near Weidman, Figure 1).

Completion of these two roads marked the maximum railway development within the County (Figure 7). By 1915, the road to Brinton from the north had already disappeared (see Figure 8, Chapter V). The charcoal operation had

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[1]Interview with George R. Wheeler of Section 29, Union Township, Isabella County, Michigan, Professor Emeritus of Central Michigan University, November 1967.

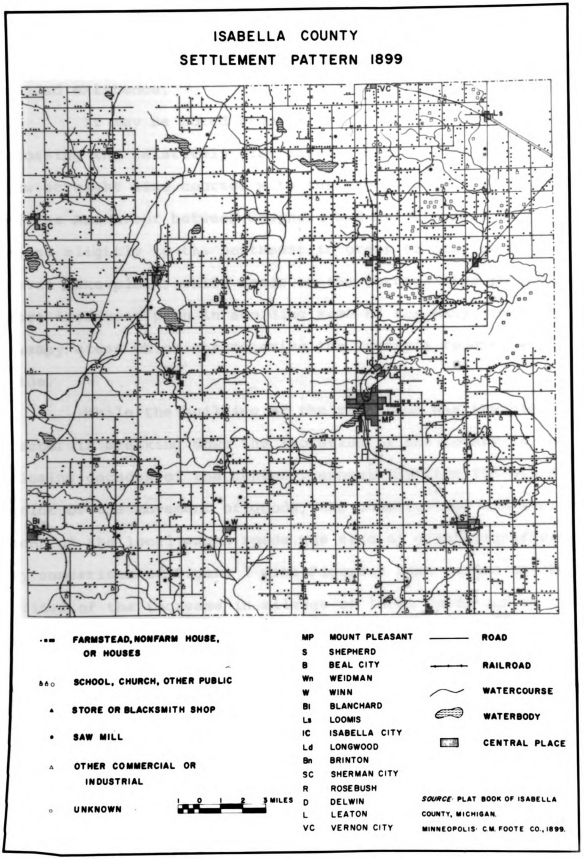
ISABELLA COUNTY
SETTLEMENT PATTERN 1899
FARMSTEAD, NONFARM HOUSE, OR HOUSES
SCHOOL, CHURCH, OTHER PUBLIC
STORE OR BLACKSMITH SHOP
SAW MILL
OTHER COMMERCIAL OR INDUSTRIAL
UNKNOWN
0 1 2 3 MILES
MP MOUNT PLEASANT
S SHEPHERD
B BEAL CITY
Wm WEIDMAN
W WINN
Bl BLANCHARD
Lo LOOMIS
IC ISABELLA CITY
Ld LONGWOOD
Bn BRINTON
SC SHERMAN CITY
R ROSEBUSH
D DELWIN
L LEATON
VC VERNON CITY
ROAD
RAILROAD
WATERCOURSE
WATERBODY
CENTRAL PLACE
SOURCE: PLAT BOOK OF ISABELLA COUNTY, MICHIGAN. MINNEOPOLIS: C.M. FOOTE CO., 1899.

Figure 7

exhausted its material supply, and the agricultural development of the northwest sand hills did not warrant its continued existence.

It may be noted from Figure 7, that the railroads crossing the relatively flat eastern side of the County follow straight line courses with the exception of the section of the Ann Arbor between Shepherd and Mt. Pleasant which loops slightly to the northeast in order to stay on the level lake plain, while roads on the western side follow a more irregular path in avoiding some of the many steep or swampy areas which characterize the County's rougher west side.

While the building of the railroads was the big factor in breaking down the isolation of the County in the closing decades of the century, especially from the standpoint of the movement of goods, the construction and improvement of the local wagon roads was also of great significance. By comparison of Figure 7 with Figure 3 some notion may be gained of the increase in mileage of local roads during the period. Most of these roads had advanced far beyond the woodland trail stage and all were passable most of the year. It was true, however, that many still left something to be desired, especially in the silt lake plain and till plain, in that they were often next to impassable in spring, even for high wheeled wagons.

Economic and Spatial Expansion of Agriculture

The last significant commercial stand of pine remaining in the County was cut in 1890,[1] in the western sand hills region of Broomfield Township, and with the exhaustion of the pine, agriculture became overwhelmingly the leading economic activity of the County. With the rapid expansion of agricultural settlement, the supply of agricultural products came to outstrip the local demand, discussed in Chapter III, and by the time the railroads came, agriculture was much in need of outside markets.[2] The railroads provided access to markets in developing urban centers, and while prices never again approached early levels from a relative point of view, local agriculture found itself on a firm financial footing by the time pine lumbering ceased and at that time represented the only line of commercial endeavor open to any significant number of people. With the severe curtailment of forestry activity in the 1890's, the export of agricultural products became almost the sole means of drawing outside money into the community, a necessary accomplishment, if a community is to buy goods originating outside its confines.

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[1] Wheeler, interview.

[2] Fancher, p. 271.

The number of farms in the County rose from 1,679 in 1880 to 3,436 in 1900. With the great majority of the hardwood forest area of the till plain and silt lake plain already taken by the beginning of the period (Figure 3), this meant that a high proportion of the new farms were established in the former pine lands which now went on sale, as the pine was removed. Comparison of Figures 3 and 7 reveals much of the void which appears in 1879, and which in the main was pine land, no longer present in 1899. With pine for the most part having occupied the County's sandy land types, many farms established during the period thus consisted of land less fertile than was the case in the early period.

Forestry Operations Other Than Pine Lumbering

Forestry operations did not entirely cease with the exhaustion of the commercial stands of pine. By 1880, hardwoods began to have value.[1] During the period, 1880 to 1900, Mt. Pleasant grew from a population of 1,115 to 3,662 and provided a limited outlet for firewood.[2] Beech and maple, which were predominant species of much of the hardwood forest, is unexcelled for this purpose. Specialty mills making barrel staves, interior house trim, hardwood veneer, lath,

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[1]Fancher, p. 270.

[2]Boge, interview.

and other products which used hardwood sprang up in Mt. Pleasant and elsewhere. The previously mentioned charcoal installation at Brinton in Coldwater Township made use of the hardwood, much of which was oak, remaining in this sand hill area after removal of the pine.

These industries were supplied by farmers who cut the wood from their own land, mostly during the winter, and hauled it to the plants. Sale of hardwood provided a much needed source of income for farmers during the otherwise largely unproductive winter season, and was especially helpful to those just starting to clear their lands as in the former Indian Reservation or to those in the least fertile of the sandy lands, who found themselves with little for sale other than hardwood left behind by the pine lumbermen. Farmers, with few exceptions, cut wood to provide fuel for their own homes. This practice is still not wholly discontinued, especially among the few farmers still operating in the less productive and partially wooded areas. During the latter part of the period, as local pine lumber became unavailable, farmers often cut their hardwood as well as any remaining scattered pine trees for sawing by local custom mills into lumber for their own use. For the most part, during this period, clean cutting was the practice, whatever might be the use of the wood, and was thus a part of the process of clearing land for agriculture.

Commercial logging from other than farm lands did not quite cease when the pine ran out. There still remained the cedar, hemlock, and tamarack of the swamps and some by-passed hemlock in upland areas. The cedar became valuable for shingles after the pine locally became unavailable or too costly for this use. Tamarack and hemlock became substitutes for pine. In the case of hemlock, the bark was removed for use in leather tanning and the logs then sawed into lumber.[1] Lands supporting commercial stands of cedar, hemlock, and tamarack were not extensive and were for the most part soon cut over. However, scattered small shingle mills operated well into the present century.

Figure 7 (1899) shows many more sawmills than Figure 3 (1879), which was derived from a plat compiled while pine lumbering was at its height. This was characteristic of the shift from pine to hardwoods and lowland soft woods. Most of the pine went down the Chippewa and Pine rivers to large mills in the Saginaw area, while the remaining timber was worked by many small mills scattered about the County, producing very largely for local consumption only.

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[1]Wheeler, interview.

General Character of Agricultural Occupance

Agriculture during this period retained some of its earlier subsistence character in that most farm families provided their own fruits, meats, and vegetables, and usually their own fuel, but commercial orientation, present to some extent even in pioneer days on a local basis, was now considerably increased. The pioneer farmer produced relatively small quantities of salable products. He had not the cleared land to produce, the means to tend, or the market for, larger acreages of crops or numbers of livestock. However, the period from 1880 to 1900 witnessed the County's greatest gain in tillable land with the census figure for "improved" land advancing from 55,361 acres in 1880 to 153,662 acres in 1900, and now as clearing progressed and also as the mechanization of certain processes increased and the railroads came, this situation began to change rapidly. Farmers now raised much larger acreages of the staple field crops, chiefly wheat, corn, oats, potatoes, and timothy hay, and also kept larger numbers and a greater variety of livestock, which usually included horses, cattle, hogs, several kinds of poultry, and sometimes sheep. They now depended upon the sale of these products to buy a greater volume and range of foods, clothing, and household furnishings than in pioneer days, as well as building materials, fencing materials, a greatly increased number of comparatively costly

agricultural implements,[1] and many other products not formerly within their reach, physically or financially.

Agriculture in this period may be said to have become both more general and more specialized. It became more general in that many farmers now managed to raise most or perhaps all of the variety of staple field crops and livestock mentioned above. More fields of a greater assortment of crops were thus now to be seen. Farmsteads reflected the greater numbers and greater range of livestock. Cattle and horses were now usually sheltered in frame barns, while sheep sheds, hog houses, and poultry houses became common.

Agriculture in this period also became more specialized in that a few farmers instead of multiplying their enterprises as many did, now began to concentrate on a few, a process not usually feasible before the increased commercialization of the time. The "Album" (1884) refers to some farmers as "stock raisers" which seems to mean that they were concentrating at least to some extent on livestock. A plat book published in 1899[2] lists patrons of the project,

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[1]These included steam powered threshing machines, grain reapers and binders, grain drills, mowing machines, hay bailers, fanning mills, cream separators, feed cutters, and cord wood saws. Advertisements for these implements were noted in the Isabella County Enterprise, issues of June 29, 1888, April 12, 1895, and May 7, 1897 and in the Northwestern Tribune, issue of October 30, 1891. Both were weekly newspapers published in Mt. Pleasant, Isabella County, Michigan.

[2]Plat Book of Isabella County, Michigan, 1899, pp. 39-42.

and among these, several are listed as engaging in stock raising along with farming, again seeming to indicate emphasis on livestock, in these cases. Some are listed as breeders of blooded stock, usually beef or general purpose cattle, but sometimes swine, sheep, and horses. No breeders of dairy cattle are indicated, and only one farmer is listed as a dairyman.

With dairying still possessing a considerable subsistence function, something like this latter situation is to be expected. The market for fluid milk was local and very limited. Commercial dairy products therefore usually took the form of butter and cheese, mostly the former[1] with the skimmed milk being used on the farm to feed swine or calves being raised for beef animals.[2] The labor involved in this type of operation tended to limit numbers of dairy cows, and most of those who specialized to some extent in cattle did so expecting the sale of beef animals to produce the major portion of the income from the project.[3] Beef or

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[1]The U.S. Census of Agriculture reports for Isabella County, in 1899, 4,068,386 gallons of milk produced, but only 400,324 gallons sold. Sales of butter were 355,005 pounds and cheese, 10,252 pounds.

[2]Shafer, Boge, and Wheeler, interviews.

[3]Established by interview with several informants and the U.S. Census of Agriculture which reports the value of live animals sold for Isabella County in 1899 to be $254,709, while the total value of dairy products less those consumed on the farm is reported to be $86,603.

general purpose breeds of cattle were thus the rule and farmsteads seldom included specialized dairy barns.

Also, a few farmers were now specializing in cash crops, chiefly at this time, wheat, oats, hay, and potatoes.[1] Navy beans and sugar beets were just starting to come in toward the end of the period.

The fencing situation was now changing as a result of several factors. The public domain was now approaching the vanishing point, the untilled area was shrinking, the acreage of crops to be protected was increasing, the numbers of livestock were rising, and the supply of domestic fencing material in the form of logs that could be converted to durable rails was dropping. In the older settled areas, livestock came increasingly to be contained in fenced pastures, though some were still allowed to roam at large, especially in the more recently settled areas, a situation which may have had some bearing on the fact that many early farm houses were surrounded by some sort of fence.

Rail fences were now often the straight variety, mentioned earlier, which required less material and less space than the zigzag type. Barbed wire, a practical type of which seems to have been invented in 1874[2] came to

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[1]Established by interview with several informants, and U.S. Census of Agriculture Reports which indicate only these cash crops produced in significant quantity.

[2]Walter Prescot Webb, The Great Plains (Boston, New York, Chicago: Ginn and Co., 1931), p. 231.

Isabella County about 1880,[1] and was often used along the tops of rail fences to keep cattle from pushing them over. Later, barbed wire was sometimes used without rails. During the late 1880's and early 1890's, when local lumber was plentiful and cheap, board fences were common. They did not, however, endure well, and few were replaced because of the short life and rising lumber prices.[2] On the whole, a great deal more land was now fenced than in the early period, most of it still with rails, though sometimes with barbed wire added.

The mechanics of obtaining water also changed during this period. In most areas, hand pumps now replaced the various kinds of dip type apparatus that had been common in the early period as a means of drawing water from wells. This change was a part of the constantly increasing sophistication of equipment aimed at easing the burdens of daily existence, for which Americans have been noted. However, there was no doubt some connection between the use of pumps on the one hand and the increasing numbers of livestock and the rising tendency to contain them on the other. Part of the rationale for allowing the animals to wander had been that they were usually able to find water for themselves. When they were confined, however, the farmer most often had

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[1] Fancher, p. 279.

[2] Fancher, p. 279.

to supply it, and pumps were more efficient than buckets for the purpose.

The Landscape at the End of the Nineteenth Century

By the close of the period in question, a measure of homogeneity had developed in the landscape of the County in that throughout the major extent of the area a considerable degree of clearing was evident and some sort of agricultural enterprise was underway. Very considerable differences nevertheless still existed.

The Southern Till Plain and Silt Lake Plain

The till plain and much of the silt lake plain areas of Coe, Chippewa, Lincoln, Union, and Fremont Townships had now for the most part been settled for thirty to forty years, and clearing, while not yet at the maximum, was well advanced. Rectangularity of landscape was very evident with a nearly complete pattern of roads, mostly established exactly on the section lines, and with farms divided into rectangular fields, the majority of which were nearly square. Within each section (square mile), the cleared land generally surrounded a diminishing wooded area in the approximate center, a situation resulting from the fact that clearing usually proceeded from the road frontage of each farm toward the interior of the section. Clean cutting being the general practice, the small swales present in the till plain were

cleared along with the upland area. Some of these depressions were now being drained, sometimes by open ditch but more often by tiling, or in some cases even by tunnels supported by wooden blocks. Undrained swales were tilled then more often than now, because land may be tilled in a much wetter condition by horse power than by mechanical power, and also the higher humus content of the soil, which usually obtained during the first years of tillage, helped to prevent the serious compaction which now results from cultivation of wet soils which have a high clay content. However, large undrained swampy areas were sometimes present in the till plain, and these were only partially cleared or not at all, appearing as forest or stumpland.

Farm drainage lines in the till plain were established in an irregular pattern to reach scattered low spots, and ideally consisted of tile because very deep open ditches would sometimes be required to drain these depressions. Drainage lines in the silt lake plain usually took on a rectangular pattern as the best means of relieving all over wet conditions. Tile were often employed here, but because of the slight though constant slope situation here, shallow open ditches were more feasible and consequently more numerous than in the till plain. The temporary "furrowing out" mentioned in the discussion of the early period was also employed. Drainage of the silt lake plain usually required a greater total length of lines and was more expensive than

was the case for the till plain, but the end result was agricultural land in which moisture conditions were much more even than could be achieved in the undulating till plain, greatly facilitating planting, harvesting, and crop growth.

Fifty-two county drainage projects were recorded before 1900, with an undetermined number of drains having been established by the townships. Many of these were open ditches, and many consisted of modification of natural waterways. Virtually all were in the till plain areas or the southern segment of the silt lake plain in Coe and Chippewa Townships.

As may be seen from comparison of Figure 7 with Figure 1, the till plain areas throughout the County as well as the southern segment of the silt lake plain now possessed a high density of farmsteads. Occupied pioneer buildings were now rare in the southeast. Frame house and barns of the type described in the preceeding chapter were the rule, some, especially houses, of rather impressive size.

The general appearance of the landscapes of the till plain and of the silt lake plain was similar in that each showed a great degree of rectangularity, each possessed a high density of farmsteads and in each a majority of the area consisted of clear agricultural land producing well, while the nonagricultural land was mostly forested, though

during this period a certain amount of stumpland was usually also present.

There were differences, however. One was entirely natural, arising from the undulating character of the till plain as compared to the much more nearly flat silt lake plain. Another was that as a result of the undulating surface of the till plain, the impression of basic rectangularity of the landscape was more often disturbed. Not only did depressions sometimes result in the existence of irregular wooded areas, but field boundaries and sometimes even roads occasionally veered from a straight course to avoid wet spots.

It was by this time already apparent that the silt lake plain was better cash crop land than the till plain, by reason of the greater productivity of the lake bed soils, and the more favorable if more expensive drainage situation. Nearly all farmers in the former type who deviated from general farming, went to cash cropping, and numbers of livestock seem to have been lower here even on the general farms. None of the stockmen mentioned earlier were located in the silt lake plain. As a result, fences were fewer, barns were sometimes smaller, and swine and poultry houses were less in evidence. The greater numbers of livestock in the till plain were reflected not only in the farmsteads and fences, but also in greater acreages of hay and pasture. Maturing

crops on the silt lake plain then as now often displayed a more even development.

The well settled and generally prosperous character of this southeast area was reflected in the relatively large numbers of public function structures, such as churches, schools, and post offices, as well as commercial or industrial features such as stores, blacksmith shops, and saw mills (Figure 7). The latter in this location were largely small establishments serving neighborhood needs.

The Central and Northern Till Plain and Northern Silt Lake Plain

The central till plain and the western edge of the northern segment of the silt lake plain, especially to the north and northeast of Mt. Pleasant shows up on Figure 7 as even more densely occupied than the south east, even though white occupance was largely deterred by the existence of the Indian Reservation until after 1871. It may be noted that in this area, symbols for structures sometimes appear in the interior of the sections. While farmsteads have been known to have been established some distance from the road for a variety of reasons, this procedure is unusual in Isabella County. These symbols, most of which have not appeared on any County Plat since 1899, though shown as unknown, probably represent Indian dwellings. This is assumed not only because they are unlikely to represent farmsteads, but also because in almost all cases the land on which they occur is

shown as Indian property on the Plat on 1879, from which the information used in Figure 3 was drawn, and some is still shown in Indian ownership on the Plat of 1899 from which Figure 7 was derived. Also, the Indians are known often to have located without regard for existing or possible future road development.

That the Plat of 1879 (see Figure 3) does not show these interior symbols probably does not, in the opinion of the writer, indicate that structures did not exist there in 1879, but rather that those who compiled the 1879 Plat did not search the areas where roads were lacking or the wooded interiors of the sections to locate Indian dwellings. Any such habitations were probably much more evident in 1899 that in 1879 because of increased clearing and extension of the road pattern. The apparent profusion of structures in this area in 1899 probably results from overlapping white and Indian occupance, though the occupied Indian cabin must be assumed now for the most part to have become a minority element, because of the previously mentioned drop in the Indian population.

With the exception of some surviving Indian dwellings, there is no evidence that at the end of the period, the landscape of the central till plain and western border of the northern silt lake plain differed very markedly in general character from the southeast. However, because of later white occupance, it seems reasonable to expect that a

few more pioneer buildings might be in evidence, and that clearing, drainage, and road development might not be quite as far advanced.

The northern till plain areas in Vernon, southeast Gilmore, and northwest Wise Townships now appear to have been about as densely settled as the southern till plain (see Figure 7), and to have shown similar development. The percentage of clearing, however, probably did not equal that of the south. It may also be noted from examination of Figure 7, that the clay loam hill lands of the central north area were now also fairly densely settled, and except for their more rolling character, probably at this time presented a general aspect similar to that of the till plain, inasmuch as it is evident from observation that they were once to a considerable degree cleared for agriculture, though the forest is now returning in some of the roughest area along the northern border of the County.

The eastern portion of the northern segment of the silt lake plain, in southeast Wise and northeast Denver Townships, which was flatter and evidently much wetter than the western part, was the last area of productive agricultural land of the County to be settled, and at the close of the century, still retained something of a pioneer character. A resident of section thirty-four, Wise Township,[1] who

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[1]Interview with Austin Moore, farmer in Section 34, Wise Township, Isabella County, November 1967.

remembers the early days of settlement, reports that his family were the first settlers (1891) in that immediate vicinity and that it was ten years before a neighbor's light was visible from their house. Assuming this information to be correct, and noting from Figure 7 that there were numerous farmsteads shown in this section by 1899, it must be assumed that much clearing yet remained to be accomplished. The above informant estimates that his immediate area was no more than half cleared by 1905.

Settlement was retarded here for at least three quite apparent reasons. One was that Wise Township was a part of the Indian Reservation from which white settlement was excluded from 1855 to 1871. Another was the location in the more remote north where all settlement lagged behind that of the southeast. The third was the wet character of this silt lake plain land. The general opinion in the County seems to be that this northern segment of the silt lake plain was even wetter than the southern portion in Coe and Chippewa Townships, though no good natural reason for this is apparent to the writer. However, the surveyors regarded the two areas differently. As previously cited, field notes of the original survey of Coe Township, done in 1832, indicate eastern Coe Township to be "1st rate" land outside the swamps. Southwest Chippewa Township which embraces part of the same segment of silt lake plain is also termed

"1st rate."[1] On the other hand, notes on a resurvey of Wise Township done in 1851 calls the eastern portion "level, wet, and poor 2nd and 3rd rate,"[2] making no distinction between the silt and sand lake plain types which exist there. The notation "level, wet, and swampy, 3rd rate," is written across the eastern part of the Township on the 1851 resurvey plat. If early settlers and speculators examined these notes, the judgment of the survey crew could have influenced the late settlement here. In any case, late development caused this area to remain, at the end of the period, a land of pioneer buildings, unimproved roads, and considerable virgin forest, with some plots of land still unclaimed by settlers.[3]

The Cut Over Pine Lands

As previously indicated, most of the cut over pine land into which settlers moved in large numbers in the last two decades of the nineteenth century, consisted of one of the three sandy land types. The first white men known to have examined the area, the survey crews, recognized the inferior quality of these lands for agriculture. A summary

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[1] "United States Field Notes," Vol. XLVIII, p. 109.

[2] "United States Field Notes," Vol. XLVIII, p. 205.

[3] "Plat Book, 1899," pp. 10-11. The 1899 Plat shows some of the land in this part of the silt lake plain still held by Wells, Stone Company. Mr. Moore reports that his father bought his land from Wells, Stone Company, and that the price in the 1890's was about ten dollars per acre.

of conditions in Coldwater Township in the northwest, which consists largely of the sand hills land type, states:

> This type is rolling poor sandy soil with the exception of the swamps and some small tracts of good farming land between the swamps along and near the creek through the center. . . .[1]

The following is said of Sherman Township next to the south:

> . . . is rolling, poor, pine, hemlock timbered with exception of the swamps which might be called worthless except for the cedar timber.[2]

The sand lake plain lands in Denver and Chippewa Townships in the central east were described as "level," "wet," "poor soil," and "3rd rate."[3] Settlers came to these lands in spite of the disadvantages of soil, slope, and drainage that existed over much of the area, though the density of settlement varied greatly and in general did not reach that of the heavier lands (compare Figure 7 with Figure 1).

By comparison of Figures 3 and 7, it may be noted that the huge voids in the road pattern that existed at the beginning of the period were greatly reduced or eliminated by the end of the period. Comparison of the above figures with Figure 1 shows much of the new road mileage to exist in the sandy land types. However, it may also be noted that the road pattern of the sand lake plain on the east and that

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[1] "United States Field Notes," Vol. LI, p. 294.

[2] "United States Field Notes," Vol. LI, p. 242.

[3] "United States Field Notes," Vol. XLVIII, pp. 109, 145.

of the western side of the County in general, of which the sand hills and dry sand plains constitute a very considerable portion, is less complete and less regular than in the rest of the County. Existing roads in these areas were often of the sand trail variety.

The general aspect of the cut over lands differed greatly from that of the hardwood forest during their respective settlement periods. Where the latter in summer was green with forest, crops, and grass, the former was often an expanse of stumps and fire blackened standing timber in which perhaps an undergrowth of weeds, berry bushes, and small aspen and oak trees was getting underway.

Even though in many cases, the settler found no standing green timber on his land,[1] he still faced a formidable clearing task. A great amount of debris remained after the lumbering operation in the form of rejected pine logs and, if the area had been burned over, of dead hardwood trees. If the land had escaped the usual fires, there was the pine "slash" to dispose of and the live hardwoods to be removed. In either case, the pine stumps refused to decay to the point of easy removal in a few years time as was the case with the hardwood stumps, and had to be removed by explosives or heavy duty horsepowered pulling machines, which usually

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[1]Interview with Fred Woodruff, retired farmer of Section 36, Broomfield Township, Isabella County, November 1967, and also Frank Benn.

required a crew of several men to operate. The settlers did not accomplish this task rapidly, and "stumping" was still in progress in the 1920's.[1] Such crops as existed in the cutover areas were often planted among the pine stumps.

Some years ago, the expression "out in the burnings" was often heard in Isabella County, and was meant to express the ultimate of remoteness from civilization. It seems to have originated from reference by settlers to unimproved, cut over and burned over pine lands as "the burnings."[2] Such lands were used in common for pasture. Eventually, the greater part of the cut over pine land was incorporated into farms, though some not until after 1900.

The sandy lands being for the most part newly settled in the closing decades of the nineteenth century, farmsteads were often of a pioneer character. Dead pine logs, left behind by the lumbermen, were often used for walls of buildings and aspen poles for rafters.[3] Pine shakes were the usual roofing material of the earliest structures, but locally produced cedar shingles became readily available before the end of the period. However, while log structures were

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[1]Interview with Allison Taylor, farmer of Section 12, Rolland Township, Isabella County, November 1967, and also Frank Benn.

[2]Interview with Bert Estes, retired farmer of Section 15, Coldwater Township, Isabella County, July 1967.

[3]Woodruff, interview.

common throughout the sandy lands at the turn of the century, sawn lumber and factory processed building materials were now available in the County, and throughout the area, some new settlers who felt that they could afford it, built substantial frame structures upon first occupying the land.

The dry sand plains.--Of all the sandy lands, only in portions of the dry sand plains of the interior of the county such as in northeast Rolland and southeast Sherman Townships, did the percentage of agricultural land ever approach that which was obtained in the hardwood forest areas. Here enough silt was present to provide moderate fertility, topography was favorable to tillage, and little artificial drainage was required. Though drought was often a problem, soils with the highest silt content usually retained enough moisture to prevent total crop failure. Stumps seem to have been removed a bit more rapidly here than in the less favorable sandy lands, and cleared fields as large as ten acres, usually surrounded by pine stump fences were not unusual by 1900, though even here, much stump removal remained to be accomplished after that date.[1] Fields were usually square, with neither topography nor soil interfering with landscape rectangularity. Here, as in all of the cut over pine lands at this time, livestock were usually allowed to roam the "burnings" and so were being

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[1]Taylor, interview.

fenced "out" rather than "in," as was the case in the hardwood forest areas during the early period.

Clearing of the remaining hardwood, mostly for fire wood, both for sale and for home use, proceeded rapidly and the major portion of all standing timber had been removed by the end of the century,[1] though by no means all of the cleared area was promptly improved for agriculture. The chief cash crop of the early days here seems to have been potatoes. The sandy soil produced a high quality product, but before the days of fertilization and improved culture methods, productivity declined rapidly.

The sand hills.--The pine stumps are still present on some of the rougher lands and coarser soils in the sand hills. While most of this land type was incorporated into farm units, some of the land was used only for pasture, and of this, a portion was already starting to return to forest by 1900, where the absence of fire permitted. Here, agricultural land very often existed in irregular plots as a result of soil or slope conditions, in contrast to the hardwood forest areas and the dry sand plains, where the limits of cleared land in both cases were set largely by the progress of the individual farmer rather than by the character of the land. However, within the irregular clearings of the rough sandy lands, the field pattern was usually as near rectangular

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[1] Taylor, interview.

as possible. Drainage was a minor problem in the sand hills, and few or no public projects seem to have been undertaken before 1900.

Fencing in the sand hills, as in the dry sand plains, was sometimes done with pine stumps though apparently to a lesser extent in the case of the sand hills. Stumps were more difficult to handle on slopes, and also the material was less readily available, with the pine stumps having been removed from a smaller percentage of the sand hills area. Boulders, so common in this morainal land type, were sometimes used as fences, often with an assist from barbed wire.

Possibly, the percentage of farmsteads consisting of frame buildings was higher in the sand hills than in the other sandy land types. Not only did some of the original farmsteads established here during this period consist of frame buildings as elsewhere, but also within the sand hills area, as previously noted, settlement on spots of heavier soils sometimes predated the pine lumbering operations, and on the farms in such areas there was ample time for the replacement of pioneer buildings before the end of the century.

The sand lake plain.--Settlement had not proceeded as far by the turn of the century in the sand lake plain areas of the east as in the other cut over pine lands. Here farmers often faced the double problem of an acid sandy soil of low fertility and poor drainage. Much of this area went

from cut over land to replacement oak-aspen forest without an agricultural interim, and so during the 1880's and 1890's, much of it was pine slash in the process of returning to woodland. Nevertheless, some agricultural settlement was underway in the eastern sand lake plain during this period, as may be noted from comparison of Figure 7 with Figure 1. By 1899, a band of settlement extended eastward across the southern segment of this land type to the County line, along the Chippewa River. Roughly coincident with this area of settlement, is a strip, extending up to a little more than a mile on either side of the river, of loamy sands and sandy loams which are less acid and somewhat more fertile than the average soils on the sand lake plain.[1] Also, along the southern edge of this southern segment of sand lake plain, settlement may be seen in 1899 to be edging out from the silt lake plain into the sands. The northern part of this southern segment of sand lake plain remained very largely unsettled by 1899, as did the entire sand lake plain area lying in the extreme northeast of the County. Not only was settlement limited in the sand lake plain, but within the settled areas, the percentage of agricultural land remained much lower than in the dry sand plains of the interior and west. Fields, though sometimes rectangular, were also in

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[1]Kerr and Trull, pp. 1194-1197; and enclosed soil map of Isabella County.

some cases irregular as a result of the drainage situation. Even though the relief is very slight, the higher ground was sometimes well enough drained to produce a crop while the lower ground was not, and fields were laid out accordingly. Such fences as existed in the area were usually barbed wire. The pine stumps, where removed at all, were usually dynamited here, and so were fragmented in the removal process, rendering them unfit for fencing material.[1]

Little in the way of public drainage was undertaken in either segment of the sand lake plain before 1900. However, one open drain was established as early as 1894, serving the eastern settlements along the north side of the Chippewa river.

Domestic water supply was no very great problem in much of the sand lake plain. A dependable flow could often be obtained at depths of less than ten feet. Pits were dug and curbed with hemlock lumber (which endured well and did not flavor the water). Water was usually obtained by dipping. Pumps seem not to have been common here before the end of the period.

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[1]Interview with Henry Burgraff, Shepherd, Michigan, retired farmer, of Section 26, Chippewa Township, Isabella County, January 1968. The writer is indebted to Henry Burgraff for many details of the early agricultural settlement of the sand lake plain.

Broad Aspects of Spatial Diversity at the Turn of the Century

With respect to Category I elements of the landscape, agricultural land was most extensive in the till plain and silt lake plain land types, and here tilled land was largely cleared of all obstructions. Square fields added to the general impression of landscape rectagularity. Of the three sandy land types, the dry sand plains possessed the greater percentage of agricultural land. In all of the cut over pine area, pine stumps were still present in many of the tilled fields. Areas of cultivated land were often irregular in the sand hills and in the sand lake plain.

Nonagricultural lands of the till plain and silt lake plain consisted largely of dense hardwood forest but also of some stump land, usually under a good growth of native grasses or timothy hay. The nonagricultural lands of the sandy land types were most often desolate, fire blackened cut over lands. The character of any green growth present depended upon whether or how recently, the land had been fire ravaged.

Public function elements, which at this period consisted only of roads and drains, were best developed in the till plain and silt lake plain land types especially in the southeast. Drainage lines were almost nonexistent in the sandy lands, the roads were generally less improved, and the road pattern was less complete and sometimes less regular.

The density of farmsteads was greatest in the till plain and silt lake plain, and, in the southeast, these now showed little of their former pioneer character, with many of the buildings of that day still in use at present. Structures housing commercial and public functions were abundant. Pioneer buildings were still common in the farmsteads of the sandy lands, and buildings housing services were less in evidence.

Contrasts were greatest between the sand hills of the northwest and the silt lake plain of the southeast. The former was characterized by generally rough topography, incomplete and irregular road pattern, comparatively small acreages of inadequate crops in irregular clearings, burned over stump lands, a nearly complete lack of drainage lines, and a low density of farmsteads, some of which were still of the pioneer variety. The southeast was a region of flat to very slightly undulating terrain with a nearly complete rectangular road pattern, many drainage ditches, a checkerboard arrangement of productive fields and forested areas, and a high density of farmsteads most of which consisted of substantial frame buildings.

CHAPTER V

THE PERIOD OF MATURING AGRICULTURAL OCCUPANCE

As a result of the progressive occupation of potential agricultural lands from the beginning of settlement to the end of the nineteenth century, largely by peoples from outside the area, Isabella County experienced a rapid growth of population as well as a continued economic growth of agriculture. The period from the dawn of the twentieth century through World War I, discussed in this chapter, witnessed the exhaustion of unoccupied potential farmland and also the initial impact of this circumstance upon rural population and agricultural growth. However, the period was not only one of adjustment to maturing agricultural occupance but in addition, to accelerating twentieth century cultural change. It might be said that the opening era of development, in which rural landscape change through time resulted largely from conversion of wilderness to civilization, now drew to a close, and indications began to appear of the opening of the present era, in which change has come in response to a rapidly evolving culture that has altered the frame of reference in which the land is viewed.

The Maturing Agricultural Occupance

While it is true, as pointed out in the preceding chapter, that farmers had entered almost all areas of the County in force by the dawn of the twentieth century, the United States Census of Agriculture[1] does not show the maximum acreage of land in farms until 1920, indicating further expansion after 1900 within previously occupied sections. Expansion after 1900 was taking place largely in the sandy lands and in the much fragmented western area in general, as may be seen from careful comparison of Figures 7 (1899) and 8 (1915), with the more favorable till plain and silt lake plain having been for the most part previously taken. That gains of land in farms was now slowing is shown by the fact that land in farms rose by 114,602 acres from 1880 to 1900 as against 62,709 acres from 1900 to 1920, and that the rise during the decade, 1910 to 1920, was only 18,672 acres. In the decade following 1920, any new acreage in farm land was more than offset by losses, chiefly through abandonment of unproductive lands.

The total tilled area (not to be confused with total land in farms) seems to have reached its all time maximum at, or shortly after the close of the period under discussion. In approaching the matter of total cropland, the United

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[1]All statistics cited in this Chapter which are not otherwise documented are from the United States Census of Agriculture.

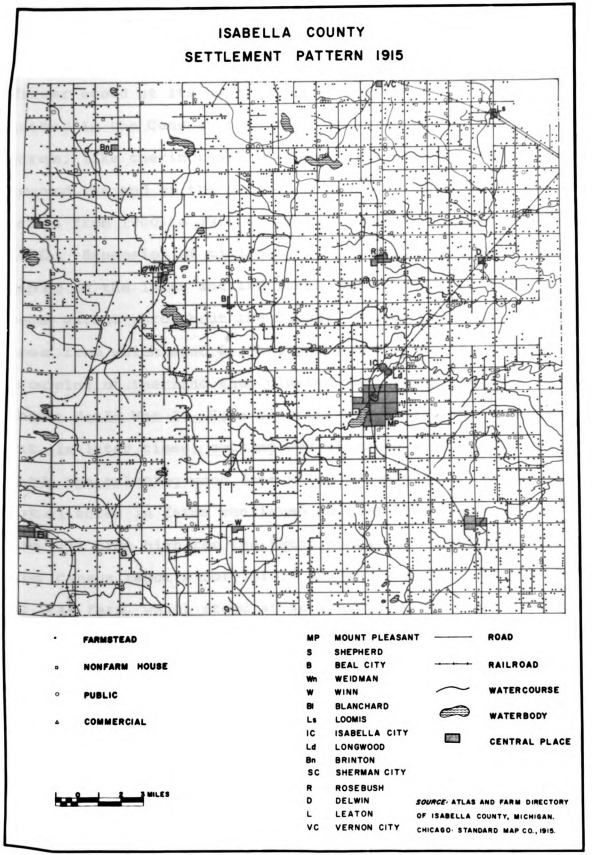
ISABELLA COUNTY
SETTLEMENT PATTERN 1915
FARMSTEAD
NONFARM HOUSE
PUBLIC
COMMERCIAL
MP MOUNT PLEASANT
S SHEPHERD
B BEAL CITY
Wn WEIDMAN
W WINN
Bl BLANCHARD
Ls LOOMIS
IC ISABELLA CITY
Ld LONGWOOD
Bn BRINTON
SC SHERMAN CITY
R ROSEBUSH
D DELWIN
L LEATON
VC VERNON CITY
ROAD
RAILROAD
WATERCOURSE
WATERBODY
CENTRAL PLACE
MILES
SOURCE: ATLAS AND FARM DIRECTORY OF ISABELLA COUNTY, MICHIGAN. CHICAGO: STANDARD MAP CO., 1915.

Figure 8

States Census of Agriculture reported "Improved land"[1] up to 1920 inclusive, and "cropland harvested" thereafter. The former stood at its high point in the Census of 1920 and the latter in the Census of 1924. The increase in tillable acres, like the increase in total land in farms, tapered off toward the end of the period, with the gain being 39,462 acres from 1900 to 1910 as against 18,688 acres from 1910 to 1920. Expansion of tillable or "improved" land was more rapid in the later settled areas, but tended to occur to some extent throughout the County. Clean cutting of any area from which wood was being harvested and the subsequent cropping of the land thus cleared was common practice up to about World War I. Some clearing was done after World War I, but in later times, cutting was often on a selective basis with the existing wood lots being perpetuated. Though the total acres in farms continued to rise throughout the period, the all time high for the total number of farms appeared in the Census reports for 1910. Evidently after 1910, the size of the farm, which stood at an average of 86.9 acres in 1910 and 95.1 acres in 1920, was now rising faster than the total land in farms.

The rural population of the County, which had risen steadily to the turn of the century, now dropped from 19,122

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[1]The term "Improved land" refers to land which may be tilled without further preparation processes, such as clearing or draining.

in 1900 to 17,791 in 1920, pointing to the involvement of fewer people in agriculture, even while spatial expansion, though much slowed, still continued. Several factors bearing on this circumstance may be noted. One, associated with maturing agricultural occupance, was that now with the improvement of the great majority of the County's productive agricultural land already accomplished, it was no longer possible to convert labor to capital through the process of upgrading cheap nonagricultural land to comparatively expensive agricultural land, and this reduced the work force which could be profitably employed on farms.

During this period, maturing agricultural occupance was conspicuously expressed in landscape. The 1920 Census of Agriculture reports 76.5 percent of the County's total acres to be in farms. Of the Category I elements of the rural landscape, agricultural land now became the dominant feature in all the more productive lands, and came close to reaching its maximum extent in most other areas.[1] With regard to nonagricultural land, clearing, as previously noted, continued through World War I and the wooded area was probably close to its minimum by the close of the period. Using United States Census of Agriculture statistics, it

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[1]Established through interview with many informants, and also based on the fact that 66.9 percent of all land in the County was reported as "Improved" in 1920, and that reports of "Cropland harvested" since that date do not indicate an increase of agricultural land.

appears that 10.9 percent of all land in farms in 1920 was woodland, but that by 1929, 17.4 percent of all land reported to be in farms was wooded, and that the percentage of wooded land in farms has never since fallen appreciably below this figure. No statistics exist concerning the area not incorporated in farms. Issac Fancher, writing in about 1910, was impressed with the extent of clearing at that time. He says:

> It seems incredible that a county 24 miles square and in 1860 covered with a dense growth of timber should in fifty years be using almost exclusively coal for heating purposes and gas for cooking but such is the case in this County. [Gas not yet having reached rural areas, it must be assumed that the writer was referring to Mt. Pleasant residents.][1]

However, partially clear nonagricultural land seems to have been fairly extensive. Much land which is now wooded as a result of a return to forest of harvested wood lots or land of low agricultural potential is known to have existed then as stumpland, probably often with scattered small trees too small to be of commercial value. Again using United States Census of Agriculture statistics, 22.2 percent of all land in farms in 1920 (more than twice the wooded area) was non-wooded unimproved land, much of which must have fallen into this category.

A feature which helped to impart a long settled aspect to the County during this period was the omnipresent orchards, whose trees were now large enough to be bearing

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[1]Fancher, p. 120.

well. According to United States Census reports for 1910, more bushels of apples were produced than of such minor field crops as rye, barley, buckwheat, or clover seed. A cider mill existed in every village.

Category I elements with a public function now came to play a more conspicuous role in the landscape complex. With settlement approaching its greatest areal extent, the local access road pattern attained close to its maximum development. Comparison of Figure 8 with a map showing the 1966 road pattern, such as Figure 12, indicates that while changes have occurred since 1915, there has been no drastic change in total mileage. With regard to condition, roads of the period might be said to occupy a middle position, with surfacing and grading being much further advanced than before the turn of the century but by no means as yet having reached ultimate development. Hard surfacing had not yet entered the picture at all.

Drainage lines now became a much more obvious feature of the landscape, with the majority of the County's public drains having been established between 1900 and 1920.[1] Much of the drainage work in progress at present consists of improvement, extension, or reestablishment of these earlier drains.

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[1]A greater number of drainage projects appear for the first time on the county tax assessment records during this period than in all of the rest of the County's history prior to 1966.

Also, during this period, a new public service element appeared on the scene, a function of both maturing agricultural occupance and advancing technology, in the form of the rural party line telephone. Omnipresent telephone lines in some parts of the County became a conspicuous feature of the landscape.

With farms reaching their peak number at about the middle of the period, Category II elements in the form of farmsteads now reached their maximum development, being well distributed in considerable density over nearly all of the area to which agricultural settlement ever extended (compare Figure 8 with Figure 41, Chapter VIII. With the slight drop in the number of farms reported in 1920, a surplus of farmsteads now began to develop, and vacant houses and unused farmsteads became more common in the older settled sections as a result of land consolidation, even as new farmsteads were still being established in the newly occupied areas. Public buildings, especially schools and churches constructed to serve the agricultural population, also stood near their maximum numbers.

Thus, by 1920, agriculture thoroughly dominated the County. With the great majority of the total land in farms, the landscape now consisted mainly of agricultural land, nonagricultural land incorporated in farms, transportation and drainage lines serving agriculture, and structures directly or indirectly associated with agriculture.

Cultural Change

Another factor in the drop in rural population during the opening decades of the twentieth century was a further decrease in need for farm labor, which arose as a result of advancing technology. This is a continuing process which had been going on to some degree since the earliest days of settlement, but about 1910, the point was passed where, for the country as a whole, a declining farm work force could feed a rising population.[1] Also, industrial employment in Michigan's expanding urban centers, especially in the new automotive industry, provided an inducement for some to leave the land, quite irregardless of the local labor situation.

Agricultural enterprises now began to reflect changes occurring in food processing and marketing procedures. More industrial and commercial processes were coming to intervene between the farmer and the consumer. Locally the establishment of creameries, a milk condensery, and a chickory processing plant[2] were cases in point.

The rising tempo of agricultural commercialization, so evident after World War I, started to appear even now as a result of the possibility of selling a greater volume and

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[1]John M. Brewster, "Farm Technological Advance and Total Population Growth," Journal of Farm Economics, XXVII (August 1945), 509.

[2]An establishment for processing the roots of the chickory plant for use as a coffee additive.

a greater range of agricultural products and with the proceeds, of buying a proliferating variety of consumer and agricultural production goods. The need and desire for cash income thus began to mount as capital came increasingly to replace labor and as the material standard of living rose. These conditions both permitted and demanded the expansion of farm enterprises.

Cultural change now entered more significantly than before into farmstead modification as some structures were altered or replaced in order to accommodate new or expanded enterprises or to incorporate technological innovations in process. Vogue also entered the picture of farmstead change. Toward the end of the period, new farm houses (relatively few in number) were usually something other than one of the predominant early types described previously. While the style of the new houses varied, they were often one and one-half story, square or oblong rectangular in form, and all under one "A" roof with the gables on the long sides of the oblong rectangular types instead of the short sides (Figure 9).

New and Changing Enterprises, Patterns, and Forms

From the standpoint of ownership, alienation of the land was virtually complete in most parts of the area long before 1900, but perhaps it might be said that the opening decades of the twentieth century witnessed the completion of

Figure 9. (right) House type in vogue by 1920.

Figure 10. (left) Barn with basement.

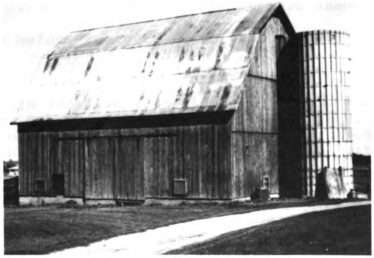

Figure 11. (right) Barn without basement.

alienation from the standpoint of use. Allowing livestock free range of most of the nonagricultural land, public or private, had been a common practice in nearly all newly settled portions of the area, but now with maturing settlement, intensity of land utilization nearly everywhere reached the point where private use of private land became a more jealously guarded right, and livestock were now confined to the owner's acreage. This meant a great increase in fencing. At the beginning of the period, the majority of fences seem to have been of the previously mentioned straight rail or barbed wire variety.[1] However, the material for rails was no longer readily available, and no doubt inclination to engage in such a laborious process as rail splitting also declined with the availability of ready-made materials. Woven wire, which appeared on the local scene in 1890's,[2] proved to be safer and more efficient than barbed wire alone, and this material, supported by cedar posts, became the predominant type of fence by the end of the period.

The cropping pattern now showed considerable change. The leading cash crop before the turn of the century was

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[1]Interviews with Ida Kyser, Section 16, Lincoln Township, Isabella County, February 1968, and William Hawkins, Section 26, Lincoln Township, Isabella County, January 1968, as well as several other informants named in connection with other information.

[2]Interview with Antony Tillman, merchant in Beal City, Isabella County, January 1968.

unquestionably wheat, but wheat began to fall behind in the relative sense during the opening decades of the twentieth century. In 1880, using United States Census of Agriculture figures, it appears that wheat occupied 9.8 percent of the improved land of the County, but only 7.8 percent in 1919. Dry edible beans, mostly navy beans, rose from a negligible acreage before 1900 (1,609 acres in 1899) to 17,992 acres in 1919, which was 882 acres above the wheat acreage for that year. The production of sugar beets which started in 1894[1] and stood at only 245 acres in 1899, reached 3,550 acres in 1919. The addition of these two crops may be seen to represent a considerable shift to cash cropping, especially considering the fact that they were both produced almost wholly for sale whereas wheat was sometimes used for livestock feed. By the close of the period the acreage of these crops very nearly approached that of corn and potatoes, which were previously the only significant intertilled crops in the area, and thus their introduction almost doubled the extent of this type of crop to be seen in the County. Alfalfa, which eventually became the overwhelming leader in forage crops was introduced during this time but reached only 629 acres in 1919 (the 1964 acreage was 33,020).

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[1]Fancher, p. 276.

Statistics indicate no considerable gain in crop yields over earlier times, and it may probably be assumed that standing crops would have attained about the same degree of development as formerly. Chemical fertilizers were just coming into use. In 1919, 27 farms reported an aggregate purchase valued at $1,829.00. Today, many individual farms use more than that amount.

Dairying may be said to have established itself as a feasible cash income enterprise during this period, although no great amount of specialization developed. Creameries were established at several towns in the area at about the turn of the century, and in 1908, a condensery plant came to Mt. Pleasant.[1] A dependable outlet for dairy products was thus created, and dairying took on an expanded commercial function. Farmers welcomed this source of steady income and many came to depend upon it to meet household expenses, but only a few during this period came to regard dairying as their primary enterprise.

Labor and markets were still limiting factors in dairying. The coming of the condensery gave a considerable impetus to commercial dairying, providing as it did the first significant outlet for fluid milk, a product which could be handled with much less labor than cream, butter, or cheese. However, cows still had to be milked by hand, a decidedly

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[1]Fancher, p. 277.

laborious process, and few individuals had the stamina or inclination to milk more than five or six, preferably fewer. Also fluid milk had to be delivered to the plant daily, and until the use of motor trucks and the existence of all-weather roads, the condensery's patronage area was severely limited, by comparison with later times. The creameries, on the other hand, existed in wide spread locations, delivery was necessary only once or twice a week, and the volume of cream was only approximately 10 percent of that of milk, so probably very few farms were so remote as to be unable to sell cream. However, in the case of cream, the labor requirement was much greater, and the farmer needed to have a profitable outlet for skimmed milk, usually provided by calves being raised for sale or by swine. The United States Census of Agriculture reports more swine in the county in 1910 than at any other period, and swine shelters of some type were to be seen on most farms. Considering the fact that very few farms were entirely without cows, but that the Census of 1920 reports the total number to be only 11,581 or an average of 3.48 animals per farm, the lack of any considerable number of large dairy herds becomes apparent.

The Census of Agriculture reports a peak horse population for the county of 11,401 in 1920, having risen from 8,777 in 1900, reflecting the expansion of agricultural land during the period. The number of horses began to drop off

shortly after World War I with the increasing use of the automobile.

Few farms were without poultry and ranging flocks were a common sight. Flocks were very small by today's standards (perhaps 50 to 150 birds) but they required shelter, and a small poultry house was a feature of nearly every farmstead.

Flocks of sheep were more in evidence in the County at this time than later, with sheep numbers in 1920 being approximately six times that of 1964. Sheep were apparently often employed to utilize many cut over areas which have since been allowed to return to forest.

Several changes in barns were characteristic of the period. Many barns in the longer settled parts of the County were fifty to sixty years old by World War I and were sometimes outworn, outmoded, out-grown, or perhaps all three. When these were replaced, it was usually by larger structures to accommodate expanding operations. The type of construction also changed. New barns were now often of the basement type shown in Figure 10, with livestock quarters underneath the entire loft instead of only a part as per the example in Figure 11, which does not have a basement. The basement style provided much more room for both livestock and fodder storage per square foot of building area. The roof of the barn now changed from the "A" type shown in Figure 6 to the round or gambrel styles shown in Figure 10

and Figure 11. This roof modification not only allowed more fodder storage, but also made for more efficient operation of horse powered unloading equipment, which was now coming into general use. The older barns were framed with hand hewn square timbers, usually of pine. Two or more timbers normally spanned the interior to prevent sidewise spreading or collapse. Barns of this period, however, were often framed of sawn hardwood planks (the material then locally available), with the planks being used to produce a truss style framing which eliminated the cross beams and so left the interior clear, greatly facilitating the operation of mechanical unloading equipment.

Many farmers building barns at this time, attempted to provide space not only for hay storage but also for grain, beans, or clover seed prior to threshing in order to eliminate weather risk while waiting for the custom threshing machine. Corn fodder was also often stored in the barn before and after husking. Barn space was sometimes used for storage of straw or bean pods to be used for feed or bedding. Sometimes more hay was stored than was required to feed the livestock on the farm, and bailed hay was one of the cash crops shipped out of the area, though to be sure a minor one. Barns of the period thus sometimes had a function in cash cropping as well as in livestock enterprises.

Barns built prior to World War I usually provided stalls for six to eight horses and seldom more than a dozen

cows. If the barn were of the basement type, there were also pens for beef cattle, young diary stock, sheep, or even swine. If the barns were not of this type, shelter for these animals had to be otherwise provided and sheds of various kinds for this purpose more often accompanied barns without basements. Older barns were now sometimes raised and converted to basement style, a practice which became more prevalent after World War I.

During the latter part of the period, when the advantages of selling fluid milk began to become clear, a few new barns constructed on farms within the patronage area of the condensery at Mt. Pleasant afforded space for more cows. Older structures were in some cases remodeled, with pen space converted to cow stables, and the conversion of barns to basement type was sometimes for the purpose of providing for more dairy cattle.

In the case of new construction or remodeling, provision might now be made for manure removal by means of overhead carriers or direct loading onto field spreaders, but this did not become general until later. Throughout this period, manure from both horse and cow stables was most often moved on wheel barrows, carried, or even thrown out windows to piles just outside the stables, and during the winter the manure pile was a prominent feature of the farmyard.

A farmstead innovation and conspicuous landscape feature which made its appearance during this period was the silo.[1] Its use increased with the modest rise of dairying during the period, but did not become general until after World War I.

A highly conspicuous farmstead feature which did come into common use during the period was the windmill,[2] used for pumping water. With virtually all livestock now confined to the owner's property, the farmer was forced in most cases to provide water from wells, and the windmill served the purpose reasonably well until the advent of rural electrification. The windmill was also sometimes used to provide running water for the farm residence.

The Landscape at the Close of the Period

The degree of homogeneity with respect to general clearing and agricultural occupance of the land, mentioned in the preceeding chapter as having existed at the turn of the century, had now advanced somewhat. However as was then the case, much spatial diversity still existed, and some of the differences which are evident at present now began to appear.

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[1] Fancher, p. 276.

[2] Tillman, interview.

The Till Plain and Silt Lake Plain

In most of the till plain and silt lake plain area of the County, clearing had now progressed unquestionably very close to its maximum extent. Some wood lots were removed after this time but the return of wet spots to woodland and the regrowth of some cut over wood lots probably compensated for this, in the aggregate. In general it might be said that agricultural land, which here never lagged far behind cleared land, now stood at its peak development in both land types, with the only portions noticeably below average being small areas of till plain in the southwest and also the eastern part of the northern silt lake plain.

The great majority of the public drainage projects carried out during this period were located in the till plain and silt lake plain, not only for the reason that drainage was needed, but also because the value of the land would bear the cost. Figure 12 shows Isabella County drains as they exist today. Apparently, as stated earlier, the majority of these were established before 1920, and comparison of Figure 12 with Figure 1 shows the concentration of projects in the till plain and silt lake plain. Many of these projects involved the straightening and deepening of natural water courses, and by the end of the period few of the smaller streams in these remained unmodified. Some drains shown as tile on Figure 12 were then open, having since been converted to tile to eliminate the nuisance of

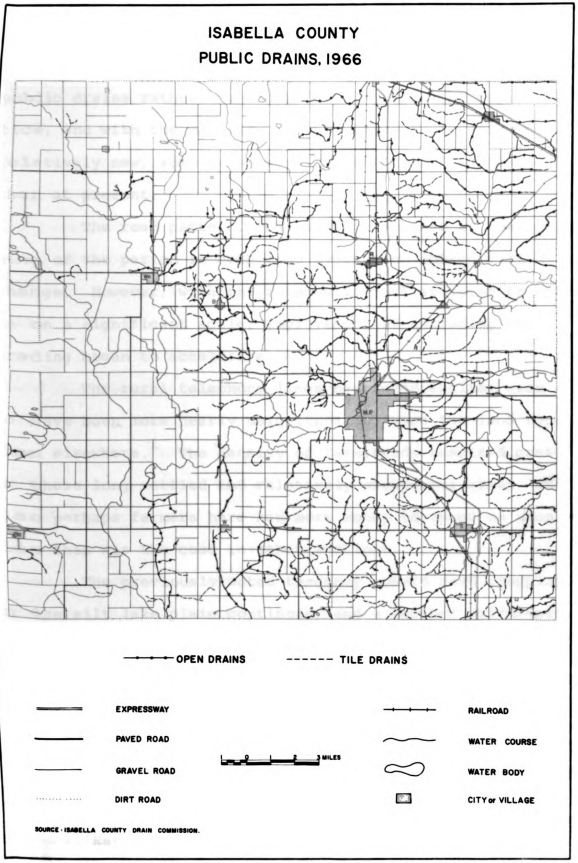
ISABELLA COUNTY
PUBLIC DRAINS, 1966
OPEN DRAINS
TILE DRAINS
EXPRESSWAY
PAVED ROAD
GRAVEL ROAD
DIRT ROAD
0
2
3 MILES
RAILROAD
WATER COURSE
WATER BODY
CITY or VILLAGE
SOURCE - ISABELLA COUNTY DRAIN COMMISSION.

Figure 12

the open ditch, both from the standpoint of crossing and vegetative filling. Tiling by farmers to carry water to the public drains rather than open ditching was then common practice, and with the majority of these tile drains then being relatively new, some areas were better drained at that time than at present.

The road pattern, essentially complete at the beginning of the period in both land types, now showed little change. However, with the automobile just starting to come in on a significant scale, improvement of surfacing and grading began to accelerate.

The rural telephone lines mentioned earlier seem to have been more nearly ubiquitous in these two land types than elsewhere.[1] The density of farmsteads remained greatest in these long settled and relatively prosperous areas, and also perhaps farmers here had more money to spend on amenities than was the case in other sections.

The previously noted tendency toward cash cropping in the silt lake plain continued, and a further difference began to develop between farmsteads in this land type and those of the rest of the County. Not only were barns often larger outside the silt lake plain where there was greater general dependence on livestock, but the new types mentioned earlier in the chapter, better adapted to rising numbers of

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[1]Established by interview with numerous informants.

livestock, appeared more frequently in the other land types. This was especially true in the till plain, where the reasonably productive soils would support more animals per acre than elsewhere outside the silt lake plain. The portion of the till plain where the barns were consistently the largest and of the newest types was the German settlement area in Nottawa Township, discussed in Chapter III. These people were proving themselves to be thrifty farmers interested in raising livestock and in erecting adequate and even impressive facilities.

Another point of difference which now developed was that the windmill which became such a common feature of farmsteads during this period, was less frequently seen in the silt lake plain than in other prosperous farming areas of the County. This was probably also related to lower livestock numbers there.

Both the till plain and the silt lake plain lands seem to have been about as thoroughly fenced at this time as they were ever to become. In general, the till plain continued to be somewhat more completely fenced than the lake plain.

Pioneer buildings were now little more than a memory in most of the silt lake plain and till plain areas of the southeast. A few still remained in the northern and western till plain and in the eastern portion of the northern silt lake plain, but few were occupied.

The general aspect of the agricultural occupance of the comparatively small area of clay loam hill lands continued to parallel that of the till plain. However, the percentage of agricultural land was now probably lagging behind that of the till plain in general, with the existence of some steep slopes limiting the possibilities of the further expansion of improved land during this period.

The Sandy Lands

At the end of the period, the contrast between the clay lands on the one hand and the sandy lands on the other, though perhaps less striking than at the turn of the century, nevertheless remained strong, especially with respect to Category I elements of the landscape. Agricultural land in the sandy land types remained less extensive, less productive, and continued to exist in plots less regular in shape. However, stump removal had progressed, and now a much smaller acreage than formerly was being tilled amid the pine stumps, though the process still remained commonplace.

Within the sand lands, the percentage of agricultural land remained lowest in the sand lake plain. Here it is reported that no more than 15 to 20 percent of the land was ever cropped,[1] that the incidence of unpaid taxes was high,[2]

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[1]Joseph Patrick Carey, "The Agricultural Geography of the Mt. Pleasant, Michigan, Area" (unpublished Master's dissertation, Department of Geography, University of Chicago, 1932), p. 57.

[2]Carey, p. 57.

and that many parcels of land were transferred many times.[1] There were areas in the sand lake plain where agriculture was perhaps as feasible as elsewhere in the sandy land types, but because of the previously discussed problems, overall productivity was lower here, crop yields were often very poor, and livestock numbers were low. While there was considerable summer pasture (though often of very poor quality in late summer), the production of forage for winter feed was very difficult. The sand lake plain did claim one specialty crop during this period. Much of the chickory which supplied the drying plant at Mt. Pleasant was raised here[2] especially in the zone of transition to the silt lake plain.

During this period, agriculture remained at least tenable in the more fertile areas of the dry sand plains and the sand hills with the former continuing to claim a greater proportion of agricultural land. The mainstay crops were wheat, oats, rye, potatoes, and hay. Rye and potatoes, in contrast to the situation in the clay lands, were significant cash crops. Beans were also sometimes raised.

Cultivated fields were probably as thoroughly fenced in the sand hills or dry sand plains as in the till plain, but rods of fence per acre averaged lower, because comparatively large blocks of nonagricultural land were pastured

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[1]Carey, p. 55.

[2]Carey, p. 102.

en masse without division into fields. Some woven wire was now being used, but many fences remained as in the previous period, comprised of stones, stumps, barbed wire, or some combination of these. The smallest amount of fencing was done in the sand lake plain, because of fewer farms, less agricultural land per farm, and overall low numbers of livestock. Most of the fence that existed here was barbed wire.

Nonagricultural land in the sandy lands was now mainly of two types; either stump lands overgrown with a sparce cover of bracken, blue grass, sumac, and scattered small oak and aspen trees, or stumplands being taken over by something more akin to a forest, consisting predominately of small oak and aspen trees. The former seems to have been more prevalent than the latter in the sand hills and the dry sand plains, while the reverse was true of the sand lake plain, the contrast being no doubt at least partially a result of heavier grazing pressure in the sand hills and dry sand plains.

Careful comparison of Figures 7 (1899) and 8 (1915) shows some extension of the road pattern in the sandy areas, though the gain is not great, and voids remained. Many roads were still sand trails.

It may be seen from Figure 12 that few public drains have ever been established in the sandy land types. There is little need of drainage in the dry sands, and the tax base will not bear the cost in the wet sands. It is true

that several open ditches may be noted on Figure 12 in the wet sand lake plain, but these were established near the beginning of the period, and subsequent development has not warranted further construction.

Referring to Figures 8 and 1, it may be noted that there is still, within the sandy land types, great variation in the density of Category II elements, which are chiefly farmsteads, and that in general, these elements are still less abundant here than in the heavy land types. There are also at the close of the period, a considerable variation in the type and condition of farmsteads to be found in these lands. In both the sand hills and dry sand plains, many sets of farm buildings compared favorably with their counterparts elsewhere, partially as a result of the occurrence of areas of better soils, but also no doubt because of great diligence, good management on the part of the farmer, or perhaps adequate financing when the land was acquired. Sometimes, however, buildings tended to be less pretentious and less well maintained than in the heavier lands, and sometimes the pioneer buildings were never replaced. A few of the better farmsteads existed in the sand lake plain but on the whole shacks and sheds tended to replace houses and barns, and hunting dogs and dog houses were more common than dairy herds and silos.[1] Windmills were common in the sand

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[1]Carey, p. 18.

hills and dry sand plains, but there seems to have been very few in the sand lake plain. Probably this is a result both of low numbers of livestock and easy availability of water.

The Muck and Peat Lands

Some of the smaller voids which appear in Figure 8 represent the existence of muck and peat lands, though with these areas being in the main small and highly irregular, much of this land type was included in farms because of its interpenetration with more tractable agricultural land, and so does not show up on the settlement maps. Virtually all of these lowlands had been cut over before World War I and were now beginning to return to forest, were being pastured, or in some few instances were being cultivated. The greater proportion eventually returned to forest.

Macroaspects

Rural landscape change during the first two decades of the twentieth century was related either to maturing agricultural occupance or to developing American culture, or in some cases to both. Structures directly and indirectly associated with agriculture approached their maximum density and spatial dispersion, even becoming surplus in some long settled areas. New agricultural enterprises were introduced, old enterprises were expanded, processes changed with advancing technology, and these factors were all reflected in farmstead form. Agricultural land now approached its all time

high point, as a result both of spatial expansion and further development within previously settled areas. Wooded nonagricultural land very probably reached its minimum, with most of the County's once omnipresent forests having been by this time removed, either for utilization of the wood or to make way for agriculture. Partially clear nonagricultural land, some of which was starting to return to forest, now far exceeded the wooded area on farms, and this was probably also true of much of the small percentage of the County not at this time included in farms.

CHAPTER VI

THE RELATIONSHIP OF TWENTIETH CENTURY CULTURAL CHANGE TO THE DEVELOPMENT OF THE PRESENT LANDSCAPE

The notion is expressed in the introductory chapter of this study, that a cultural landscape is the tangible evidence of man's relationship to his physical environment, and that this relationship changes, both through time as man's culturally conditioned perception of the character of the natural environment changes and through space as either the physical environment or man's perception of that environment changes. It is the purpose of this chapter to discuss the general relationship of the accelerating cultural change, which has been operative in the United States since World War I, to recent landscape change through time in Isabella County.

Innovations, both material and social, have hastened the development of trends already operative and have initiated new ones. The expanding urbanization of southeastern Michigan has had its effect on the orientation of agriculture. The general American tendency toward specialization and the application of inanimate power and improved techniques

have wrought great changes in both agricultural enterprises and processes, especially the latter. The industrialization upon which urbanization is largely based and the recent dispersion of industry to scattered small centers, along with the development of motor transport and the high speed all weather highway have had a profound influence on the mode and pattern of rural occupance. The extension of amenities which formerly were exclusively urban, such as telephone, electric, and gas service, to the rural areas has helped to bring about far reaching changes. Recent reorganization of the school system has exerted influence toward change. Increasing general affluence has had considerable bearing on the farmer's attitude toward his work. A degree of social reorientation has resulted from a changing relationship between the rural resident and his neighbor, brought about by the operation of the above factors. All of these elements have been expressed to some degree in landscape, and the whole period since World War I, and especially since World War II, has been one of accelerating landscape change through time and increasing diversity through space.

Trends in Agriculture

Inasmuch as the human occupance of rural Isabella County was almost entirely of an agricultural nature at the

beginning of the recent period,[1] those cultural changes which have affected the course of agricultural development are highly significant. Accordingly, a general discussion of recent trends in agriculture is attempted here.

Gains in Productivity of Man Power and Land

Throughout the United States, the most basic and obvious change relating to agriculture has been the tremendous gain in productivity per man and per acre, which has resulted from technological advance. As one of many writer's commenting on some aspect of this development, John M. Brewster of the Bureau of Agricultural Economics commenting in an article in 1945 said:

> During the last quarter century, the relationship of American agriculture to the total economy has been undergoing revolutionary change, the full nature of which is just beginning to be comprehended. The rate of gain of productivity of farm workers overtook the rate of population growth so that the age old pressure of population upon the food supply changed skins and became the pressure of food supply upon the population.[2]

As pointed out in the preceeding chapter, the point at which the rate of productivity gain surpassed the rate of population growth occurred at about 1910, but the disparity between the two rates increased much more rapidly after

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[1]The time span from World War I to 1966 is termed the "recent period" as a matter of convenience.

[2]Brewster, p. 509.

World War I and especially after World War II. According to an index of the productivity of farm workers[1] presented by John Brewster, the productivity gain in the twenty years from 1920 to 1940 was 54.9 percent, as compared to 82.0 percent for the fifty years from 1870 to 1920. Not only was the gain from 1920 to 1940 thus much more rapid but also much more critical, because productivity was now rising more rapidly than population and hence potentially more rapidly than the outlet for agricultural products. With regard to the recently accelerating increase in the rate of gain, an index of output per man hour, published by the Bureau of Agricultural Statistics,[2] shows for the Lake States an increase of 264.1 percent from 1940 to 1965. In 1960, in some instances, corn was being produced with less than four hours of labor per acre.[3] It took much more time than that for a man to hand husk an acre of corn before World War I, when the yield per acre was less than one-half of what it was in 1960. When the sickle was used for harvesting grain, fifty-six hours were required to produce an acre of wheat.

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[1]Brewster, p. 513.

[2]United States Department of Agriculture, Agricultural Statistics, 1962 (Washington, D.C.: Government Printing Office, 1963), p. 543; and Agricultural Statistics, 1966 (Washington, D.C.: Government Printing Office, 1967), p. 461.

[3]United States Department of Agriculture, Year Book of Agriculture, 1960 (Washington, D.C.: Government Printing Office, 1960), p. 169.

In 1880, in the days of the horse drawn reaper, this could be done in 20 hours, and now two hours will do it.[1] Technological advances in agriculture has occurred in three main areas: mechanics, agronomics, and animal husbandry.

Advances in mechanization of processes.--It is mechanical advances which have had the greatest effect on productivity per man hour.[2] While horse drawn tillage and harvesting machines were in general use in the County long before the beginning of the post World War I period, the capacity of these was normally limited to the power two or three horses could produce. Steam power was used in some processes, but mostly only in those in which the machines could remain stationary. Many operations such as harvesting sugar beets, loading hay, loading manure, and handling bound grain or corn, remained entirely or partially unmechanized.

After World War I, the internal combustion engine began to replace the horse as a source of power, and according to the United States Census of Agriculture, the number of horses in Isabella County dropped from 11,401 in 1920 to 6,469 in 1930. The decline during this decade was due in a greater degree to the replacement of the horse on the road by the automobile and the motor truck than to replacement in

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[1]Edward Higbee, Farms and Farmers in an Urban Age (New York: The Twentieth Century Fund, 1963), p. 9.

[2]Lawrence A. Hoffman, Economic Geography (New York: Ronald Press Co., 1965), p. 123.

the field by the tractor which had not yet come into extensive use by 1930.[1]

Productivity per man hour advanced greatly when tractors did come into near universal use in the middle 1930's with the introduction of the row crop tractor with pneumatic tires, power take off, and power implement controls. This was a much more versatile machine than older tractors, capable of completely replacing the horse, and along with it came a whole new line of implements with pneumatic tires as well as power driven machines, such as one-man grain combines and corn pickers. These innovations not only eliminated many of the remaining hand tasks, thus greatly augmenting the capacity of the farmer to accomplish work, but they also virtually eliminated draft horses[2] and the labor required to care for them.

At present, the increasing speed and capacity of all types of field equipment continues to accelerate the rate of rise in productivity per man hour, and so also does the multiplicity of electrically powered machines which speed virtually all operations carried on at the farmstead. Electric power first became significant with the extension of power lines to the rural areas in the late 1930's.

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[1]Carey, p. 130.

[2]The 1954 Census of Agriculture reports only 467 horses in Isabella County. Very probably none of these were used in agriculture.

Agronomical advance.--Improved farming practices, improved strains of plants and the rising use of commercial fertilizers have greatly increased crop yields, a factor which has increased the productivity of both land and labor. Table 1, which follows, shows yield increases for the principal field crops during the recent period, according to United States Census data. While the area of cropland harvested has dropped during the period, the decline has not been great (11.1 percent since 1924, the first Census in which cropland harvested was reported, though the 1924 and 1964 figures may not be absolutely comparable for reasons

Table 1. Crop yields in Isabella County, 1919-1964

Crop	1919	1929	1939	1949	1959	1964	1919-64 Gain
Corn (bu.)	21.9*	23.7	37.2	51.1	53.3	68.2	211.4
Alfalfa (tons)	1.47	1.54	1.34	1.39	1.97	2.34	59.1
Wheat (bu.)	13.5	17.8	23.4	26.9	31.4	40.0	196.2
Beans (cwt.)	9.1	10.0	10.2	11.2	13.1	14.2	63.7
Oats (bu.)	24.2	27.1	36.8	34.2	39.3	46.0	90.0
Soy beans				16.9	24.1	22.4	32.5**

*Figure approximately converted from ear corn to shelled corn by dividing by 2.

**Percentage of gain 1949-1964.

that will be noted later). Inasmuch as this apparent acreage loss is much less than the percentage of gain of any of the major field crops shown in Table 1, and also inasmuch as there was a gain of 152.9 percent in the acreage of corn, the crop which shows the greatest increase in yield, it must be assumed that total crop production has increased during the recent period.

Advances in animal husbandry.--Hens lay more eggs, swine and cattle gain weight faster, and cows give more milk now than at the beginning of the period. The United States Census of Agriculture reports almost twice as many eggs with approximately one-half of the total chicken population in Isabella County in 1964 as compared with 1920. Hogs are ready for market at four to six months of age instead of one to two years, and according to the United States Census statistics, Isabella County cows produced an average of 3,810 pounds of milk in 1919, while in 1964, 9,020 pounds of milk per cow was sold, with total production slightly exceeding sales as some milk was still being consumed on the farm. Records of the Dairy Herd Improvement Association for the County show a rise from 12,701 pounds per cow in 1962 to 13,368 pounds in 1966, or 667 pounds per cow in four years.

The Decreasing Number of Farmers and the Increasing Size of the Farm

Overall production gains have been achieved in the County with an ever shrinking work force. The number of Census Farms dropped from 3,333 in 1920 to 1,570 in 1964, and even this does not tell the full story of the declining work force. Farming in 1920 was usually a full time business, but recently work off the farm has become common among those listed in the census reports as farmers, and a 1966 field check indicated only 582 farmers who had essentially no other occupation. Also to be considered is the fact that in 1966, many of the "full time" operators are elderly individuals coasting toward full retirement, and while they may be involved in nothing but agriculture, their farming programs are often minimal.

With regard to increasing size of the farm operation, technological advance has not only permitted it but has also required it. Recent high levels of production have tended to depress farm product prices, while costs have continued to mount. Significant expense items such as real estate taxes, machinery, hired labor, and seed, which loomed large even at the beginning of the period, now take a bigger bite of gross income, and new costs have entered the scene. The use of inanimate power requires a big cash outlay for fuel, and 1964 purchases took 4.9 percent of the total sales dollar in Isabella County. In 1964, farmers bought fertilizers to the tune of 6.1 percent of the total sales dollar

while purchases in 1919 amounted to .02 percent of total sales. Purchases of commercial feeds and concentrates in 1964 came to 5.0 percent of the total sales figure as against a negligible figure in 1919. The margin of profit has continued to drop, requiring larger operations just to hold former income levels.

To illustrate the trend, Michigan farmers in the years 1949 through 1953 received thirty cents net income for every $1.00 invested, but during the period 1959 through 1963, this net had dropped to eighteen cents. Thus, during the former period a net income of $3,000 required total sales of $10,000 while during the later period this same net required total sales of $16,667.[1] Also to be considered in the net income picture is the fact that $3,000 would buy less in 1959 than in 1949.[2]

Going hand in hand with rising costs as a factor in enlarging the farm operation has been mounting general

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[1]Michigan State University Agricultural Experiment Station and Cooperative Extension Service, "Economic Prospects of Farmers," Project '80, Rural Michigan Now and in 1980, Research report 47 (East Lansing: Michigan State University Press, 1966), p. 5.

[2]Through use of an index of the purchasing power of the dollar relative to all wholesale items, supplied by the Bureau of Labor Statistics, it appears that the 1959 dollar would buy 18.3 percent less than the 1949 dollar. See Paul Biederman (ed.), The Economic Almanac, 1967-1968 Business Fact Book (New York: The National Industrial Conference Board, 1967), p. 98.

affluence. Due to the present high level of commercialization the farmer now derives little from the land other than cash income, and he wants enough of that to put his living standard on something like a par with that of his urban relatives or acquaintances or perhaps his neighbor who has a job in town. He seldom achieves this goal, as attested by the United States Census of Agriculture of 1964 in which only 475 of the County's 1570 farmers reported sales of as much as $20,000 indicating net income in the vicinity of $3,600 or higher, but he often continues to expand his operation in the attempt.

However, it is now becoming increasingly likely that he will use his increased working capacity, not to farm more land, but to take on a job in town himself in addition to farming. The desire of Isabella County farm families to supplement their farm income becomes even more understandable when it is noted that the 1964 Census shows that 985 farms reported gross sales of less than $10,000 indicating net earnings probably below $1,800 in most cases. Often, not only does the farmer look for off the farm work, but so also does his wife, his sons, and his daughters. In 1964, 1,281 farm households reported a total nonfarm income of $5,464,815. Total sales of farm products in 1964 amounted to $14,753,285. Using the eighteen cents per $1.00 average net figure for Michigan noted previously, the net farm income would have been only $2,623,191. Thus, it would

appear that in 1964, farm families received more than two-thirds of their total net income from nonfarm sources.

If the off the farm work, which the farmer takes, proves satisfactory, he is likely to quit farming altogether, and the land he formerly tilled may go to increase the size of another operation or perhaps become nonagricultural land, depending largely on its productivity, for only land which produces well can return a profit above soaring production costs, and so entice some other farmer to take it over. Thus, the general affluence factor operates directly both to increase the size of the farm in the County and to decrease the number of farmers, and also has a bearing on the matter of which lands shall be tilled and which shall not.

Specialization

While today's farmer spreads his efforts over more land, he is usually involved with fewer enterprises. Specialization results from such factors as changing marketing structure, the high cost of equipping for each enterprise, and the high degree of concentration now demanded for the successful management of the relatively sophisticated processes now associated with each line of endeavor. The general farm has become an anachronism. Dairying is a case in point. Throughout the first half of the present period, most of the County's production went to dairy manufacturing plants. No great expense or sophistication of operation was involved in selling through these outlets, and in 1940, 2,344

of 2,619 farms reported dairy cows. Now, however, the great majority of milk produced in the county goes as fluid milk to the Detroit market, a circumstance which has come about through the rising demand for fluid milk in the expanding urban center and the competence of technological development to deliver it. Production for the fluid market demands finesse, an expensive plant, and a large operation to support it. In 1964, only 687 farms of a total of 1,570 reported dairy cows, and the Isabella County Cooperative Extension Service reports the number to be still dropping rapidly. Milk is being produced by fewer and fewer increasingly efficient cows on fewer and fewer farms.

Poultry raising in the United States has gone big, sophisticated, and even more specialized than dairying. "Hen houses" may now house upwards of 100,000 layers and may resemble multistory apartment houses. Disease, diet, breeding, and environment are carefully controlled. A small laying flock now runs from 12,000 to 15,000 birds, and the professional services necessary to high production may be contracted from one of the large feed companies in a so called "integrated" operation.[1] A flock of a hundred or two laying hens, usually turned loose to roam the farm, was almost universal in Isabella County in the 1920's, but in 1964 even

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[1]Ira Wolfort, "Look What They've Done to Chickens," American Agriculturalist and the Rural New Yorker, May 1967, p. 22.

though egg production was about double that of 1919, only 167 farms reported chickens, and as the few remaining flocks are usually confined, a roving chicken has become an unusual sight.

Other enterprises, such as beef, swine, potatoes, cucumbers, or green beans are also sometimes very much specialized, and these, like poultry may be, to varying degrees, integrated with large feed or processing companies. Specialization may even extend to the production of such staple field crops as dry beans or corn.

Commercialization

The commercialization of agriculture has advanced greatly during the recent period. Carey, writing in 1932, says in effect that at that time nearly every farmer produced his own fruit, vegetables, potatoes, and usually meats.[1] Dairy and poultry products can be added to the list. Also, during the early part of the period some farmers still heated their houses entirely with wood from the farm wood lot, and many more still used fuel from this source in a kitchen range for cooking and for heating that portion of the house. Today, few traces of subsistence function remain in most farming operations. Fruits, vegetables, potatoes, meats, dairy products, and poultry products come from the

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[1]Carey, p. 102.

super market, houses are heated with oil or gas, and cooking is done with gas or electricity.

Before the middle of the recent period, most of the formerly prized apple orchards ceased to be functional. Insects and diseases became such a problem that an apple crop was impossible without diligent spraying. The orchards were not of feasible commercial size and spraying was too expensive and time consuming just to produce apples for home consumption, especially since apples from other areas were now available in good condition and at a reasonable price. Many orchards have been removed, and those which remain, do so by virtue of sentiment or neglect. Farm vegetable gardens, once a feature of every farmstead, are shrinking in size or disappearing. Comparison of air photos of 1938 and 1965 often shows space occupied by farmsteads to be shrinking, partially as a result of vanishing orchards and vegetable gardens.

Advancing commercialization seems to be partially the result of changing attitudes. There is no doubt that agriculture was once considered by most farmers as a way of life rather than strictly as a business, but such is no longer the case. Farming in Isabella County is now regarded, at least by those who account for most of the product, as strictly a business enterprise requiring the same cash income as any other to insure the operator a comparable standard of living.

Illustrative of the changing attitude in general is that toward the family cow. From the early days to a point

well past World War I, any farmer, or other rural resident, whether or not he was in the dairy business in a commercial way, was considered improvident if he did not have a cow to provide his family's dairy needs. Now, however, any farmer not in the dairy business in a big enough way to have a monthly milk check of well over a thousand dollars is considered unenlightened to tie himself to the farmstead seven days a week with dairy cows. Fewer and fewer small herds or individual cows are now to be seen.

Also in connection with changing attitude, it may be noted that something seems to have happened to pride of ownership. Name of owners on newly painted barns, once very prevalent, are now rare except in Nottawa Township with its high proportion of people of German ancestry who are still agriculturally oriented. Today, farmsteads connected with going operations are more and more likely to be strictly functional with little attention being given to neatness or attractiveness. Some, especially those of farmers trying to get by until retirement age without too much modification of the old plant, are downright dilapidated. Today, a well maintained farmstead is likely to be the property of an exfarmer, who commutes to a good job, has some weekend and vacation time, and who perhaps wants to keep his place of residence on a par with that of his neighbor in the new non-farm house. More and more, the farmer who was once proud to advertise himself as the sole owner of an independent private

enterprise is just a number in a rural block as his urban cousin is a number in a city block.

Rising commercialization is also necessarily very much related to advancing technology. For example, the elimination of the horse as the source of power released possibly as much as 50,000 acres in the County from the production of feed for power to the production of commodities directly or indirectly for sale,[1] while fuel for the replacement power must be purchased. Also, today's commercial fertilizers, improved seeds, and sophisticated machines are expensive in terms of money which must be obtained through the sale of products.

Fragmentation of Operation

Fragmentation of operation has become a feature of agriculture today in Isabella County. The increasing size of the farm has been noted. This is sometimes accomplished by purchase or rental of adjoining land, but more often by purchase or rental of land discontinuous with that on which the home farmstead is situated. This necessitates a great deal of "road farming" as witnessed by the considerable

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[1]This follows from a statement by Brewster that a drop in horse and mule population of the United States of 11,000,000 released 50,000,000 acres of land from feed production, Brewster, p. 519; and the fact that, according to the United States Census of Agriculture, the horse population of Isabella County dropped approximately 11,000 from 1920 to 1955.

numbers of tractors and self propelled machines on country roads during the farming season.

Changing Crop Structure

Many farmers who now hold jobs off the farm have found that animal husbandry, especially dairying, does not fit well into their routines. They have therefore dropped the livestock operation and have gone to cash cropping. If the land involved lies in the silt lake plain or one of the more favorable areas of the till plain, the farmer may already have been involved largely with cash cropping, but in cases where a livestock operation has been dropped and these are many, there has been a shift away from hay and oats, which are feed crops with comparatively low cash value, and toward beans, corn, wheat, or in some few cases, soy beans or sugar beets, which are more feasible cash crops. During the decade, 1954 to 1964, the corn crop in Isabella County rose by 14,701 acres, and the bean crop by 4,556 acres, while the oat crop dropped 13,456 acres and the hay crop by 5,227 acres.

In the case of land still held by exfarmers who were formerly in the livestock business, there is usually also at least some shift toward cash cropping. While the new operator may well be a livestock farmer and be primarily interested in growing feed crops, the owner will want crops which will bring him a higher return, and the operator may not be

at all adverse to some cash cropping on outlying lands. Corn, beans, and wheat will probably dominate the crop association.

Corn was in the past primarily a feed crop, but due to several factors, it has recently also come to be regarded as a significant cash crop. Yields have increased to the point where the return per acre compares favorably with the other common cash crops of the area, even though the price per bushel may be much lower. Practices have been adopted which permit near continuous growth of corn with little or no rotation, and crop dryers have been installed at local elevators which permit buying and storage of corn directly from the field regardless of moisture content, which is usually high at harvest time in Isabella County. Corn has become the mainstay where cash cropping has extended to lands which are not highly favorable to the production of beans, soy beans, and sugar beets. Wheat is also a significant cash crop in these areas, but is more severely limited by United States Department of Agriculture restrictions.

The hay crops, for which most of the areas less favorable for cash crops seem thus far best suited, usually have not entirely disappeared with the abandonment of livestock enterprises. The crop may be plowed down to build soil fertility or it may be harvested for sale. Sales are usually to local farmers with large cattle operations, though some hay is trucked from the County to shortage areas

wherever these may occur. Hay crops now consist largely of alfalfa or a mixture of alfalfa with brome grass or one of the fescues. Alfalfa or some mixture of it, of which there were only 629 acres in 1919 accounted for 33,020 acres of a total of 37,120 acres of hay crops in 1964.

Considerable changes have thus occurred in the cropping pattern, especially in the latter part of the recent period, as a result of agricultural reorientation. This has produced a noticeable change in the summer landscape of the rural County, particularly outside the long established cash crop areas.

Changing Farmsteads

Farmsteads have been profoundly affected by twentieth century trends. They have been rendered obsolete by mechanization, specialization, and reorientation of enterprises, and they are in surplus supply, because of the drastic drop in the number of farmers. Accordingly, either form or function, or in many cases both, have changed. Farmsteads have been abandoned, partially abondoned, modified in varying degrees, or sometimes entirely replaced by structures better suited to the 1966 operation.

One of the most conspicuous of farmstead forms is the silo. The reorientation of cattle enterprises has altered its distribution, while advancements in design have increased its versatility and size. Where once comparatively

small silos stood singly and well dispersed throughout certain sections, now very much larger ones often appear in clusters on the few remaining dairy farms and on the larger beef farms.

Because of the expanded use of silos for the storage of forage materials which once would have been stored as hay, plus the near universal use of the pickup bailer, the commodious hay loft of the familiar big red barn, designed for storage of loose hay, has become a liability instead of an asset. Lower, longer, and narrower buildings are easier and cheaper to construct and maintain while serving the purpose better. Loose housing of cows, made feasible by the introduction of the milking parlor, has often replaced the individual stalls which occupied the basement of the dairy barn, completing the obsolescence of the structure.

A milk house for the purpose of housing equipment for milk storage, milking, cooling, and sanitizing is now required on all farms producing milk for the fluid market. Corn cribs for the storage of ear corn are disappearing with increased use of the picker-sheller which calls for dryers and bin storage. Most of the chicken coops and swine shelters which were once a part of the usual farmstead have been removed, stand idle, or have been converted to other uses. The potato storage cellar, once common in some areas, now stands in ruins. The increased number and size of machines require much more housing, and relatively new machine sheds

or older buildings converted to this use are common. Changes in method of livestock operations and the abandonment of livestock enterprises on many farms has caused obsolescence and deterioration of fences, and with the replacement of the stationary thresher by the combine, the once near universal straw stack has disappeared.

A goodly proportion of the older farm buildings still standing in the county today are either no longer used at all or are no longer used for the purpose for which they were built. In many cases, the buildings of wholly or partially abandoned farmsteads have been allowed to degenerate to dilapidation. Some farmers, caught in the cost-price squeeze, have allowed obsolete but still used buildings to deteriorate badly. Unhoused, rusting machinery is common about such places. Some former farmsteads have come to be occupied by low income nonfarmers and are now disintegrating. These are often littered with junked automobiles and household equipment.

On the other hand, signs of increasing affluence are also often to be noted about the County's farmsteads. The old farmhouse, while usually basically unchanged, often shows signs of extensive remodeling, occasionally several times as expensive as the original cost of the house. The farm buildings whether used or not are sometimes well maintained. A pickup truck, replacing the home assembled general purpose freight trailer, has often joined the family

rolling stock of one or more late model automobiles. Trailers are still to be seen but are now factory built and transport power boats, travel equipment, or perhaps rodeo horses. A riding, power lawn mower is frequently in evidence, and a hard surfaced driveway is not beyond the realm of possibility. Such farmsteads are sometimes occupied by full time farmers, but more often by exfarmers, part time farmers, or nonfarmers.

Apparent Trends in Economic Productivity of Agriculture in Isabella County

As previously noted, agriculture in Isabella County expanded rapidly both spatially and economically up to the turn of the century. After 1900, though the labor force, and thus the number of people supported by agriculture, started to taper off and then decline, the tillable area and the total value of the product continued to rise through World War I. However, during the first part of the recent period, even though a modest increase in crop yields was taking place, there were signs of decline. Carey, writing in 1932, speaks of agricultural retrogression in the trading area of Mt. Pleasant and points to such landscape evidence as farm and farmstead abandonment and increasing acreage of weed infested, deteriorating meadow (in support of this observation, it may be noted that cropland harvested in Isabella County dropped by 9 percent from 1924 to 1929).

He also cites as evidence of decline, a decreasing volume of business in handling and processing agricultural products in Mt. Pleasant.[1]

Even though, as pointed out earlier in the chapter, crop production has undoubtedly risen during the recent period, there are certain aspects of agriculture which seem to indicate some form of decline continuing to the present. In 1924, 156,485 acres were reported to have been harvested as against 139,081 in 1964, and probably the discrepancy here is slightly greater than the data would indicate. Many farmers now confine cattle to feed lots in summer and harvest green forage for them daily or store the green forage in silos for use later in the summer, both of which processes apparently statistically convert forage producing acreage from pasture to cropland harvested, thus inflating the 1964 figure at least slightly in comparison with the 1924 figure.

The total land in farms has dropped from 316,771 acres in 1920 to 253,050 acres in 1964, and the loss to woodland, nonfarm residential development, expressways, and to some small extent, urban expansion is obvious to any casual observer who remembers the former situation. The number of farms has declined from 3,333 in 1920 to 1,570 in 1964 and evidences of decline are apparent to an observer in the area today in abandoned or partially abandoned farmsteads, nonfarm

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[1]Carey, pp. 42-44.

occupance of many farmsteads, and also in the rise of part time farming.

It may be noted from Table 2, which shows the total value of the agricultural product converted to comparable dollars, that the value of the product declined up to the 1940's, since which time a rise has progressed to the point where the 1964 product was worth more money than the 1919 product. The total value of the product seems to have declined with dropping acreage and prices until the trend was reversed by rising production per acre plus improved accessability to markets, especially the Detroit fluid milk market, which made possible the sale of a higher quality product. It may be pointed out, however, that the 1964 figure is somewhat less indicative of the real income productivity of the land than the 1919 figure. One reason for

Table 2. Total value of farm commodity sales in Isabella County, 1919-1964[a]

Year	Reported Value	Index	Value Converted to 1957-1959 Purchasing Power of the Dollar
1919	$ 9,155,993	131.9	$12,076,755
1929	5,000,000	191.9	9,595,000
1939	3,257,401	237.0	7,720,404
1949	7,218,547	119.8	8,647,819
1959	10,578,787	99.4	10,515,314
1964	14,753,285	99.5	14,679,519

[a]Values appearing in the United States Census of Agriculture report, converted to comparable dollars, by application of an index in which the average wholesale purchasing power of the dollar for the period 1957-1959 equals 100. The Economic Almanac, 1967-1968, p. 98.

this is that the 1964 figure includes the value of certain imported materials which the 1919 figure does not. In 1964, farmers spent $729,377 for fuel for power as against a negligible amount in 1919. The land furnished the power through feed consumed by horses in 1919. In 1964, farmers spent $909,288 for fertilizers while the land provided the fertility in 1919. In 1964, farmers spent $734,995 for mill mixed feeds as against a negligible amount in 1919. The land furnished the feed in 1919. A second reason why the 1964 figure is less representative of real income arises from the previously mentioned unfavorable disparity between the price of farm products and the price of production items. Parity[1] stood at 99 in 1920 and at 76 in 1964.[2] When the greater subsistence function of agriculture at the beginning of the period is also taken into consideration the apparent decline may be quite real despite the rising product figure.

Regardless of the status of the absolute economic productivity of the County's agriculture, there is no doubt concerning the decline of its relative significance. Other enterprises in which residents of the county participate have come to account for much more income than agriculture,

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[1]Parity is "the ratio of the index of prices received to the index of prices paid, including interest, taxes, and wages." The Economic Almanac, 1967-1968, p. 178.

[2]The Economic Almanac, 1967-1968, p. 178.

and also to be considered from the standpoint of relative decline is the fact that, due to the rising standard of living, a given real income from agriculture will now support far fewer people than it did in 1920. Agriculture today is far from being the economic mainstay of the County that it was at the beginning of the recent period.

Government in Agriculture

The expanding role of the United States Government in agriculture has been a significant factor in rural landscape development during the recent period, operating both to institute change and at the same time to maintain certain aspects of the status quo. Since the early 1930's a number of product programs have existed, which have been directed mainly toward two goals: (1) keeping the farmer in business by means of bolstering his income both through direct payments and raising commodity prices through curtailment of production, and (2) encouraging or discouraging production of certain items according to the apparent best interests of the nation. Also, the United States has entered the agricultural commodity market in some instances in persuance of essentially the same goals.

Currently, four programs are in force in Isabella County which pay farmers to withdraw crop land from production. Two of these are long term and two are on an annual basis. With regard to instances of change, 8,864 acres in

the County were involved in the long term programs in 1966, and much of the clear nonagricultural land observable in the area today has been withdrawn from production in compliance with these. The short term programs involved 11,893 acres in 1966. Much of this land is somewhat less visible to the casual observer than that withdrawn under the long term programs because in contrast to the latter category which often takes in whole farms, the former most often exists in small plots intermingled with other lands and may be involved in practices which do not make it easily distinguishable from productive land, at least until the harvest season has passed.

In addition to payments made for the withdrawal of land from production under the programs mentioned above, subsidy payments are made in connection with the production of wheat, sugar beets, and wool. Also, low interest loans are made to the farmer for the purpose of installing such facilities as dryers and storage bins to help him avoid the necessity of dumping grain on the market at harvest time when prices are usually low. Price support loans are also made with the same end in view.

In the census year 1964, for which total product sales of $14,753,285 are reported, government agricultural program payments to farmers exclusive of loans reached approximately $1,000,000, and in 1966 the figure rose to

$1,250,000.[1] This represents a significant boost to the economy of the agricultural community, especially in view of the fact that most of this money is net gain to the recipient, while probably more than 80 percent of the total sales figure went for production expenses. Very possibly one result of these payments has been the total abandonment of fewer farms and fewer farm operations, and assuming this to be true, the programs have, in this one respect at least, helped to maintain the status quo.

The United States Government again appears as an agent of landscape change in that, as it has become more concerned with its stewardship function, programs promoted by the soil conservation service have resulted in many modifications. Some of these involve tree plantings, contour and strip cropping, wild life habitat improvement, farm ponds, sod waterways, and tile drainage. Payments are made to help the farmer finance the implementation of these practices.

The Changing Structure of the Rural Community

Since World War I, there has been a decided change in the rural community. During the first part of the period,

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[1] Interview with James Beutler, Chairman of the United States Department of Agriculture Stabilization and Conservation Committee, Isabella County, Michigan, August 1967.

rural residents were nearly all farmers who needed and received each other's aid in such enterprises as silo filling, threshing, or perhaps construction of new buildings. Every member of the community knew every other member intimately. Local schools and churches served educational and religious needs, and country stores supplied many of the staple material needs.

However, when the mechanical advances, first introduced in the middle thirties, became general after World War II, community gang labor was no longer necessary, and the farmer now seldom saw his neighbor. Nonfarm residence increased, and the farmer himself often took on work off the farm. Rural residents now commute to jobs in centers as distant as Lansing. In general, the interests of rural people have become so little interrelated that social contacts have fallen off to the vanishing point, and rural neighbors today may never have met each other.

The rural resident obtains his staple goods and services at the center where he works or perhaps he patronizes a shopping center where the price, quality, and variety of goods are more to his liking than at the old country store, and where a laundromat or other services may be available. He goes to church in town, where through work or commercial contact, he has something in common with more people than he has in the rural areas where he lives. Most of the rural County has been included in large school

districts which offer instruction from kindergarten through grade twelve, and rural children now attend the centralized plants of one of these. The existence of these schools places the rural area on a par educationally with the entire community and thus adds to its attractiveness for residential purposes, but the loss of the small rural schools which they have replaced is also the loss of one more bond of rural unity.

Thus the rural community as it existed before World War II has disintegrated. The rural church, the rural school, the country store, and in most cases even the country gas station have expired. The buildings stand abandoned or perhaps have been torn down or converted to another use such as a residence, garage, or tool shed, either on the original site or in a new location. In some cases, abandoned school buildings were used for a while as community buildings, but now community activity has dropped off to the point where few rural areas have need for such structures. The usual rural resident has become a part of some much broader community.

However, since World War II, new commercial enterprises have entered the rural area. The farm implement dealer who used to be located on mainstreet in town has moved outside to find room for his stock of huge machines and also to be more accessible to the farmer. Parking is inadequate down town, and the rural resident, farmer or

otherwise, has grown accustomed to driving everywhere he goes and is displeased if he cannot park within a few feet of the establishment he wishes to visit. Some of the buildings constructed in the 1950's to house farm implement establishments, are already abandoned, due at least in part no doubt to the rapidly decreasing number of farmers. Certain other establishments which relate to the entire community rather than to the rural only, such as furniture stores, beauty shops, flower shops, boat sales, and travel trailer sales, have moved into the rural area to obtain more and cheaper space for building, display, and parking.

The Improvement and Extension of Amenities

The material cultural changes of a public service nature, such as improved local roads, highways, expressways, electric power lines, telephone lines, and gas service have brought about landscape change both directly from the standpoint of the forms involved and indirectly through the effects of the service rendered. The advent of the expressway and the improvement of highways and local roads along with the tremendous development of motor transport has had an impact upon the rural area perhaps comparable to the coming of the railroads in the nineteenth century. Motor transport has in fact taken over much of the former function of the railroads as indicated by the obviously reduced traffic on the latter and the complete abandonment of one

road during the recent period. One state highway and two expressways now cross the area. These latter are in themselves notable features of the landscape not only because of the wide strip of land they occupy (see Figure 13) and the overpasses and cloverleaves associated with them, but also because they are the first roads of the twentieth century to depart from an approximation of a rectangular section line route. Main traveled county roads have been asphalt surfaced and the paving continues with the goal of eventually placing all rural residents within a mile or two of a hard surfaced road. This transportation development has been one of the key factors in the near total commercialization of today's agriculture, e.g., allowing dairy farmers to ship raw milk to the urban fluid market or to buy supplies directly from any distribution center in Lower Michigan. It has also made commuting to work a feasible procedure for the rural resident and so has permitted the rise of part time farming and rural living for those who prefer it, regardless of economic orientation.

In driving the County roads today, one is almost never out of sight of a power line. Rural electrification has not only permitted much of the mechanization which has been so significant in the growing size of the farm unit and the changing forms associated with it, but it has also placed the rural home very nearly on a par with the urban home from the standpoint of convenience and comfort. Such a

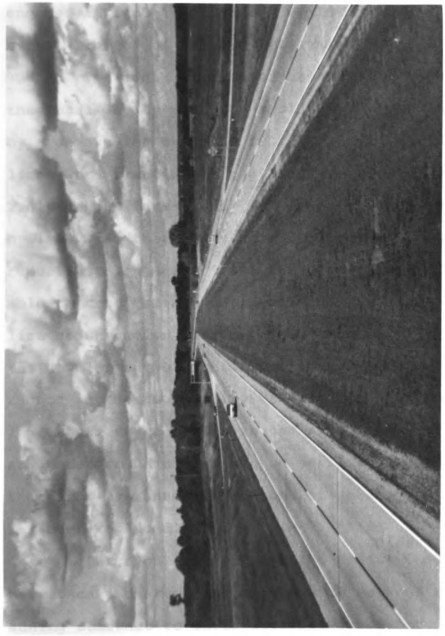

Figure 13. U.S. 27 Expressway at Shepherd.

high proportion of the household equipment usually considered indispensible to present day living depends upon electric power that probably very few people not directly engaged in full time farming would now live in the rural areas without its availability there.

The lines which brought telephone service to much of the rural County prior to World War I were totally destroyed by a severe ice storm in 1922, and only the long distance lines were immediately replaced. By 1940, when there were 2,619 census farms, only 497 reported telephones. However, by 1964 when there were only 1,570 census farms, 1,381 reported telephones. Dial telephone service is now available to most rural county residents without payment of a line construction charge. This service is indispensible to the development of nonfarm residence and is certainly a factor in the feasibility of part time farming and in inducing exfarmers to remain in the rural area. The newest lines are underground cables and so are less obvious features than the older overhead lines, none of which, however, have so far been replaced.

Large gas mains cross the County, and consumer lines have been and are being extended to some of the rural areas, adding somewhat to their attractiveness for residence location. The gas lines themselves are visible forms only through such associated features as line markers, control stations, and meters.

Those amenities, particularly local hard surfaced roads and electric power and telephone service, which were first introduced to serve the farm population, have been most significant factors in making rural living attractive to nonfarmers who now occupy "the country" in ever increasing numbers. Their presence there now gives impetus to the further improvement and extension of services.

Changing Structure and Magnitude of the Rural Population

These many and far reaching cultural changes have given rise to a situation in rural Isabella County in which the farmer, who was overwhelmingly the dominant element until after World War II, is now decidedly a minority element, even though he still owns much of the land and even though over one-half of the area is still considered to be crop land. Early residents of the County were there because their livelihood depended upon some enterprise within the area, usually connected with some form of exploitation of the land, principally agriculture. Today's residents are more often involved in services, either performed outside the area or for the benefit of consumers from outside the area, and the land which was once prized primarily for its wealth producing potential, now becomes more and more prized as living space.

The rural population as shown by the decennial census reached its low point in 1930 with 15,915. As this figure includes villages of less than 2,500 population, it is necessary to deduct the population of these to arrive at a figure for the number of people actually living outside any kind of central place. Subtraction of the estimated population of the County's unincorporated villages and the known population of the village of Shepherd leaves a figure of 13,570 for the approximate rural population in 1930, the great majority of which was unquestionably constituted by farm families. In 1960, the approximate rural total reached by the above method had climbed to 17,680. Of these, the decennial census, which now divides the rural population into rural farm and rural nonfarm, lists only 7,608 persons as rural farm. Assuming the rates of change which obtained in the decade, 1950-1960, to be still operative, the 1966 rural population outside the villages should have passed 18,000 while the rural farm population would have dropped below 6,200. Actually the rate of drop in rural farm population may well have accelerated during the present decade. Whether or not this is true, a majority of farm houses are now occupied by nonfarmers, while dwellings originally built as nonfarm residences have become conspicuous features of the landscape, as have mobile homes, to a lesser degree.[1]

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[1]A 1966 field check, showed 1,414 nonfarm houses originally constructed as such, and just over 400 mobile homes.

CHAPTER VII

COMPONENTS OF THE PRESENT LANDSCAPE: SPATIALLY EXTENSIVE ELEMENTS

It is the purpose of this chapter to discuss the character of the Category I elements (public function elements, agricultural land, nonagricultural land) of the present rural Isabella County landscape. Direct observation and more complete information allow more specific and detailed treatment of the present landscape than was possible in the case of any former period, and while the categorization of the elements of the present rural landscape follows the same general scheme presented in Chapter III, subcategorization is carried further, except in the case of public function elements whose less complex nature does not seem to demand it.

Category I,A Elements of the Landscape[1]

With the exception of the addition of expressways, the road pattern, as previously indicated, shows no great alteration since 1915. Minor changes, however, have

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[1]Public function components of the landscape, see Appendix.

occurred. Careful comparison of Figure 8 with a map showing the present road pattern, such as Figure 36 shows that in the western one-fourth of the County where rough sandy lands predominate and where agricultural use of the land has decreased considerably, a total of six miles of road is to be found in 1966 which did not exist in 1915, while twenty-two miles have disappeared, for a net loss of sixteen miles or about 6.5 percent. The new roads have been added to fill a gap in a main route or to give access to a lake. In most cases, the abandoned roads once served farmsteads which have now been abandoned. In a few cases, the increasing weight and speed of vehicles demanded bridges too expensive to be warranted by the low volume of traffic.

In the flat eastern one-fourth of the County, eight miles of road were lost and nine and one-half miles gained since 1915. Here there were more gains in the flat, low value sandy lands than in the excellent agricultural areas of the silt lake plain. In the case of the latter, which was occupied very early, the road pattern was already virtually complete by 1915, while that of the sand lake plain, which was entered late and sparcely settled, was the least complete in the County. Some addition was necessary in the latter to close gaps in main routes, and five miles of dirt road have been added in the northeast corner of the northern segment of the sand lake plain, where there was a belated and largely abortive attempt at agricultural

occupance. In general, less road abandonment has accompanied agricultural decline in the sand lake plain in the east than in the sandy lands of the west, first because of oil exploitation starting in the east in 1928 and second because of a much greater development of nonfarm residence there.

There has been less change in road pattern in the central part of the County than in the east or the west. The till plain land type tends to dominate this area, and it, like the silt lake plain, was entered early and remains well occupied, so there has been no occasion for any considerable departure from the 1915 situation.

Most roads of the area in the early part of the recent period were "improved," i.e., graded and usually surfaced with gravel.[1] Some, however, were not surfaced, and a few were not graded. These were, and still are, found largely in the dry sandy lands where sparce occupance generates little traffic, and where a sand trail is an all weather road of a sort.

With increasing speed and volume of traffic, both the dust and the maintenance problems on gravel roads became critical, and after World War II, an asphalt surfacing

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[1]Kerr and Trull, p. 1,185 (published 1928), where the following statement appears: "The public roads of the County are excellent. The main roads and many of the less important ones are well graded and surfaced with gravel."

program was undertaken. There are now 200 miles of asphalt surfaced roads in the County,[1] and while many gravel roads deteriorate with age and volume of traffic, few residents of the County are more than three or four miles from a hard surfaced road, and most are closer. The distribution of these blacktop roads was never related to areal diversity, but only to developing culture. They were first constructed where there was considerable through traffic such as the Blanchard Road which not only connected the villages of Shepherd, Winn, and Blanchard, but also highways U.S. 27 and M. 66. The pattern is now such as to attempt to provide both hard surfacing for the heaviest traveled routes and a semblance of grid type coverage for the County.

For all of the present period, the County has been crossed by two highways, north-south by U.S. 27 and east-west by M. 20, both of which have been paved since well before World War II. As previously mentioned, these plus the U.S. 27 expressway opened in 1960, have had far reaching effects through improved connections with rapidly developing south-eastern Michigan. Also, intersecting as they do at Mt. Pleasant, the County's main central place, they greatly facilitate the movement of local traffic. Expressway U.S. 10 crosses the northeast corner of the County, also facilitating communication with the southeast.

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[1]Interview with Charles Zalud, manager of the Isabella County Road Commission, August 1967.

With the opening of the new U.S. 27 expressway, former U.S. 27 became a much traveled hard surfaced county road. It connects Shepherd, Mt. Pleasant, and Rosebush within the County, and these centers with Alma and St. Louis in Gratiot County to the south, and with Clare in Clare County to the north. The location of the highways and expressways seem to bear no causal relationship to local areal diversity, but fortunately the obvious routes of former U.S. 27 and both expressways do lie in the nearly flat terrain of the eastern side of the County.

The railroads of the area have shown only retrogression since World War I. The two roads which serve Mt. Pleasant and the eastern side of the County are still in business, though barely so. On the western side of the County where the railroads came in largely on the strength of forest products, now long vanished, and where agriculture continues to decline, only the road through Blanchard survives.

Like the roads, the public drainage system, as previously noted, has undergone no very great change since World War I, and thus the great proportion of all drainage lines are still in the silt lake plain and till plain land types, see Figures 12 and 1. Deep open ditches are still a feature of most portions of the silt lake plain and to a lesser extent of the till plain as well, though some of these are being replaced by large tile. On many farms,

especially in the silt lake plain, piles of field tile awaiting installation attest both to the need of drainage and the value of the land. No use of the sandy lands is yet perceived which will bear the cost of large scale drainage of the wet portions, though the need for living space might eventually change this situation, for some locations at least.

Considerable work on public drains is now in progress in the area, but this consists largely of renewal of drains already in existence before World War I. The direct landscape impact of the drainage system does however continue to change slowly as a few new open drains are established and some older ones are converted to tile.

As indicated in Chapter VI, the electric power line has had great total impact. At first, only rural establishments located along the transmission lines between towns were served, but in 1938, service was extended to most of the rural area, and now electric power lines reach virtually every house in the County occupied in 1938 or later. The power line is thus nearly ubiquitous, and its extent is related much more to developing culture than to areal diversity, though there are several totally unoccupied areas in the sandy lands where it does not appear.

Reestablishment of rural telephone service after destruction of the lines in 1922, has been a piecemeal affair. For some time, service, with some exceptions where

farmers restored lines themselves, was mainly available only along the main transmission routes and close to the towns. Telephone patrons have been required to pay the cost of building all but the first half mile of any new line required to reach a location, and this of course placed a practical limit on the availability of service. Only quite recently has gradual expansion of service reached the point where telephones are available at reasonable cost in some of the more remote areas, such as the northwestern sand hills. The extension of service has been much accelerated since World War II by a rising demand from farm families and by the symbiotic relationship which exists between increase of non-farm residence and the growth of telephone service.

Natural gas service came to rural Isabella County in the early 1930's as a result of local production in several areas, though chiefly in Vernon Township in the northeast. However, service has been of very limited extent. Pipe lines were laid between Mt. Pleasant and Clare along U.S. 27 and between Mt. Pleasant and Midland along M. 20, bringing gas service to rural residents along these segments of the two highways, and with the exception of minor extension, mostly near Mt. Pleasant, rural service is still limited to these locations. Local wells are now all but exhausted, and gas is now supplied to the County from lines coming into Michigan from the southwest.

Category I,B and I,C Elements of the Landscape[1]

Agricultural and nonagricultural lands (defined in Chapter III) spatially dominate the rural County, and areal diversity in the type and in the intensity of occurrence of these is a highly conspicuous feature of the landscape. Because of their close reciprocal relationship, the approach to the treatment of both will be explained before discussing the distribution of either.

In describing the role of agricultural and nonagricultural lands in the composition and personality of the landscape, a means was sought which would express quantity and describe character. Accordingly, the following scheme was devised. Category I,B or agricultural lands are subcategorized according to intensity of occurrence as follows:

1. Maximum intensity, meaning near complete agricultural use of land existing in regularly shaped blocks, no smaller than one-half section.

2. Major intensity, meaning that agriculture is obviously dominant within the designated plot, but that nonagricultural elements consisting mostly of wooded and partially wooded areas are also conspicuously present, or that due to the presence of nonagricultural elements, agricultural land is fragmented to the point where there are no regularly shaped blocks as large as one-half section.

3. Intermediate intensity, meaning that within the designated plot, agricultural and nonagricultural elements are nearly in balance (total area is small).

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[1]Agricultural and nonagricultural land, see Appendix.

4. Minimum intensity, meaning that agriculture is negligible or entirely absent.

In addition, differentiation according to type of agriculture is made to the extent of distinguishing areas where cash cropping is the chief enterprise from those where livestock enterprises are dominant. This is done by enclosing the relatively small cash crop areas by a line on the agricultural land use map, Figure 14. In determining whether an area is livestock or cash crop oriented, only full time farmers are considered, first because their management decisions are more clearly related to the income productivity of the land than those of part time farmers with an off the farm source of income and secondly because full time farmers were until recently very much the majority occupants of all areas that are dominately agricultural, and it is their impact upon the landscape which is still most obvious.

With regard to intensity of occurrence of agricultural use, the four general categories listed above are readily apparent visually. In maximum intensity agricultural lands, such nonagricultural features as wood lots, undrained depressions, partially wooded areas, hedgerows, scattered individual trees, stumps, and stone or debris piles are infrequent or absent, and the view across a section of land (one square mile) is usually very nearly unobstructed.

In the major intensity class, the clearly dominant agricultural land is permeated by some or all of the

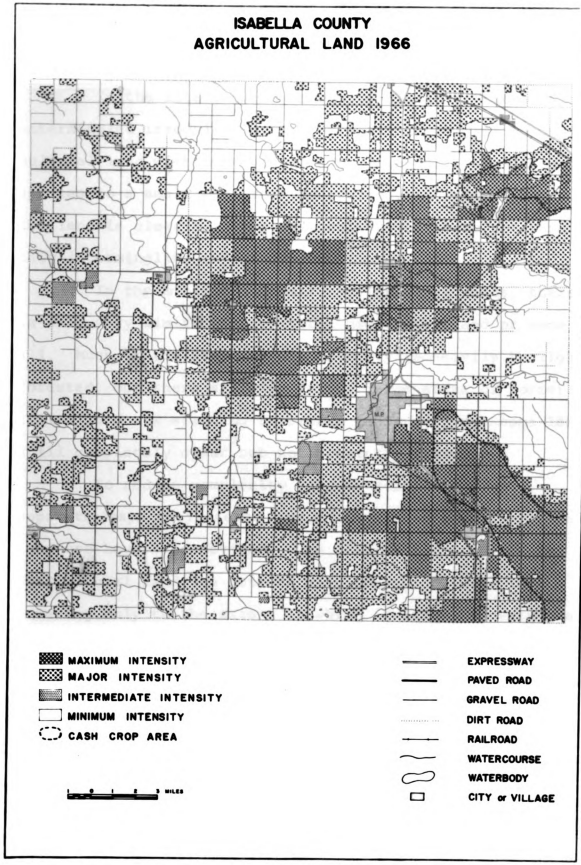

Figure 14. (For explanation of intensity categories, see Appendix.)

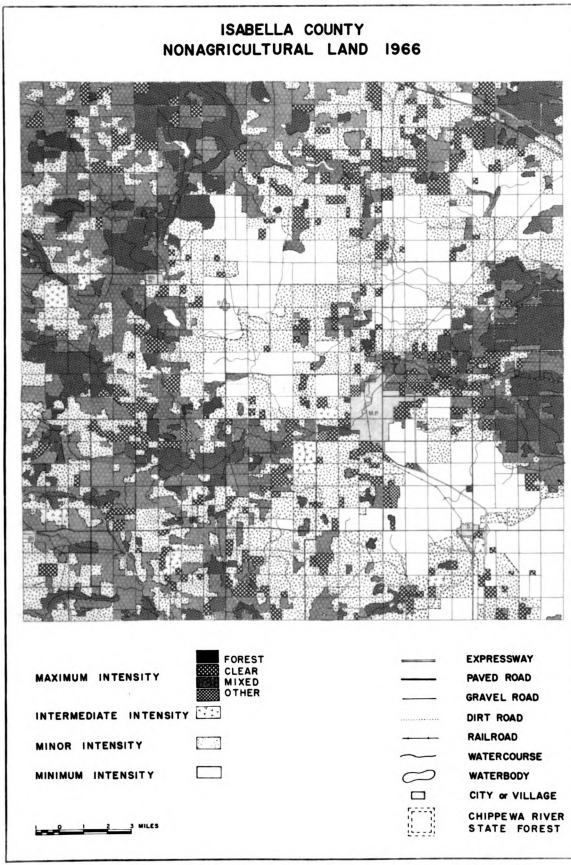

Figure 15. (For explanation of intensity categories, see Appendix.)

1. Maximum intensity, meaning near complete nonagricultural status of the land.
   a. Forested.
   b. Clear or nearly clear nonagricultural land.
   c. Mixed wooded and clear nonagricultural land and marsh land.
   d. Other (airports, golf courses, cemetaries, etc.).

2. Intermediate intensity, meaning as in classification of agricultural land, that agricultural and nonagricultural areas are nearly in balance. Nonagricultural land of this category is usually wooded or partially wooded.

3. Minor intensity, meaning that nonagricultural land while still a conspicuous part of the landscape, occupies a minor portion of the parcel in question. This nonagricultural land is also usually wooded or partially wooded.

4. Minimum intensity, meaning that nonagricultural elements here reach their smallest extent and are inconspicuous or perhaps nearly nonexistent.

According to the treatment devised here, agricultural and nonagricultural intensity categories are reciprocal in that each agricultural intensity category has an opposite number among the nonagricultural intensity categories and vice versa. The maximum category on the agricultural map becomes the minimum category on the nonagricultural map. The major agricultural areas become the minor nonagricultural areas. The minimum agricultural category becomes the maximum nonagricultural category. The intermediate agricultural and nonagricultural categories are coextensive, serving the function of a middle hinge point at which something approaching equality of extent exists.

In conception, these land use intensity categories are entirely empirical and qualitative, set up as a means of

describing the role played by varying ratios and types of agricultural and nonagricultural land uses with respect to landscape diversity. However, they are also quantified to make possible greater objectivity in discussing the relationship existing between land use and land type.

The following percentage tables were derived from the measurement on aerial photographs of the ratio of agricultural to nonagricultural land in a total of ninety sample areas chosen at random from lands previously visually classified.[1] In Tables 3 and 4, the category break points are the mid points between the means of each group of samples, thus insuring the inclusion of all agricultural and nonagricultural lands. Tables 5 and 6, on the other hand, are limited to the ranges of percentage relationships actually observed from the samples. Partially, these latter display ranges which are narrower and discontinuous, because, with one exception, gaps exist between the extreme samples of the categories consecutive in the hierarchy. They therefore do not with absolute certainty encompass the entire extent of all Category I,B and I,C lands, but including all the samples, are a more practical guide to reality than the all inclusive Tables 3 and 4. All category I,B and I,C lands must fall within the ranges shown in Tables 3 and 4,

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[1]For explanation of procedure in setting up intensity categories, see Appendix.

but, assuming the ninety samples to be representative, most do fall within the ranges shown in Tables 5 and 6.

Table 3. Agricultural land as a percentage of total category I,B and I,C land (all inclusive)

Category	Percentage in Agricultural Use	Means of the Samples
Maximum intensity	89.9 to 100.0	95.2
Major intensity	71.7 to 89.8	84.5
Intermediate intensity	30.7 to 71.6	58.7
Minimum intensity	0.0 to 30.6	2.8

Table 4. Nonagricultural land as a percentage of total category I,B and I,C land (all inclusive)

Category	Percentage in Nonagricultural Use	Means of the Samples
Maximim intensity	69.4 to 100.0	97.2
Intermediate intensity	28.4 to 69.3	41.3
Minor intensity	10.2 to 28.3	15.5
Minimum intensity	0.0 to 10.1	4.8

Table 5. Agricultural land as a percentage of total category I,B and I,C land (samples only)

Category	Percentage in Agricultural Use	Means of the Samples
Maximum intensity	89.9 to 99.5	95.2
Major intensity	72.5 to 89.8	84.5
Intermediate intensity	47.0 to 71.0	58.7
Minimum intensity	0.0 to 11.0	2.8

Table 6. Nonagricultural land as a percentage of total category I,B and I,C land (samples only)

Category	Percentage in Nonagricultural Use	Means of the Samples
Maximum intensity	89.0 to 100.0	97.2
Intermediate intensity	29.0 to 53.0	41.3
Minor intensity	10.2 to 27.5	15.5
Minimum intensity	0.5 to 10.1	4.8

Maximum Intensity Agricultural Lands

Over a century of use has confirmed the judgment of the early settlers who chose the silt lake plain and the till plain for agricultural occupance, for these, especially the silt lake plain, have proven to be by far the most productive

for the type of agriculture thus far attempted.[1] The silt lake plain as shown in Figure 1 is approximately 114 square miles in area. About 64 square miles or approximately 57 percent of this land type is shown on Figure 14 as maximum intensity agricultural land (the agricultural and nonagricultural land use maps ignore the existence of other categories of landscape elements. Their extent is too small to show on maps of this scale and their existence does not affect the relationship in question). The till plain land type is about 160 square miles in extent, with approximately 22 percent falling into the maximum intensity division. No maximum intensity agricultural land occurs outside these two land

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[1]Considering the overall distribution of agricultural and nonagricultural lands, it is of interest to note that the present situation is somewhat comparable to that which existed at the close of the early period. A great part of the agricultural activity both then and now was in the silt lake plain in the east and in the till plain areas in the interior. Comparison of the agricultural land use map, Figure 14 with the land types map, Figure 1 shows a high proportion of the greatest intensity of occurrence of agricultural land to be associated with these land types. Figure 3 shows the areas of greatest density of occupied farms in 1879 to be also associated with these types, although settlement had not yet reached the silt lake plain of the northeast. Comparison of Figure 15 with Figure 1 shows the present concentration of nonagricultural land to be greatest in the sand hills of the west, the lake plain sands of the east, the dry sand plains of the interior, and the muck and peat lands of the interior. With the exception of the muck and peat areas, these were pine lands being cut over in 1879, and agricultural settlement was very sparce there. The very obvious difference between the situations of 1879 and 1966 is that in 1879, expanding agricultural occupance had not yet reached the marginal lands, while in 1966, agricultural occupance of these is in retreat.

types. Incidentally, the isolated half section of maximum intensity agricultural land appearing in the south central part of the County marks the occurrence of a small lake bed plain.

Cash cropping is a significant type of agricultural enterprise in the maximum intensity category, especially as it occurs in the eastern silt lake plain land type. It is the dominant enterprise of more than one-half of the full time farmers within a total area of about 29 square miles, see Figure 14, all of which lies in the silt lake plain and 24½ square miles of which falls within the maximum intensity land use category. It is within those portions of the silt lake plain where cash cropping is conspicuous that agricultural land occupies the greatest part of the total, with nonagricultural elements at their absolute minimum. The general aspect is decidedly open, with little to obstruct the view (Figure 16), and is almost that of a huge, well tilled garden. There are few fences, and crops sometimes directly border the road bed with no intervening grassy strip (Figure 17). Normally, crops are luxuriant and show very even development. The crop association consists largely of beans, corn, and wheat, with heavy emphasis on beans. Sugar beets and soy beans are minor crops. Hay crops, which are very significant in the County as a whole, occupy a relatively small acreage here. Figure 19, the 1965 aerial photograph of sections 13 and 24, Coe Township, shows an example which is typical of much of the maximum intensity

Figure 16. Maximum intensity agricultural land, silt lake plain.

Figure 17. Intensive cultivation in cash crop area, silt lake plain.

category as it occurs in the silt lake plain land type, with very few hedgerows and scattered trees and with total non-agricultural land often falling below 5 percent.

There is evidence that within the maximum intensity agricultural areas of the silt lake plain the intensity of occurrence of agricultural land is increasing, attesting to the fact that this land is still highly valued for agriculture. Figure 18,A shows land use for sections 13 and 24, Coe Township, as it was in 1938 and in 1965 (maps devised from 1938 and 1965 aerial photographs). Examination shows retreat of wooded and partially wooded areas. However, it may be noted that despite the overall loss of woodland, there is more growth along field and property lines in 1965 than in 1938. This is partially because 1965 is 27 years further away from the time when the land was originally cleared and partially because increasing farm size results in a greater total length of boundary line per farmer, who, now having become machine oriented, was somewhat less inclined in 1965 toward performing the hand work often still required for hedgerow clearing than he was in 1938. It may also be noted from Figure 18,A that there has been a considerable shift in field pattern from small square fields to larger oblong fields to accommodate today's large machines and generally larger operations.

The transition from the silt lake plain to the till plain or the sand lake plain is in some cases fairly sharp,

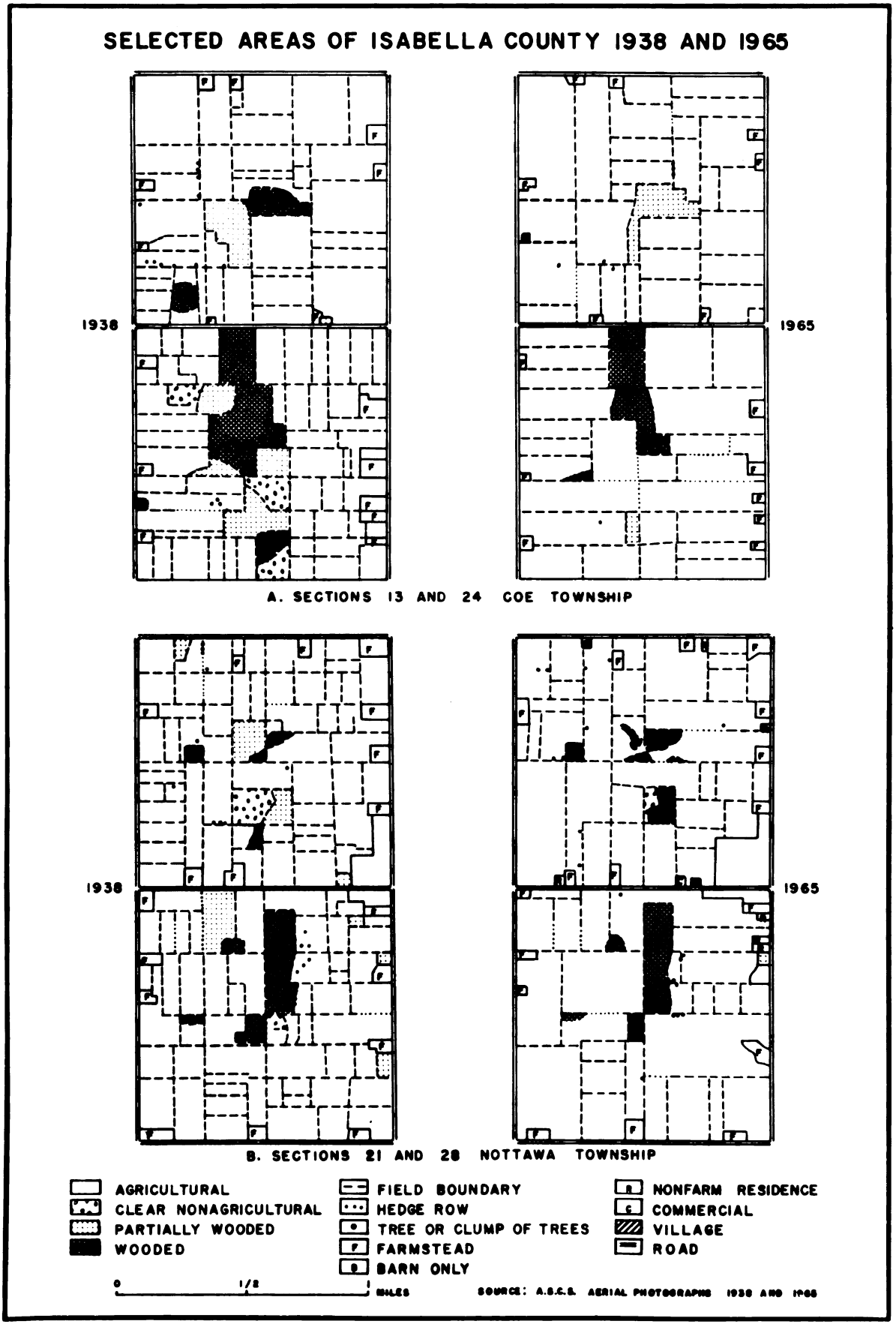

SELECTED AREAS OF ISABELLA COUNTY 1938 AND 1965
1938
1965
A. SECTIONS 13 AND 24 COE TOWNSHIP
1938
1965
B. SECTIONS 21 AND 28 NOTTAWA TOWNSHIP
AGRICULTURAL
CLEAR NONAGRICULTURAL
PARTIALLY WOODED
WOODED
FIELD BOUNDARY
HEDGE ROW
TREE OR CLUMP OF TREES
FARMSTEAD
BARN ONLY
NONFARM RESIDENCE
COMMERCIAL
VILLAGE
ROAD
0
1/2
MILES
SOURCE: A.S.C.S. AERIAL PHOTOGRAPHS 1938 AND 1965

Figure 18

and where this is true, the agricultural intensity category changes abruptly. Figure 20, showing section 36, Wise Township, illustrates this. The north portion of the square mile is silt lake plain with maximum intensity agricultural land use, while the south portion is sand lake plain with minimum intensity agricultural land use. In southeastern Coe Township, the line between maximum intensity and major intensity agricultural land is nearly coincident with the boundary between the silt lake plain and till plain. The cash cropping line and the silt lake plain border are even more nearly coincident here, see Figures 14 and 1.

Maximum intensity agricultural land exists in the till plain land type in essentially two general locations. One is along the common boundary with the eastern silt lake plain in certain areas such as in northwestern Coe and northeastern Lincoln Townships where the transition from the flat lake plain to the undulating till plain is not sharp and where practices common in the silt lake plain can be duplicated to some extent in the till plain without great difficulty. The other, in which exists the largest block of the category occurring in the till plain, is in the north central part of the County, much of it in Nottawa Township. Near complete agricultural use of the land is somewhat facilitated here by the fact that much of this till plain area is also less rolling than many portions of the land type. Also, the previously noted agricultural orientation of the area's

Figure 19. (right) Aerial photograph of Sections 13 and 24, Coe Township, 1965.

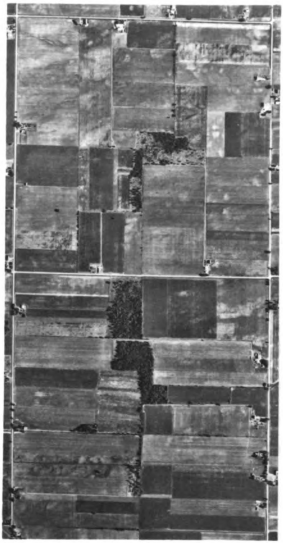


Figure 20. (lower left) Aerial photograph of Section 36, Wise Township, 1965.

Figure 21. (lower right) Aerial photograph of Section 16, Nottawa Township, 1965.

occupants is a positive factor with respect to the extent of agricultural land. They are careful farmers, tending to clear their land rather completely and to keep it that way, with the result that probably some maximum intensity agricultural land areas exist here in less favorable circumstances than elsewhere. However, even here, a definite relationship is to be found between land type and intensity of occurrence of agricultural land, as may be seen in Figure 21, showing section 16, Nottawa Township. The north portion of the section is morainic clayey hills and barely falls within the major intensity category of agricultural use, while the south portion is gently undulating till plain and is a good sample of maximum intensity agricultural land.

Sections 21 and 28 of Nottawa Township, of which the 1965 aerial photographs appear as Figure 22, are typical of the maximum intensity agricultural lands of the till plain. By comparison of Figure 22 with Figure 19 (silt lake plain), the field pattern and extent of agricultural land may be seen to be similar. Also, Figure 18,B shows wooded and partially wooded lands to have retreated slightly from 1938 to 1965 in the till plain sample as in the silt lake plain sample, and there has been the same shift toward larger and longer fields. However, there are differences. The undulating surface of the till plain in itself changes the appearance somewhat, and the erosion of soil from the high spots and alluvial filling of the low spots, plus unlike rates of

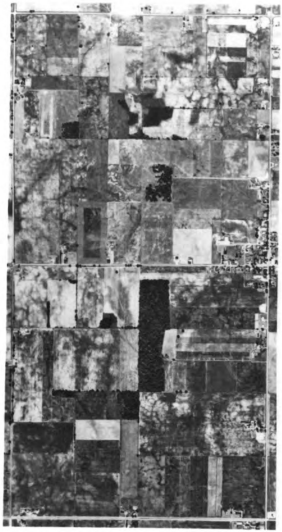


Figure 22. (right) Aerial photograph of Sections 21 and 28, Nottawa Township, 1965.

Figure 23. (left) Aerial photograph of Sections 16 and 21, Lincoln Township, 1965.

drainage of the "swells" and "swales" make for varied growth conditions (note more varied soil conditions in till plain photograph), and while crops are usually good, development is less even than in the silt lake plain.

This irregularity of soil, slope, and drainage conditions, plus lower overall fertility makes the till plain less favorable for cash cropping than the silt lake plain, and the large scale full time farmers of the maximum intensity agricultural lands of the till plain are almost universally engaged in livestock enterprises, usually involving cattle. However, as mentioned in the preceeding chapter, part time farmers in the till plain may be largely involved in cash cropping. The crop association here, as in other areas where livestock rearing is dominant, consists largely of alfalfa, corn, and wheat with diminishing acreages of oats, in contrast to the silt lake plain where beans replace alfalfa as the dominant crop. Also, the fact that there are, or recently have been, cattle on almost all farms in the till plain has resulted in complete fencing of the area, though this is one of the sections mentioned in Chapter VI where fences are rapidly becoming obsolete because of lot feeding of cattle or abandonment of animal husbandry, and many fences are falling into disrepair. This situation is also true of much of the major intensity agricultural lands. In a great part of the County, the summer landscape is not

the same without the former omnipresent herds of grazing cattle.

Major Intensity Agricultural Lands

The major intensity agricultural land use category exists to some extent in most parts of the County, but it occurs in large blocks only in the silt lake plain and the till plain areas (compare Figures 1 and 14), occupying some 38 percent of the former and 47 percent of the latter. In the main, two factors lead to this situation, in which agricultural land, though dominant, is less intense in occurrence than in the category just discussed. One, which is inherent in the character of the land, involves the frequent presence of areas unfavorable to agriculture because of poor drainage, rapid drainage, steep slopes, or unproductive soils. The second significant factor is that as a result of this limitation and overall lower productivity, most of the area where this category occurs is held in lower esteem for tillage purposes than that where maximum intensity land is dominant. Consequently, at least up to the present rise of part time farming, livestock enterprises were almost universally carried on here, and apparently because of both lower productivity of the land and the presence of livestock capable of deriving some sustenance from any untilled space, there has been less tendency to carry the tillage of these lands to the possible maximum. Untilled strips along the

fences (more frequent because of more livestock) are wider, woodlots are more numerous and larger, there are more scattered individual trees, and on the whole less tendency to correct conditions which produce waste land areas.

In the silt lake plain, major intensity agricultural lands are to be found largely in peripheral locations where more difficult drainage conditions may obtain or where soils may be less tractable or less productive, though it is also found in scattered locations where owners have chosen to maintain large wood lots, or have neglected to clear wooded areas, drain swamps, or curb the natural advance of woodland. In the till plain, poor drainage is the major physical difficulty leading to the frequent occurrence of non-agricultural elements. Other than in the silt lake plain and the till plain land types, major intensity agricultural lands are greatly fragmented by the extensive occurrence of some or all of the unfavorable physical conditions mentioned above.

It may be noted by comparison of Figure 23, showing major intensity agricultural land in till plain with Figure 19 showing maximum intensity agricultural land in silt lake plain, that hedgerows, scattered clumps of trees, and scattered individual trees are more conspicuous in the former than in the latter, and that the wood lot area of the former is larger than that of the latter.

It may also be noted by careful examination of Figure 24,A that in contrast to the maximum intensity area shown in Figure 18,A nonagricultural land has increased slightly between 1938 and 1965 in this sample of major intensity agricultural land. This is very often the situation throughout the category. The additional untilled areas are usually poorly drained depressions, now often occupied wholly or in part by trees which have for the most part appeared since the advent of the pneumatic tired tractor in the middle thirties. These depressions were cleared along with other land in the beginning and in most years, even though wet, they could be tilled by horse power. However, the pneumatic tired tractor which replaced the horse bogged down in them, and they were left untilled allowing trees to come in. Also, some depressions have returned to woodland because tile drains, in many cases installed before World War I have deteriorated and have not been replaced.

Examination of Figure 24,A reveals other changes from 1938 to 1965. Here also, fields have changed from small and square to large and oblong though to a lesser degree than in the case of the maximum intensity area. In several instances, the small areas attached to a farmstead and indicated to be partially wooded which appear in 1938 are gone in 1965. These represent some of the many orchards which have been removed. Some partially wooded areas have become wooded. This has occurred with regrowth of cut over

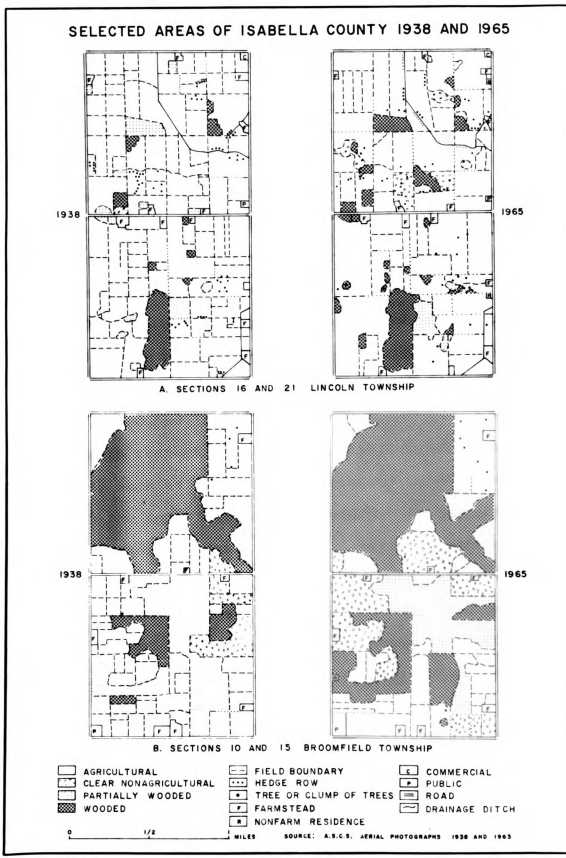

SELECTED AREAS OF ISABELLA COUNTY 1938 AND 1965
1938
1965
A. SECTIONS 16 AND 21 LINCOLN TOWNSHIP
1938
1965
B. SECTIONS 10 AND 15 BROOMFIELD TOWNSHIP
AGRICULTURAL
CLEAR NONAGRICULTURAL
PARTIALLY WOODED
WOODED
FIELD BOUNDARY
HEDGE ROW
TREE OR CLUMP OF TREES
F FARMSTEAD
R NONFARM RESIDENCE
C COMMERCIAL
P PUBLIC
ROAD
DRAINAGE DITCH
0 1/2 MILES
SOURCE: A.S.C.S. AERIAL PHOTOGRAPHS 1938 AND 1965

Figure 24

woodland. Had this been a maximum intensity area, it is quite likely that second stage clearing would also have been carried out and the land would then have been tilled rather than allowed to return to woodland. Some wooded areas have become partially wooded and this results from the cutting over of a woodlot mature enough to produce saw logs or pulpwood. Note also that a farmstead present on the east side of section 21 in 1938 is gone in 1965, and that nonfarm residences have appeared on the east sides of both sections 16 and 21, both common occurrences throughout the rural area. A change which the maps do not show is that the store and school house on the east side of section 16 were occupied in 1938 but abandoned in 1965.

With respect to the considerable development of hedgerows, such as in the area discussed above, and which is common to the major intensity category, the factors of more land per farmer and decreasing inclination toward hand work is also operative here, plus the previously noted disinterest in complete tillage in livestock areas. The often prolific growth of trees along fence rows and in poorly drained depressions along with the large wood lots give this category a closed aspect very much in contrast to the open aspect cited in the case of the maximum intensity category. The character of fences and hedgerows associated with major intensity agricultural lands varies somewhat with land type. In the till plain and the silt lake plain, fences, which are

now often obsolete and decrepit, are usually woven wire with a strand or two of barbed wire on top. The trees growing up along them are large hardwoods, such as elms, maples, oaks, and ashes, along with lower trees such as wild cherry, apple, and thorn apple. The fast growing elms have tended to dominate the hedgerows here and by their often very large size and characteristic shape have been a conspicuous feature of the landscape. In 1966, many are succumbing to disease, and the huge dead trees are an even more conspicuous element at the moment.

Fences in the sand lake plain are most often three or four strands of barbed wire. The trees growing up along them are largely aspens with some oaks and soft maples. In the sand hill areas of the western part of the County, fences may be any type of wire, and a peculiarity of hedgerows here is that they sometimes consist of sumac as much as fifteen feet tall. With sumac having a very characteristic silhouette, these have a definite impact on the personality of the landscape (Figure 25). Boulders are often plentiful in this morainic region, and the fence rows have sometimes been used as a disposal area for those removed from the fields (Figure 26). Also in the sand hills and especially in the dry sand plains, where pine was a large constituent of the forest, pine stumps were used for fences, some of which, often reinforced with barbed wire, still survive (Figure 27).

Figure 25. (right) Sumac along fence in sand hills area.

Figure 26. (left) Boulders along fence in sand hills area.

Figure 27. (right) Pine stump fence in dry sand plains area.

With the majority of major intensity agricultural lands existing in areas where livestock enterprises have been found more feasible than cash cropping, the usual crop association is alfalfa, corn, and wheat, though where these lands lie in juxtaposition to the maximum intensity lands of the silt lake plain, the beans, corn, wheat association is sometimes encountered. Specialty crops are now also to be noted in a few locations within this category. In the sand hill region of the northwest, several operators have large acreages of potatoes (up to 400 acres) or snap beans, mostly under contract to food processing companies. Such crops do well here, but must be heavily fertilized and are limited to locations where soils are suitable and water for irrigation is available, mostly along the streams. There is one large vegetable operation on muck land along the Coldwater River in this northwestern area. Small acreages of cucumbers are widely scattered and not limited strictly to major intensity land. This enterprise is big business in southern Chippewa Township in the sandy loam soils of the transition area between the sand lake plain and the silt lake plain.

With respect to quality, there is a great variety of crop conditions to be found in major intensity agricultural lands. In normal seasons, crop growth is fairly luxuriant in this category where it appears in the silt lake plain or the till plain, though, as previously mentioned, growth is usually not strictly even. However, luxuriant

growth in any of the sandy land types requires heavy fertilization plus either irrigation or greater than normal rainfall. In most cases the quality of staple field crops in these lands is obviously much below that found in the till plain or silt lake plain.

Today's field pattern within the major intensity agricultural lands as they exist in any of the sandy land types often shows strong contrast to that which has been noted thus far. Here, fields are often still small and square as they were before the coming of today's large power equipment (see Figure 28).

This category exists in varying degree in all of the County's rather inextensive clayey hills areas. In the steeper or sandier portions of these, the fragmentation and crop quality situations approach those of the sand hills, while the more gently rolling and better soil areas closely resemble the till plain in these respects. Field patterns tend to remain largely unchanged from early days, as in the sand hills.

Intermediate Intensity Agricultural Lands

These are a very small portion of any land type and are found not at all in either the sand or silt lake plain because their existence depends on a considerable diversity of physical conditions not to be found in either of these. This category does occur in the till plain, usually as a

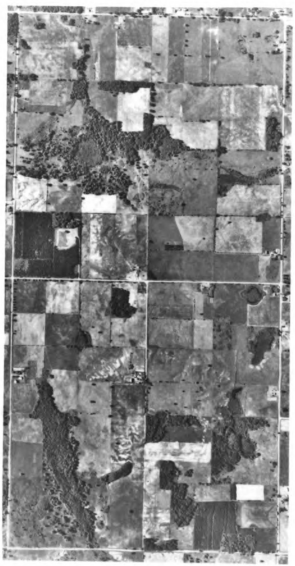


Figure 28. Aerial photograph of Sections 14 and 23, Coldwater Township, 1965.

result of very varied drainage conditions, or in the rough western sector of the County not only because of drainage but soil and slope conditions as well. Field patterns are irregular reflecting the diverse physical conditions. The crop association is the usual alfalfa, corn, wheat combination of the livestock areas.

Minimum Intensity Agricultural Lands

It has already been noted that lands falling within this category occur in the main in other than the till plain and silt lake plain land types. The sand lake plain, most of the muck and peat lands, the roughest of the sand hills, and the most sterile of the dry sand plains appear almost as blank space (minimum intensity) on the agricultural land use map (Figure 14). In those areas of the western part of the County where minimum intensity agricultural lands are not clearly dominant, they are still spatially a highly significant element, with agricultural use of the land occurring generally only in those well drained flatter areas which have the most silts and clays in the soil make-up.

Maximum Intensity Nonagricultural Lands

The nonagricultural land map, Figure 15, is in a sense the reverse of the agricultural land map, Figure 14 and its use amounts to turning the coin over and examining the other side, or to shifting the focus within the same

area from agricultural to nonagricultural land. As indicated in the foregoing discussion of Category I elements of the landscape, the maximum intensity nonagricultural land use category corresponds spatially to the minimum intensity category of agricultural land use, and in order better to show the varied character of the extensive lands falling within this classification, it has been subcategorized as previously indicated.

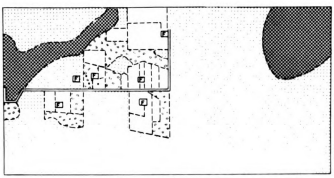
In the sand lake plain, in which maximum intensity nonagricultural lands exist to the near exclusion of others, forest is extensive, see Figure 15. In fact, the general aspect of this land type is that of woodland interrupted occasionally by clearings and partial clearings. Five and one-half square miles, an area which for the most part was never settled, lie within the Chippewa River State Forest. The infertile soils and unfavorable moisture conditions which have proven so detrimental to agricultural are also deleterious to tree growth, and much of this forest is of little commercial value. The oak-aspen association is dominant here as it often is throughout the County's wooded portions, a situation which follows from the fact that, so far, only the sandy lands, on which oaks and aspens are the most successful competitors, have been allowed to return to forest to any considerable degree.

As discussed in Chapter VI, the never robust agriculture of the sand lake plain was in decline by the beginning of the recent period, and the pasture enterprises which existed for a while following the virtual demise of agriculture have now tapered off toward the vanishing point. Some notion of the effect of the abandonment of agricultural and pastoral land may be gained from study of Figure 29. Much of the field pattern, still discernible in 1938, has disappeared by 1965. Partially wooded sections have become wooded, and some clear portions have become partially wooded. Two of the six farmsteads were abandoned by 1938, and none were occupied in 1965.

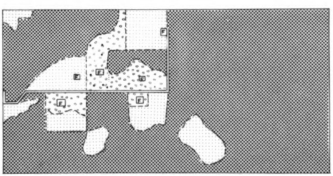
Clearly, within the sand lake plain there is a strong tendency toward return to forest. However, there are local exceptions, where some rather limited commercial cutting of pulpwood or fireplace wood is expanding the partially wooded area at the expense of the forest. Figure 30 shows one of the more completely wooded portions of the sand lake plain (the diagonal clear strip results from recent installation of a pipe line), while Figure 31 shows a section where return to woodland is less complete.

It may be seen from Figure 15 that, in general, the maximum intensity nonagricultural lands of the west consist somewhat less of forest than those of the east, though forest is conspicuous. These lands have been more completely and more recently cultivated, with the result that there is

SELECTED AREAS OF ISABELLA COUNTY 1938 AND 1965



1938



1965

THE SOUTH ONE-HALF OF SECTIONS 23 AND 24
AND THE NORTH ONE-HALF OF SECTION 25 AND 26
OF DENVER TOWNSHIP

AGRICULTURAL
CLEAR NONAGRICULTURAL
PARTIALLY WOODED
WOODED

FIELD BOUNDARY
TREE OR CLUMP OF TREES
FARMSTEAD
ROAD

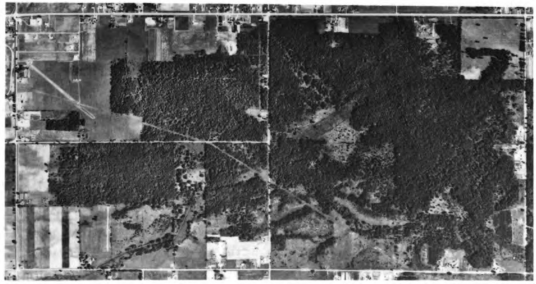
0 1/2 1 MILES

SOURCE: A.S.C.S. AERIAL PHOTOGRAPHS 1938 AND 1965

Figure 29

Figure 30. Aerial photograph of Section 1 and 2, Wise Township, 1965.

Figure 31. Aerial photograph of Sections 15 and 16, Chippewa Township, 1965.



now much clear and also mixed wooded and clear nonagricultural land as well as forest. The tendency toward increase of all these types of nonagricultural lands may be noted from examination of Figure 24,B.

The largest unbroken block of maximum intensity nonagricultural land occurs in the sand hill and muck and peat area of the northwestern part of the County.[1] A portion of this area was also never settled, and though of course it was cut over, it has been allowed to return to forest. The oak-aspen association is dominant in the sand hills and some variety of the lowland associations is found on the muck and peat. The oak-aspen forest is of better quality here than in the sand lake plain, and is being cut over for pulpwood to a greater extent.

Where cattle are still present in the sandy lands, they are in most cases still on pasture rather than in feed lots, and some of the clear or partially clear maximum intensity nonagricultural lands here are still being used as permanent pasture. Figure 32 shows a steep morainic hillside which has been "terraced" by cow paths running parallel

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[1]The area included is approximately twenty-five square miles. The definition of the maximum intensity category nonagricultural land does not rule out the possibility of the occurrence of some agricultural land, but there are no agricultural plots as large as forty acres, and in no square mile does the percentage of agricultural land probably rise above 11 percent.

Figure 32. (right) Pastured hill side in sand hills area.

Figure 33. (left) Hill side returning to forest in sand hills area.

Figure 34. (right) Hill side in sand hills area where stumps and boulders were never removed.

across the slope. Small trees show the general tendency to return to woodland. Both features are common in the sand hills.

The vegetation of the partially wooded areas is some mixture of grasses, ferns, sumac, and trees, with the latter being most often oaks and aspens. Figure 33 shows a once open hill side returning to forest. There being no pine stumps evident, it is assumed that this area was once cultivated. Remains of fences indicate that it was once pastured. Some of these partially open nonagricultural lands were never tilled to any great extent but no doubt all have been pastured, else they would now be completely wooded. An example is shown in Figure 34 where pine stumps and boulders have not been cleared. These pictures were taken in August in areas which had not been pastured during the current season. The short and sparce vegetation indicates the generally unfavorable growth conditions. Use of clearings for pasture in the sandy lands has been discouraged both by low carrying capacity and short season. Early maturing grasses, rapid drainage and summer drought often turn these areas brown by the end of June or the middle of July. Much of the clear land recently retired from tillage has been withdrawn through one of the United States Department of Agriculture programs discussed in the previous chapter. This holds true in general for all land types.

Though considerable agricultural land still exists in the dry sand plains, in 1966, more than half falls into the maximum intensity nonagricultural category. Figure 35, the aerial photographs of sections 11 and 14 of Rolland Township in the southwest, shows a typical area of this land type. Only forty acres on the east side of section 11 and about the eastern one-fourth of section 14 remains in agricultural use in 1966.

Maximum intensity nonagricultural lands occupy a great proportion of the extensive muck and peat lands. As previously noted, most of this is forested, but some has been cleared, especially in the area along Cedar Creek in Fremont Township in the central south. Clear and partially clear fields in this land type are still usually pastured, as these lowlands stay green and to some extent productive throughout the summer. They are, however, extremely hospitable to large weeds, like the bull thistle, which tend to take over the fields.

The nonagricultural map also shows maximum intensity nonagricultural lands scattered with some frequency through the till plain and portions of the silt lake plain. Sometimes these consist of woodlots that farmers have preserved on the interiorward portions of farms, coalescing to form forested acres large enough to be mapped as maximum intensity nonagricultural land. They bear a relationship to the character of the land in that they are more numerous and

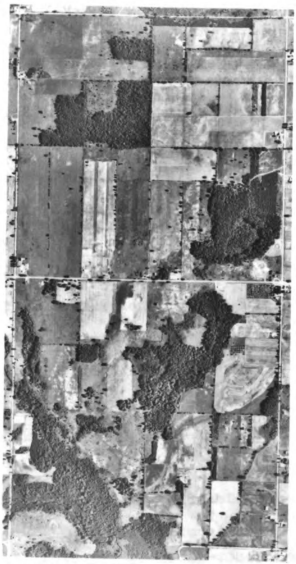

Figure 35. Aerial photograph of Sections 11 and 14, Rolland Township, 1965.

larger where conditions in general are least favorable to agriculture, but they bear little relationship to physical variation within the square miles in which they occur, the central location being the result of the fact that farm woodlots usually represent the last remnant of the original forest and now occupy the land most remote from the road and buildings, both because clearing proceeded from the roads interiorward and because with woodlots requiring no rush season attention, remote location is less a handicap than for agricultural lands. Woodlots close to roads or buildings, however, are often associated with difficult soil, slope, or drainage conditions. In the till plain, woodlots usually consist of upland hardwoods, and in the silt lake plain, of lowland hardwoods (see Chapter II).

In some cases, spots of maximum intensity nonagricultural lands occurring in the till plain and silt lake plain consist of recently tilled lands now idled under a United States Department of Agriculture program. A difference between such land as it occurs in the silt lake plain and as it occurs in the sandy lands is that in the lake plain with its tendency toward increase of the tillable area, the land almost certainly would be agricultural were it not for the U.S.D.A. program, while in the sandy lands with their tendency toward agricultural decline, this is problematical.

Intermediate Intensity Nonagricultural Lands

In most cases, the nonagricultural elements present in this category are irregularly shaped blocks of woodland less than 40 acres in size. Where this category occurs in the till plain, these woodlands occupy depressions and consist largely of swamp species. Where it occurs in the rougher lands, the wooded areas may be steep slopes as well as depressions, and species may be either upland or lowland varieties.

Minor Intensity Nonagricultural Lands

Occurring as it does in conjunction with the major intensity agricultural lands, minor intensity nonagricultural land exists in large continuous blocks to the greatest extent in the till plain and margins of the silt lake plain with fragmented though significant occurrence elsewhere. The nonagricultural elements here are of course, those described in the discussion of the major intensity category agricultural lands, the most notable features of which are woodlots, hedgerows, and wooded depressions.

Minimum Intensity
Nonagricultural Lands

The distribution of this category is also that of the maximum intensity agricultural lands of which it is the opposite number. Thus the nonagricultural elements involved are as described in connection with those agricultural lands, differing from nonagricultural elements of the minor intensity nonagricultural lands for the most part only in their more limited extent.

CHAPTER VIII

COMPONENTS OF THE PRESENT LANDSCAPE: SHELTERS

Structures erected to provide shelter for a human activity (Category II elements of the rural landscape) are, throughout most of the County, ubiquitous and conspicuous features of the landscape. Farmsteads were the earliest and are still the most nearly omnipresent of these.

Farmsteads

Farmsteads of the recent period will be discussed with respect to several attributes. These are: (1) numerical changes through time, (2) present spatial distribution, (3) state of maintenance, and (4) functional evolution, all of which are related both to culture and to diversity of physical environment.

Numerical Changes Through Time

The United States Census of Agriculture records the greatest number of farms in Isabella County in 1910. It therefore seems reasonable to assume that the greatest number of farmsteads existed just prior to the beginning of the recent period. With the number of census farms dropping

from 3,456 in 1910 to 1,570 in 1964 and certainly somewhat lower still by 1966, the need for farmsteads has decreased very materially during the recent period, and while the number of farmsteads has decreased, farmsteads still considerably outnumber farmers. A plat of the County for 1915[1] shows 3,880 symbols, which in the opinion of the writer may safely be assumed to be farmsteads. The 1966 field check revealed a total of 2,720 farmsteads now in existence,[2] indicating a decrease of 1,160 since 1915. However, despite this large overall decrease, some local gains have occurred.

Figure 36 shows the distribution of numerical change from 1915 to 1966, from which it may readily be seen through comparison with Figure 1 that decrease has been most severe in the sand lake plain, least severe in most of the silt lake plain and till plain, and somewhat intermediate in the remainder. Local gains in certain square miles of the sandy lands seem mostly to represent late entry there, so that even though some abandonment and some disappearance has occurred, more farmsteads nevertheless existed in 1966 than in 1915. The infrequent gains in the silt lake plain and till plain represent fragmentation of lands already long occupied.

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[1] Atlas of Isabella County, 1915.

[2] Includes abandoned farmsteads, but not abandoned farmstead sites where no buildings remain.

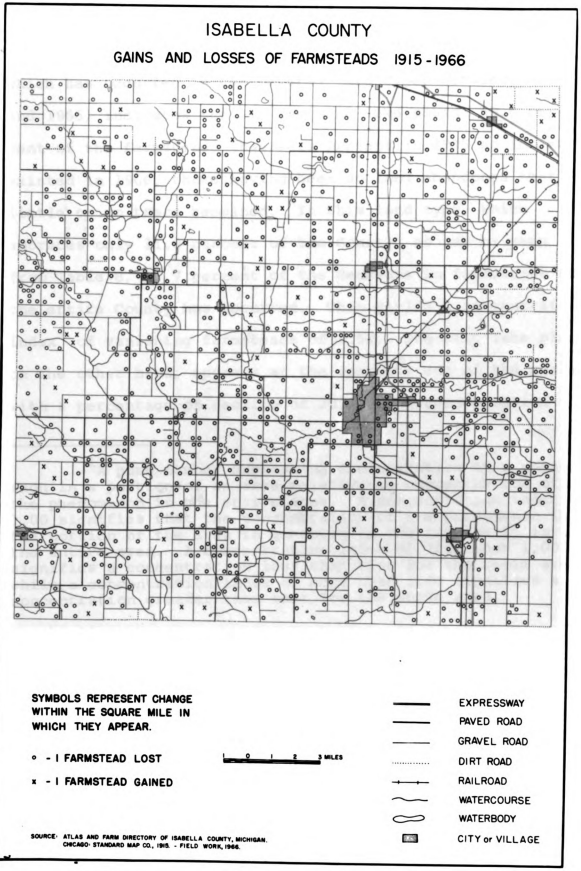
ISABELLA COUNTY
GAINS AND LOSSES OF FARMSTEADS 1915 - 1966
SYMBOLS REPRESENT CHANGE WITHIN THE SQUARE MILE IN WHICH THEY APPEAR.
o - 1 FARMSTEAD LOST
x - 1 FARMSTEAD GAINED
0 1 2 3 MILES
EXPRESSWAY
PAVED ROAD
GRAVEL ROAD
DIRT ROAD
RAILROAD
WATERCOURSE
WATERBODY
CITY or VILLAGE
SOURCE- ATLAS AND FARM DIRECTORY OF ISABELLA COUNTY, MICHIGAN. CHICAGO: STANDARD MAP CO., 1915. - FIELD WORK, 1966.

Figure 36

Table 7, showing the drop in numbers of farmsteads which has occurred in the several land types between 1915 and 1966, indicates that in the sand lake plain, 59.6 percent of the farmsteads that were present in 1915 no longer existed in 1966, those having been so long abandoned that little or no trace remained. In this land type, which embraces only 11.0 percent of the County, as may be seen from Table 8, 16.7 percent of the decrease in farmsteads for the entire County has occurred. This yields a concentration index[1] of vanishing farmsteads of 1.52. The silt lake plain, on the other hand, appears at the opposite end of the scale with a percentage of decline of 20.2 and a concentration

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[1] A pure number expressing concentration of a phenomenon in a portion of an area relative to concentration of the phenomenon in the entire area. A concentration index of 1.00 signifies that the concentration of the phenomenon in the portion of the area in question is the same as it is in the entire area. A concentration index of less than 1.00 signifies a concentration less than that for the whole area, while a concentration index of more than 1.00 signifies a concentration greater than that for the whole area.

Computation:

$$\frac{\text{Percent of total phenomenon existing in a given portion of an area}}{\text{Percent of total area constituted by the given portion}} = \text{Concentration index.}$$

Example:

$$\frac{\text{20\% of total phenomenon}}{\text{20\% of total area}} = \text{Concentration index of 1.00}$$

$$\frac{\text{25\% of total phenomenon}}{\text{20\% of total area}} = \text{Concentration index of 1.25}$$

$$\frac{\text{15\% of total phenomenon}}{\text{20\% of total area}} = \text{Concentration index of .75.}$$

Table 7. Decrease in farmsteads by land type, 1915 to 1966

Land Type	Number in 1915	Number in 1966	Percentage of Decrease 1915 to 1966	Percentage of Total Decrease in County	Concentration Index
Silt lake plain	864	691	20.2	14.9	.75
Till plain	1,274	999	21.6	23.7	.85
Sand lake plain	324	131	59.6	16.7	1.52
Sand hills	710	460	35.2	21.5	1.08
Remainder	708	439	38.0	23.2	1.10

Table 8. Land type area

Land Type	Approximate Square Miles	Percentage of Total Area
Silt lake plain	114	20
Till plain	160	28
Sand lake plain	62	11
Sand hills	114	20
Remainder	119	21

index for the phenomenon of .75. The situation in the till plain is similar with the percentage of drop being 21.6 and the concentration index, .85. Percentages of decline within the other land types,[1] and concentration indices for vanishing farmsteads within these types relative to the entire area may be seen to fall between these extremes. Thus it may be noted that the loss of farmsteads has been least in

[1] In the opinion of the writer, the dry sand plains are too fragmented, and the clayey hills and the muck and peat lands are both too fragmented and too limited in extent to admit of meaningful separate treatment. The farmsteads existing in any of these lands are more likely to serve farming operations which span several land types than is the case with farmsteads in the other less discontinuous and more extensive lands. Therefore, these three land types are treated together as a fifth unit in the tables concerned with the relationship between farmsteads and land types. This very considerable fragmentation of land type exists for the most part in a north-south trending strip in the western one-third of the County, see Figure 1.

areas which have proven most favorable to agricultural development, progressing to greatest in those lands that have proven least favorable to agriculture, reflecting the high rate of farmstead abandonment and eventual disappearance of farmsteads in these latter areas. It might also be noted that, in general, the lands which were settled earliest, that is, the silt lake plain and the till plain, have experienced the smallest decline in numbers of farmsteads, the only conspicuous exception being the extreme eastern portion of the northern segment of the silt lake plain.

Present Spatial Distribution

That there is considerable variation in the present density of farmstead occurrence may be seen from the farmstead category map, Figure 41. Table 9 shows the total number of farmsteads as well as the percentage of the County's total farmsteads and the farmstead concentration index existing in the various land types. From Table 9 it may be seen that both greatest total numbers and greatest concentration of farmsteads are to be found in the silt lake plain and till plain land types, where agriculture has proven most feasible. This results in concentration in the central, the north central, the north central eastern, and the entire southern portions of the County, leaving generally low concentration and even blank spaces elsewhere in the other land types.

Table 9. Farmsteads per land type, 1966

Land Type	1966 Total	Percentage of Total	Concentration Index
Silt lake plain	691	25.4	1.29
Till plain	999	36.7	1.31
Sand lake plain	131	4.8	.44
Sand hills	460	16.9	.85
Remainder	439	16.2	.77

Maintenance

Two areas are outstanding with respect to relatively high standards of farmstead maintenance. One is the north central section, especially Nottawa Township, which was mentioned in Chapter VI as an area where pride of ownership is still evident. This is the one area of the County today which is truly a land of white houses and big red barns, in the most literal sense, with all buildings usually in good repair and well painted (see Figure 37). There is evidence, however, that necessary as it may be, more than pride of ownership is involved. Immediately upon leaving the till plain land type and moving into the considerably less favorable agricultural area of the moraine (sand hills and clayey hills land types) which exists in the northwest corner of the township, farmsteads more often resemble that shown in Figure 38.

Figure 37. Small, well maintained farmstead (minimum modification).

Figure 38. Hill land farmstead (minimum modification).

The other area in which farmstead buildings are most often well painted and otherwise in good repair is the silt lake plain portion of the eastern side of the County, though this does not qualify quite so literally as "big red barn country" because here, barns are of the smaller and often older straight roofed cash crop type. The superior income producing capability of this land provides the means for superior maintenance and probably has something to do with the pride of ownership necessary to carry it out. Also, no doubt the additional value which attractive farmsteads impart to this already high priced land is a factor, with the farmer hoping to protect or enhance his high investment.

At the other end of the scale with respect to farmstead maintenance is the sand lake plain and the sand hill land types. Farmsteads here are often somewhat run down in appearance as in Figure 38. In the sand hills, the most dilapidated facilities, other than those on abandoned farms are sometimes associated with the larger full time operations. It would seem that this land often yields the farmer little beyond a minimal living. Nothing in the way of pride in the farming operation is indicated. The few well maintained farmsteads that do exist here are most often the property of ex-farmers with good jobs off the land, who have both time and money to invest in appearance.

Throughout the remainder of the County, little in the way of broad correlation between area and farmstead

maintenance is readily apparent. In the till plain lands other than the north central section, as well as the interior sand plains, maintenance runs the gamut from very good to very bad, seemingly often dependent on the ability and inclination of the individual owner, though certainly the great variation of physical conditions present in these land types is also a factor.

Functional Evolution

The evolution of use and design occurring in response to cultural change, taking place both locally and throughout the western world, is a feature of great interest in a study of the rural Isabella County landscape of 1966. In order to facilitate description of this evolution, farmsteads (Category II,A elements of the landscape, see Appendix) have been subcategorized as follows:

1. Farmsteads in use essentially for the purpose for which they were originally designed, with minimum modification, termed "minimum modification farmsteads."

2. Farmsteads extensively modified, either for a new function or the expansion of a previous one, termed "modified farmsteads."

3. New farmsteads, whose design is in keeping with post World War II technology, termed "new farmsteads."

4. Farmsteads whose form remains essentially unchanged, but whose function has changed, termed "modified function farmsteads."

5. Farmsteads in which only the residence is in use, termed "residence use farmsteads."

6. Farmsteads in which the residence is unused, termed "abandoned residence farmsteads."

7. Farmsteads of which no dynamic use is being made, termed "abandoned farmsteads."

With the exception of some few farmsteads whose buildings were constructed after the advent of rural electrification and the pneumatic tired tractor, there are few operating farmsteads in the County which have not undergone a degree of modification. Some of these changes were already underway before World War I and have been touched upon in Chapter V, but changes since World War I and especially since World War II, of the nature discussed in Chapter VI have been much more extensive and rapid.

Minimum modification farmsteads.--However, even though virtually all farmsteads incorporated many of these changes, some still were not greatly altered in outward appearance and perhaps no more than $5,000 was invested in the process. It is these without drastic change, which are still being used mainly for the purpose for which they were built, that are classified Category II,A,1 or minimum modification farmsteads. With very few exceptions, farmsteads built prior to the latter half of the present period were designed for diversified operations and were intended to accommodate some livestock (certainly horses, and probably cows, swine, and poultry, at least to the extent of supplying the family and perhaps furnishing grocery money) even on farms where cash cropping was dominant. Today, the

farmsteads, whose buildings are still used in animal husbandry as originally intended with relatively little change, are to be found on diversified farms or on livestock farms (often relatively small). Minimum modification farmsteads now constitute only 25.1 percent of the county total. Most of the others, with the exception of a few new ones, have been more extensively modified, have taken on a different function, or have been partially or totally abandoned. Generally, the farmsteads occupied by elderly farmers trying to stay with farming as their sole occupation until retirement age fall into this classification.

Figure 39 shows a large, well maintained farmstead of the minimum modification category, while Figure 37 is a smaller example of the same. Both are in a maximum intensity agricultural area in till plain. Figure 38 is an example of the many less well maintained farmsteads of this category occurring in the hill lands or in the dry sand plains. Samples of this category, such as that in Figure 40, of moderate size and mediocre state of preservation are common throughout the major intensity agricultural areas, especially in till plain.

Some notion of the distribution of farmsteads of the minimum modification category may be gained from Figure 41 which shows the location of each of these plus locations of all other types as a single class. With respect to absolute numbers they may be seen to concentrate somewhat in

Figure 39. Large, well maintained farmstead (minimum modification).

Figure 40. Farmstead of mediocre size and condition (minimum modification).

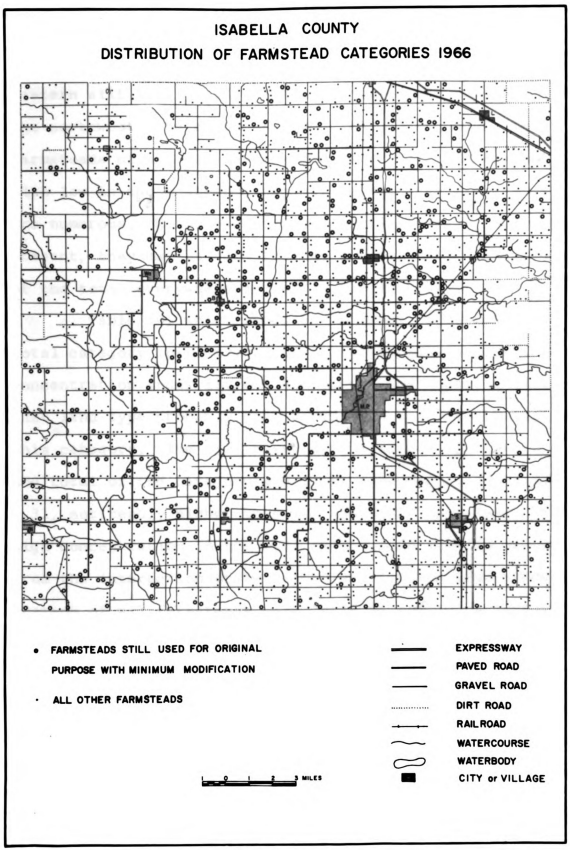
ISABELLA COUNTY
DISTRIBUTION OF FARMSTEAD CATEGORIES 1966
• FARMSTEADS STILL USED FOR ORIGINAL PURPOSE WITH MINIMUM MODIFICATION
· ALL OTHER FARMSTEADS
0 1 2 3 MILES
EXPRESSWAY
PAVED ROAD
GRAVEL ROAD
DIRT ROAD
RAILROAD
WATERCOURSE
WATERBODY
CITY or VILLAGE

Figure 41

the central and north central portion of the County in the till plain and western part of the northern division of the eastern silt lake plain. They are few in the central west, the northwest, the northeast, and the central east where farmsteads of all classes are few, but their numbers are also low in the southeast where farmsteads of all classes are numerous. With respect to proportion of all farmsteads present, they may be seen to form a substantial percentage of the total everywhere except in the southeast.

Table 10, which shows the numbers, percentages of total category, percentages of all farmsteads present, and concentration index for the different land types, indicates that land type probably does enter into the distribution of this category. The till plain land type has 36.7 percent of the total of the category and shows a concentration index of 1.31, noticeably higher than for any other land type. The high concentration in the till plain would seem to result from the interaction of two factors: (1) the high concentration of all farmsteads (see Table 9) and (2) a survival rate about average for the County as a whole of the general farm and the small scale livestock farm. It may be noted from comparison of Tables 9 and 10 that the till plain areas have the same percentage of total minimum modification farmsteads as of total farmsteads, and hence identical concentration indices for the two phenomena.

Table 10. Relationship of farmstead categories to land types, 1966

Land Type	Minimum Modification Farmsteads				Modified Farmsteads				Modified Function and Residence Use, Only Farmsteads				Abandoned Farmsteads			
	1[a]	2[b]	3[c]	4[d]	1[a]	2[b]	3[c]	4[d]	1[a]	2[b]	3[c]	4[d]	1[a]	2[b]	3[c]	4[d]
Silt lake plain	84	12.3	12.2	.62	41	25.9	5.9	1.30	471	33.9	68.2	1.70	84	19.0	12.2	.95
Till plain	251	36.7	25.1	1.31	79	50.0	7.9	1.79	529	38.1	53.0	1.36	120	27.1	12.0	.97
Sand lake plain	34	5.0	26.0	.45	2	1.3	1.5	....	61	4.4	46.6	.40	34	7.7	26.0	.70
Sand hills	148	21.6	32.2	1.08	16	10.1	3.5	.51	178	12.8	38.7	.64	110	24.9	23.9	1.25
Remainder	167	24.4	38.0	1.16	20	12.7	4.6	.60	149	10.8	33.9	.51	94	21.3	21.4	1.01

[a]1 - Total number of farmsteads of the specified category in the land type.

[b]2 - Percentage of the County total of the specified category which exists in the land type.

[c]3 - Percentage of total farmsteads in the land type constituted by the specified category.

[d]4 - Concentration index.

The silt lake plain on the other hand, though it has a similar concentration index of total farmsteads (1.27 as compared to 1.31) has a much lower concentration of minimum modification farmsteads (.62 as compared to 1.31). This circumstance seems primarily due to a high incidence of cash cropping coupled with today's high degree of commercialization of agriculture, both of which factors presently tend to rule out livestock. Now that the tractor has replaced the horse and the supermarket has replaced the cow, the sow, and the hen in supplying the farm table, most farm buildings in the silt lake plain, no longer serve their original function.

It may be observed from Table 10 that the concentration of minimum modification farmsteads is higher in the sand hills and the highly fragmented land types than in the County as a whole (concentration index over 1.00) and that this is a corollary of the relatively high percentages of total farmsteads within these areas constituted by this category, e.g., 32.2 percent for the sand hills as against 25.1 percent for the till plain and 12.2 percent for the silt lake plain. Most of the farmers who remain in business in these marginal areas do so by virtue of using the old plant with minimal investment in updating.

Modified farmsteads.--The 1966 field survey revealed 164 farmsteads (6.0 percent) in the County which have been extensively altered either for the purpose of expansion or specialization. The most numerous and most obvious of these

have been modified for dairy or beef enterprises. Figure 42 is a typical example of the former. The small white masonry structure on the front of the high round roofed barn is a milk house. The concrete stave silo at the end of this barn and the low building attached to the rear, which is a loose housing shelter for cattle, represent the first stage of an extensive modification. The second and larger concrete silo and the second loose housing shelter[1] to the rear of the first represents a second stage of the expansion modification. Somewhere in the complex, probably in the old barn near the milk house, is very likely a milking parlor into which cows from the loose housing areas are admitted in groups of four, six, or eight for milking. The high barn predates World War I. The main expansion postdates World War II. The investment here will have run into many thousands of dollars.

Figure 43 is an example of another multistage expansion. The lean-to shelter at the right end of the old central barn is a milk house and this plus the relatively small

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[1]This building is called a "pole barn" and is constructed by placing posts (usually of lodge pole pine) on concrete pads in the earth in such a manner that the posts become both the foundation and the main structural members of the building. The surface is covered with sheet metal. In new construction, these buildings have very largely constituted the replacement for the high rise barn, which has been entirely discontinued since the greatly expanded use of the silo for storage of hay crops, and the advent of the pick-up bailer and the field chopper, which events have much reduced the need of storage space for dry hay.

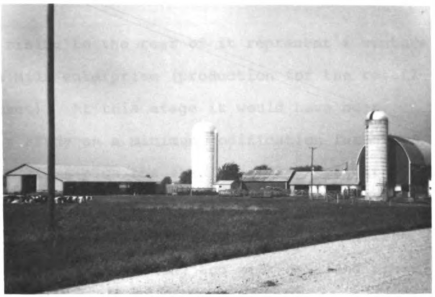

Figure 42. Extensively modified farmstead (dairy).

Figure 43. Extensively modified farmstead (first for dairy, then beef).

concrete silo rising to the rear of it represent a venture into a Grade A Milk enterprise (production for the retail fluid milk market). At this stage it would have been classed in this study as a minimum modification farmstead. The four larger silos plus the steel buildings at either end of the old central barn came partially with expansion of the dairy enterprise and partially with a recent switch from dairy to beef, which left milking and milk handling areas and equipment unused and called for shelter and feed storage for the greater numbers of cattle required by a beef operation, if it is to equal the income producing capacity of a dairy enterprise. (The return per animal of a beef enterprise is lower than in dairying, but the return per hour can be greater and the time schedule is less demanding.)

Farms have been getting larger since settlement began, and some expansion of facilities has constantly taken place. However, prior to World War II, this mostly involved building more of the same, i.e., expanding the size of an old building or building new ones not radically different from the old, hence these changes were less noticeable than those described above, which often involve the addition of facilities of a type quite different from the old.

Visual comparison of Figure 44 with Figure 1 shows a considerable proportion of the extensively modified farmsteads occurring in the till plain land type, especially in the north central portion of the County. As may be seen

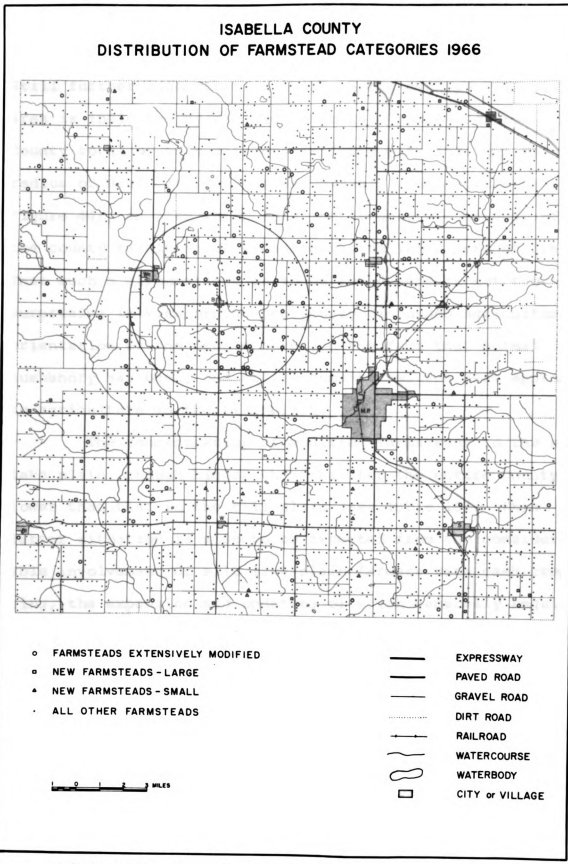

Figure 44. (Circle explained on page 251.)

from Table 10, 50.0 percent of the total of this category occurs in the till plain for a concentration factor of 1.79. Still further concentration in the north central till plain area is indicated by the fact that 23.2 percent of the County total of this category is found within a four mile radius of Beal City in Nottawa Township (note circle on Figure 44), an area which constitutes only 8.8 percent of the county resulting in a concentration index here of 2.62. That such a circumstance is to be found here is not too surprising in view of the previously discussed agricultural orientation of the people here and the fact that animal husbandry has been, and still seems to be, the best approach to agriculture in the till plain.

The concentration of modified farmsteads in the silt lake plain, though higher than that for the entire County is lower than that in the till plain (see Table 10). This latter situation is also to be expected from the considerable involvement of silt lake plain farmers with cash cropping, the expansion and updating of which generally requires much less extensive modification of the old farmstead (though the investment in machinery may be great) than the expansion and updating for livestock enterprises. Comparison of Figures 44 and 1 shows the greatest density of those modified farmsteads which occur within the silt lake plain to lie in the western part of the northern segment of this land type, where the till surface was least extensively

water modified and which is thus closer in character to the till plain as well as being adjacent to the livestock oriented Beal City area.

Table 10 shows a low to negligible density of modified farmsteads in all land types other than the silt lake plain and till plain. This circumstance reflects the inadvisability at present of heavy investment in agricultural facilities in lands less favorable to agriculture than these.

New farmsteads.--In spite of the fact that turn of the century farmsteads leave much to be desired when viewed within the framework of mid-twentieth century technology, most County farmers have chosen to modify or tolerate the old rather than to replace, largely because of the rising cost of new facilities and the decreasing return on investment. There are, however, twenty-four large operations with farmsteads (other than the residence) that are completely new since World War II, and most postdate the middle fifties. Twelve of these are cattle farms. A beef operation is shown in Figure 45 and a dairy in Figure 46. Cattle enterprises require the largest physical plant, and farmsteads connected with them are conspicuous features of the landscape because of the huge silos, some of which are sixty feet high and twenty feet in diameter. It is the silos which are the striking characteristics of the new cattle farmstead, rather than the big red barn as in the past. There are several other specialized types of new farmsteads. These, which are

Figure 45. New farmstead (beef).

Figure 46. New farmstead (dairy).

specifically tree, truck, poultry, cash crop, and fruit, have from one to four representatives each among these large new operations.

There are also several new small farmsteads. These are obviously not connected with full time farming. They are mostly the property of individuals with good off the farm income who, having a yen to do a little farming, have purchased a piece of land, constructed some small new facilities, and have then proceeded to do a little farming, for a while at least. Most are more by way of avocation than vocation and are landscape evidence of general affluence rather than agricultural productivity. Several riding horse farms appear among these. Otherwise they are mostly cash crop and cattle operations. Numbers of new farmsteads in general are too small to warrant an attempt to discuss distribution.

Modified function and residence use farmsteads.--Farmsteads of Category II,A,4 (modified function) and those of Category II,A,5 (residence use) are very different in their extreme aspects. An example of the former is the case in which a farmer has disposed of a dairy herd and now uses the old dairy barn for swine shelter without drastic structural changes. An example of the latter is the case of a farmstead in which the farmhouse is now occupied by a non-farmer who makes no use of the other buildings.

On the other hand, the difference between the case of a farmstead in which a former dairy barn is used by an ex-farmer only to store obsolete and unused machinery and which thus has no agricultural function, and that of a farmstead in which a part time farmer, who actually farms very little, does use some of his stored machinery a few times a year is rather arbitrary. Two separate categories, represented by separate symbols on Figure 47 were used because in most cases a clear cut difference exists between them. However, both because of their merging nature which reduces somewhat the significance of any attempt at statistical differentiation and because of certain attributes which they have in common, they are discussed together.

In the first place, neither is what it seems to a stranger driving through the rural area. The big barns and many outbuildings, sometimes well maintained, suggest herds of cattle and swine, and flocks of sheep and chickens being dilligently cared for by the farmer and his family, while closer examination may reveal something quite different. For instance, absence of foot paths to barn doors and, as in Figure 48, a barnyard grown over with weeds and grass is a usual indicator that no cattle are present. In this case, missing windows and doors are also evidence of lack of use for the intended purpose. This barn is being used as a machine shed and is thus an example of modified function.

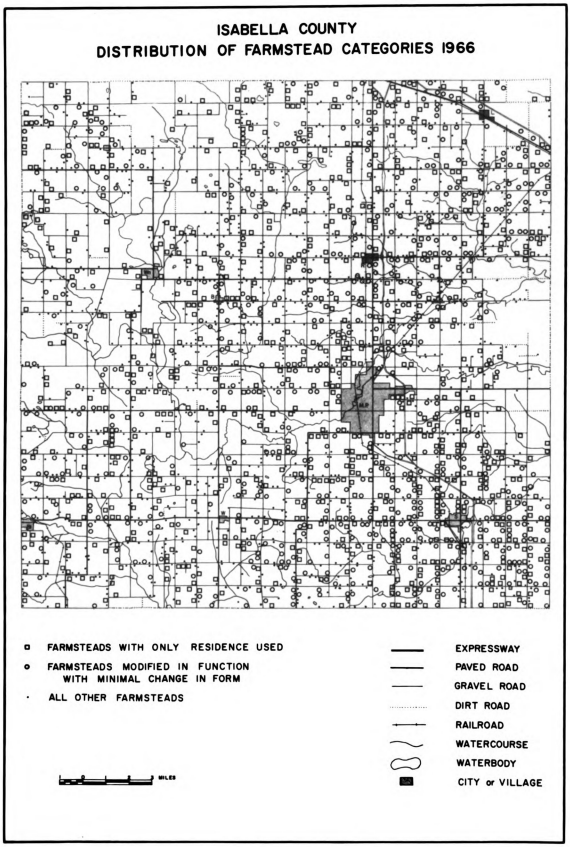
ISABELLA COUNTY
DISTRICT OF FARMSTEAD CATEGORIES 1966
FARMSTEADS WITH ONLY RESIDENCE USED
FARMSTEADS MODIFIED IN FUNCTION WITH MINIMAL CHANGE IN FORM
ALL OTHER FARMSTEADS
MILES
EXPRESSWAY
PAVED ROAD
GRAVEL ROAD
DIRT ROAD
RAILROAD
WATERCOURSE
WATERBODY
CITY or VILLAGE

Figure 47

Figure 48. Barn of modified function category (readily apparent).

Figure 49. Barn of modified function category (not readily apparent).

Figure 49 appears to be a well maintained minimum modification farmstead with a dairy operation. However, circumstances which do not show in the picture are that in this case the grass has been cut with a lawn mower, the manure handling equipment is unused, there are no foot paths to the tightly closed barn doors, and no truck tracks by the milk house, hence no dairy herd. However, the open machine shed door and tractor tracks on the hay loft approach of the barn show that the buildings are in use for storage of equipment and products, and that this farmstead thus also falls into the modified function category.

Gates across stable doors usually indicate that swine, sheep, or perhaps feeder cattle are now being penned in what formerly was most likely a dairy cow barn. Loose full length hay or straw in a hay loft revealed by open doors or missing boards, indicate no cattle present for several years past, as all hay and straw is now bailed or chopped.

A second common attribute is that farmsteads of either category may result from a common cause, i.e., abandonment of the farming operation which may or may not entail abandonment of the land. If a farmhouse continues to be occupied while the land is incorporated into another operation, the buildings may be used by the new farmer for storage with a modified function farmstead resulting, or the buildings may stand essentially unused, in which case the

farmstead now falls into the classification of residence use only. If the land as well as the farming program is abandoned, with the residence remaining occupied, the buildings most often are then unused, though in some cases they may still be used by neighboring farmers for various purposes, but almost always, not those for which they were designed.

On the other hand, part time farming, arising either from work off the farm or from partial retirement results often in changed function, but never total disuse of the buildings. Cash cropping, full time or otherwise, also usually results in modified function farmsteads, as some type of animal husbandry operation has nearly always been suspended since the construction of the farmstead, either in the case of the instigation of a new cash crop operation or in the continuance of an old one, as previously noted in the discussion of minimum modification farmsteads.

The number of farmsteads in the combination of these two categories is considerable--1,289 of a total of 2,720. This is not surprising in view of the general movement away from full time farming. As mentioned in Chapter VI, a 1966 field check revealed only 597 farmers in the County who did not work off the farm. Ninety-nine of the wives of this group did work off the farm, and many of the farmers themselves, while not working off the farm, were not really

fully employed on it. An additional 354[1] farmers were found who did work off the farm, and 77 wives of this group did likewise.

With less than 600 farmers without off the farm work, and some of these being semiretired, it is obvious that a high proportion of the more than 2,700 farmsteads in the County, if occupied at all, are occupied by part time farmers or nonfarmers, which means that most of these farmsteads will fall into one of the two classes under discussion. Many farmhouses are indeed occupied by nonfarmers. Some are relatives of an elderly owner, while many have discovered that they could buy a farm and use the old farmhouse, which has often been extensively updated, for something like the same investment required to buy a small plot of land and build a new house on it.

Abandonment of outbuildings or modification of their use is by no means limited to the old and least extensively modernized farmsteads. Some with a very high investment in remodeling now fall into one of these categories, as

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[1]The 1966 field survey revealed a total of only 951 farmers, while the 1964 census of agriculture reported 1,570. There are two reasons for this discrepancy. One is that many farmers quit between 1964 and 1966. The other is that the field count was based upon the opinion of the individual himself or that of a responsible person familiar with his operation (usually the township supervisor), and some of those who were classed as farmers according to the census definition, actually derived so little income from agriculture that they did not consider themselves to be farmers.

operators give up and seek other employment. This is also true of some new small farmsteads, as owners become disenchanted with their limited operations.

With regard to the separate existence of these categories, in Figure 47 farmsteads in which only the residence is in use outnumber those in which the function of the farm buildings has been modified by 815 to 573. This would seem to be an indication that farming operations are being entirely discontinued at a somewhat more rapid rate than they are being scaled down or switched to cash cropping.

Figure 47 shows these categories well scattered over the County but with fairly obvious concentration in the central, north central east, and southeast portions. Table 10 shows the concentration of these categories in combination to be greatest in the silt lake plain and till plain land types. Together they constitute just over half of the total farmsteads in the County, so it is not surprising to find them in greatest number in the land types where numbers of all farmsteads are highest, but it may also be noted from Table 10 that they constitute higher percentages of all farmsteads here than elsewhere. Two factors bearing upon this circumstance are: (1) the greater feasibility of cash cropping in these land types, tending to increase the numbers of modified function farmsteads there, and (2) the relatively high percentage of total abandonment in the others,

cutting sharply into the numbers of all partially used farmsteads in these latter areas.

Abandoned residence farmsteads.--Category II,A,6, or farmsteads in which the farm buildings are used but the residence is not, is a small (45 noted in the 1966 field survey, see Figure 50) and somewhat ephemeral one. Their existence comes about in several ways. A common one is expansion of the farm holdings. A farmer may use more than one set of farm buildings but seldom more than one residence. Often the spare residence is rented or sold to a nonfarmer, but sometimes the owner chooses neither to take on the responsibilities of a landlord or to sell a piece of his land. In some cases the spare house is unsuited for occupancy. There are also cases in which a farmer, desiring to replace his aging or inadequate house, finds his best financial move to be to buy another farm equipped with a good house and move to the new location, meanwhile continuing to use the farm buildings at the first location in which he may have considerable investment. Farmhouses are also sometimes temporarily vacated by the death or disability of the occupant, though the farming operation may be continued. In some cases a farmer who quits farming and goes into another line of work finds that he must move away, but nevertheless does not choose to sell or rent the farm residence, at least for a time, even though neighboring farmers may rent the land and use the other buildings.

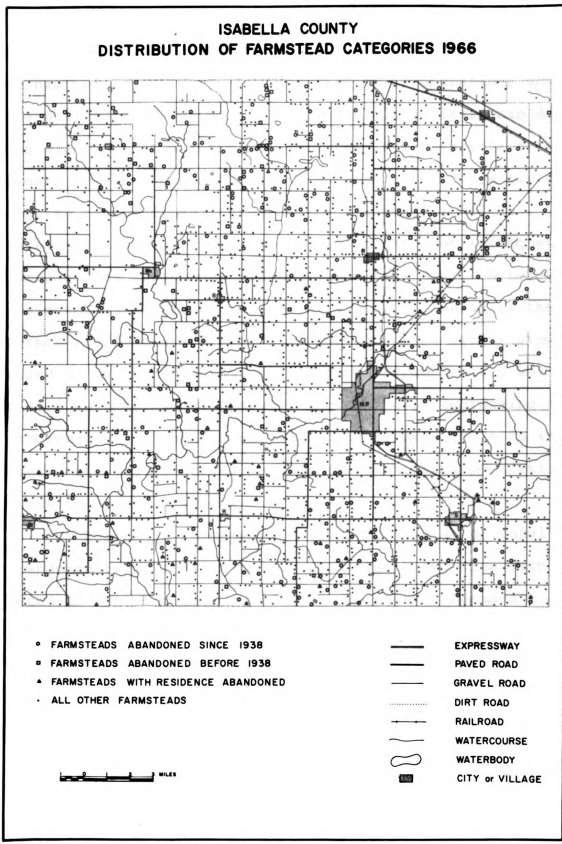
ISABELLA COUNTY
DISTRIBUTION OF FARMSTEAD CATEGORIES 1966
FARMSTEADS ABANDONED SINCE 1938
FARMSTEADS ABANDONED BEFORE 1938
FARMSTEADS WITH RESIDENCE ABANDONED
ALL OTHER FARMSTEADS
MILES
EXPRESSWAY
PAVED ROAD
GRAVEL ROAD
DIRT ROAD
RAILROAD
WATERCOURSE
WATERBODY
CITY or VILLAGE

Figure 50

Farmsteads often do not remain long in this classification. The farmer who moves to a farm which he has added to his holding may grow tired of his split operation, and the buildings at the first location may thus fall into disuse along with the residence. In the less favorable farming areas, the land associated with an unused residence may also come to be abandoned, throwing the farmstead into the totally abandoned class. Unoccupied houses not infrequently burn, and decrepit ones are sometimes torn down. Estates are eventually settled and houses vacated by death of the former resident are occupied again. Absentee owners grow tired of their long distance maintenance problem and sell or rent. Whether the category is increasing or decreasing is problematical. The falling number of farmers tends to increase it, but the pressure of a rising nonfarm population tends to decrease it.

Abandoned farmsteads.--Category II,A,7, or totally abandoned farmsteads is one of the large categories with 442 noted in 1966 for 16.2 percent of the total. Permanent abandonment occurs very largely as a result of two processes. One is the expansion of the size of the farm as land holdings are consolidated, resulting in surplus farmsteads which may then become unused, and the other is the abandonment of agricultural use of the land. Abandoned farmsteads appear in those lands most favorable to agricultural pursuits

usually only through expansion of farm holdings, but they appear in the less favorable lands for both reasons.

Figure 50 shows abandoned farmsteads to be frequently encountered throughout the County, as might be expected with one or both processes active in the entire area. Their occurrence is more obvious in the land types other than the silt lake plain and till plain, though Table 10 reveals that of these, only the sand hills type has a noticeable higher concentration index. Abandoned farmsteads are conspicuous in the others in the relative sense by constituting a high percentage of a low total of farmsteads.

The low concentration index (.70) of abandoned farmsteads in the sand lake plain, the land type least favorable to agriculture, is explained by both low original density and high disappearance rate. Only 29.9 percent of the number of farmsteads existing there in 1915 was occupied in 1966, and only 15.0 percent of those deserted since 1915 remained as features of the landscape in 1966. By way of comparison, in the sand hills, 49.3 percent of the number of farmsteads existing in 1915 was occupied in 1966, and of those deserted since 1915, 30.6 remained. The very low survival rate of farmsteads both occupied and abandoned in the sand lake plain is related to an early start of significant farmer exodus, and to the fact that many farm buildings encountered there were originally somewhat less than substantial.

Abandoned farmsteads are to be seen today in all stages, from well maintained buildings, as in Figure 51 to long deserted and decrepit examples, such as shown in Figure 52. The farmstead in Figure 51 is at the juncture of till plain and silt lake plain in good agricultural land. Recent consolidation of holdings has resulted in this abandonment. Probably in most cases the casual observer would not note that this farmstead and many others like it are now deserted. The long abandoned farmstead in Figure 52 in which a pioneer log house was never replaced, is in one of the larger areas of flat dry sand plains in the western part of the County. This land is not completely abandoned as may be seen by the corn field at left, but much cleared land in the vicinity has not been tilled for some time, and small trees are invading it. This abandonment could have resulted from either early expansion of operation or abandonment of land, probably in this case the former, inasmuch as the land in this general area is still not completely abandoned. However, were the land at this site more valuable, the old buildings would long ago have been removed to make way for tillage. It is nearly always in the unproductive sandy lands that buildings as worthless as these remain.

On Figure 50, 61 of the 442 abandoned farmsteads are indicated to have been deserted before 1938, the distinction being based on whether or not they have ever had electric service. It may be noted that the greatest density of those

Figure 51. Recently abandoned farmstead.

Figure 52. Long abandoned farmstead.

abandoned before 1938 are to be found in the sand hills and in the sand lake plain. This is true probably not only for the reason that both processes leading to abandonment were operative here in the early part of the present period, but also because the land involved in many sites was, like that in Figure 52, not valuable enough to induce anyone to remove the old buildings. A number of pioneer houses, like those in Figure 53 remain in these areas. Figure 54 shows a decrepit house in a sand hill site (note sumac in foreground) which, however, has been abandoned since 1938, as witnessed by electrical service wires still attached. Some of the farmsteads in the sand lands which were abandoned when industrial wages rose sharply after World War I, were re-occupied for a while during the depression of the thirties, but were abandoned again after industrial employment rose with the approach of World War II. Quite possibly had the situation with regard to industrial dispersion and job commuting in the thirties been what it is in the sixties, some of these residences would still be occupied.

In the field survey, 59 abandoned farmstead sites were noted, mostly through traces of foundations or remains of orchards. They were mostly found in the least fertile of the sandy lands where there has been little motivation to reclaim the old sites. Those noted were only the most readily observable ones. No doubt a determined search would

Figure 53. Pioneer houses.

Figure 54. Abandoned farmhouse in sand hills.

bring to light several times this number, still unreclaimed for any purpose.

Relict Forms

Casual observation when driving through the study area shows the landscape still dotted with farmsteads, most of which are dominated by the red barn and the typical white, two part, two story farmhouse, seeming to indicate a situation not drastically different from that which obtained before World War I. Closer examination, however, has revealed this typical farmstead to be a relict form which has yet to be eliminated or modified beyond recognition, as rural residents turn to activities other than exploitation of the land, and as the few remaining farmers alter their mode of operation with changing social and commercial structure and technological advancement.

Nonfarm Residence

An expression of the influence of cultural change upon the structure of the rural landscape in 1966, which is more obvious to the casual observer than the alteration of farmstead form and function is the proliferation of nonfarm houses. In certain areas, these are now man's most evident imprint on the landscape.

Nonfarmers in the County live in essentially three types of residences. One, which has already been discussed, is the farmhouse still associated with other farmstead

buildings. Another is the mobile home, which as its name implies, is an ephemeral landscape element, ranking in permanence of location somewhere between a house and an automobile. The third is the nonfarm house, of which there are two varieties. One of these was originally a farmhouse, which has now lost not only its agricultural function, but also the former associated farm buildings. The other is the house originally unassociated with farm buildings, constructed in most cases expressly for occupance by nonfarmers.

Nonfarm houses (landscape element Category II,B, see Appendix) are subcategorized according to the approximate time of their appearance as follows:[1]

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[1]Dating was done by a combination of field observation, aerial photograph study, and interview. These methods cannot in many cases, produce the exact date a house was constructed, but they do serve to place the nonfarm houses of the County in one of the four general categories devised for this study, which are loose enough to admit of slight overlap, but tight enough to tell the development story. Most houses can be approximately dated by field observation alone, mainly through type of construction and materials used. For example, houses like that shown in Figure 55, with a steep roof and no roof overhang are prewar. A house such as that shown in Figure 56 with a lower degree of roof slope and roof overhang at the eaves but none at the gables will have been constructed since World War II but quite likely before the middle fifties, placing it in the postwar category. If the house has asbestos shingles for siding or roofing material it is almost certainly no newer than the middle fifties. The state of deterioration of an asphalt roof is also a guide as to whether such a house is more than a decade old. Long low houses like that in Figure 57 with low roof pitch and considerable roof overhang on all sides is unquestionably new (built since the middle fifties). The type and design of windows, chimneys, siding material, and of certain other components also serve as age guides though it is necessary to be on the alert for evidences of remodeling. Aerial

Figure 55. (right) Prewar nonfarm house.

Figure 56. (left) Postwar nonfarm house.

Figure 57. (right) New nonfarm house.

1. Early, prior to the middle twenties.
2. Prewar, prior to end of World War II, but since the middle twenties.
3. Postwar, since the end of World War II up to the middle fifties.
4. New, since the middle fifties.

Early Nonfarm Houses

The first category, or the oldest class of nonfarm houses, are to a very great extent comprised by the old farmhouses which have lost their agricultural function and associated farm buildings, though a few of these were originally constructed for nonfarmers of an earlier time, such as rural ministers, rural storekeepers, blacksmiths, carpenters, or others. However, even these early nonfarm residents seem often to have been able to acquire surplus farmhouses. It is only this class of nonfarm house which has anything approaching an even density of occurrence throughout the area. Even so, it appears that a higher percentage of farmsteads has been reduced to nonfarm houses in the unfavorable farming areas than elsewhere. In Coldwater Township, which lies mostly in the sand hills land type, there are in 1966, 15 of these and 125 farmsteads (early nonfarm houses = 12.6 percent of farmsteads), while in Coe Township which is

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photographs exist for the area for 1938, 1952, 1958, and 1965. These are often helpful in placing questionable houses, such as those unique in style or materials or those which have been remodeled, into the correct categories.

comprised almost entirely by till plain and silt lake plain land types, there are 20 of these houses and 237 farmsteads (early nonfarm houses = 8.4 percent of farmsteads). This former farmhouse is the leading type of nonfarm residence in Coldwater Township. It is also conspicuous in the other three western townships as well as in Gilmore in the north, in all of which, agriculture is unquestionably in decline.

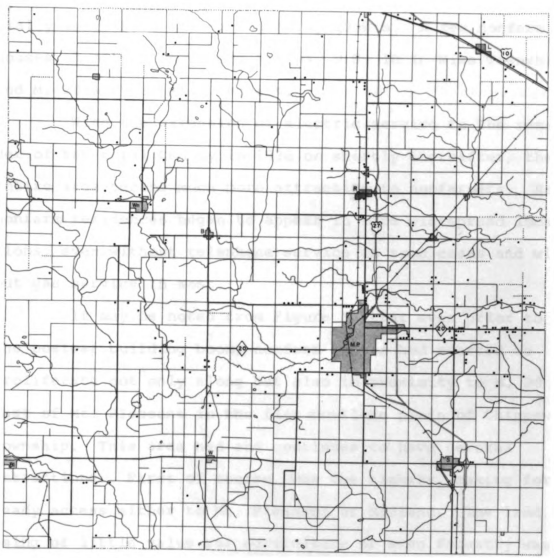
Prewar Nonfarm Houses

Houses built expressly for nonfarmers since the middle 1920's show a highly irregular pattern of distribution which has developed as a result of a set of readily discernible though complexly interrelated circumstances. Entering in are such factors as hard surfaced roads, the availability of electrical, telephone, or natural gas service, the availability of land, attractiveness of site, and place of work.

Proximity to hard surfaced roads has been a prime consideration to nonfarmers building in the rural area, most of whom have commuted to work. The greatest concentration of the second category of nonfarm houses, those built between the middle 1920's and the end of World War II, appears along former U.S. 27 north of Mt. Pleasant and along M. 20 east of Mt. Pleasant, see Figure 58. Not only did the paved highways provide easy access to several employment centers, especially Midland and Dow Chemical Company, and eliminate the often severe dust problem of gravel roads, but the

ISABELLA COUNTY

RURAL NONFARM RESIDENCE



• LOCATIONS OF RURAL NONFARM HOUSES CONSTRUCTED FROM THE MIDDLE 1920'S TO WORLD WAR II

M.P.	MOUNT PLEASANT
S	SHEPHERD
B	BEAL CITY
W_m	WEIDMAN
W	WINN
Bl	BLANCHARD
L	LOOMIS
R	ROSEBUSH

0 1 2 3 MILES

EXPRESSWAY
PAVED ROAD
GRAVEL ROAD
DIRT ROAD
RAILROAD
WATERCOURSE
WATERBODY
CITY or VILLAGE

Figure 58

combination of gas, electricity, and telephone has been available to rural residents along these roads (and essentially only these) since the early 1930's. A few nonfarm houses also appeared along highway U.S. 10 in Wise Township and M. 20 west of Mt. Pleasant.

With the extension of electric service to the remainder of the rural County in 1938 or shortly thereafter, the entire area became much more attractive to nonfarmers. New nonfarm residences began to appear in more widespread locations, even without telephone service in some cases and without gas service in most.

It may be noted from Figure 58 that even prior to the postwar building boom, nonfarm houses had started to proliferate not only along but also in proximity to M. 20 east of Mt. Pleasant in the flat sand lake plain of Chippewa Township. This area had and continues to have several attractions. First of course, was the highway, making for ready access either to Mt. Pleasant or Midland. The land, being of little value for agriculture or even forestry was comparatively cheap and readily available. The wooded and semiwooded character of the area also seems to have added to its attractiveness.

No doubt at least partially because of the availability of cheap land, much of the early nonfarm housing constructed here in the sand lake plain was of low value, the units being often small and of the tar paper and roll

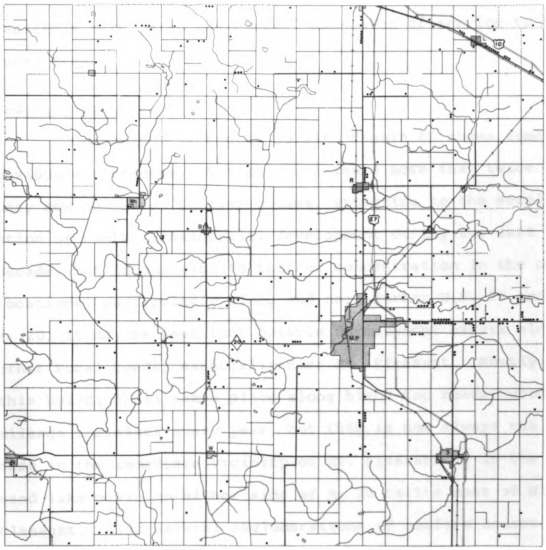
roofing variety, seemingly continuing the tradition of low quality unsubstantial building started by the shack and shed type farmsteads. Many houses of substantial quality have eventually appeared here, but there are in 1966 almost none of high value, and the average remains obviously below that of most other rural areas. Nonfarm residence got an early impetus here as oil field workers moved into some of the abandoned farmhouses in the early thirties, and some of the early substandard houses were built by these people who no doubt did not intend to stay long.

Postwar Nonfarm Houses

Nonfarm residential construction has been of considerable volume since World War II and continues to increase at an accelerating rate. However, no very great dissimilarity is to be observed between Figure 58 showing prewar houses and Figure 59 showing postwar houses (World War II to middle 1950's). In both periods about the same number of houses appeared and in a similar distribution pattern, meaning that after the war, nonfarm houses became further concentrated along U.S. 27 north of Mt. Pleasant and M. 20 both east and west of Mt. Pleasant, but especially east, and that a few more nonfarm houses became scattered about the rural area. There are, however, at least two differences. One is that with the advent of an asphalt surfacing (blacktopping) program after World War II, there appeared an incipient tendency to concentrate along the new black top roads, and

ISABELLA COUNTY

RURAL NONFARM RESIDENCE



• LOCATIONS OF RURAL NONFARM HOUSES CONSTRUCTED FROM WORLD WAR II TO THE MIDDLE 1950'S

M.P.	MOUNT PLEASANT		EXPRESSWAY
S	SHEPHERD		PAVED ROAD
B	BEAL CITY		GRAVEL ROAD
Wm	WEIDMAN		DIRT ROAD
W	WINN		RAILROAD
Bl	BLANCHARD		WATERCOURSE
L	LOOMIS		WATERBODY
R	ROSEBUSH		CITY or VILLAGE

Figure 59

the other is that building along former U.S. 27 south of Mt. Pleasant started to pick up after electric power became available here, with the general extension of service to the rural area.

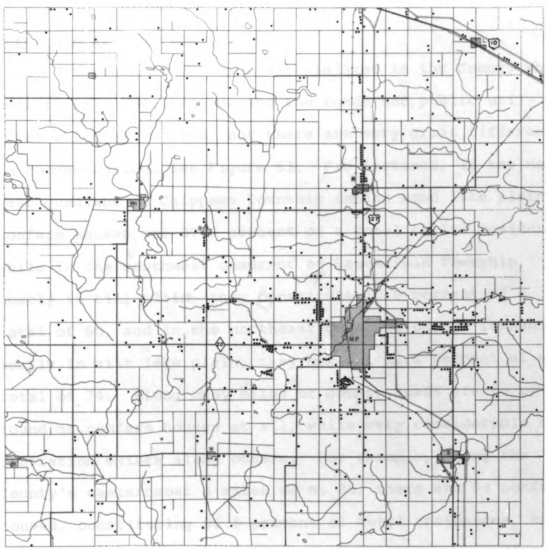
New Nonfarm Houses

Comparison of Figure 59 with Figure 60 shows some obvious differences. Not only are there more than twice as many new houses as postwar houses, attesting to the acceleration of nonfarm residential development during the last decade, but in addition to further concentration in the old locations, particularly along and near former U.S. 27 and M. 20, it may be seen that notable development exists along other rural roads, especially near Mt. Pleasant. Mostly this building has taken place along black top roads, whose mileage increases every year, but this is not always the case in the immediate vicinity of Mt. Pleasant or in the sand lake plain on either side of M. 20 to the east of Mt. Pleasant. Also several agglomerations of nonfarm houses with their own streets (subdivisions) have appeared near the city, so that Mt. Pleasant in 1966 is surrounded by nonfarm houses occurring singly or in groups.

The subdivisions now developing as a part of this concentration about Mt. Pleasant are essentially of two types. One consists of medium quality houses built on flat land, where there is direct access to a hard surfaced road. The other consists mainly of high value houses in wooded

ISABELLA COUNTY

RURAL NONFARM RESIDENCE



• LOCATIONS OF RURAL NONFARM HOUSES CONSTRUCTED SINCE THE MIDDLE 1950'S

M.P.	MOUNT PLEASANT		EXPRESSWAY
S	SHEPHERD		PAVED ROAD
B	BEAL CITY		GRAVEL ROAD
Wm	WEIDMAN	0 1 2 3 MILES	DIRT ROAD
W	WINN		RAILROAD
Bl	BLANCHARD		WATERCOURSE
L	LOOMIS		WATERBODY
R	ROSEBUSH		CITY or VILLAGE

Figure 60

areas along the Chippewa and North Branch Chippewa Rivers in the rolling lands west of Mt. Pleasant.

Rural Nonfarm Housing in 1966

Nonfarm houses have materialized in the County wherever there are farmsteads and the roads and public utilities which serve them, but there are very great differences in concentration, see Figure 61. For instance, in the northwest quadrant of Chippewa Township in the sand lake plain, nonfarm houses are 87.5 percent of a total of 159 residences, while in the southwest quadrant of Broomfield Township, mostly in till plain, they constitute 10.0 percent of a total of 60, and in the northeast quadrant of Coe Township mostly in silt lake plain, they make up 12.2 percent of a total of 74. Along many miles of County roads are to be found no nonfarm houses at all, while very considerable concentration exists along others. For example, along the County's easternmost 3 miles of M. 20, there are 53 nonfarm houses, constituting 96.4 percent of total residences, and the old farmsteads are almost lost among the newcomers.

A three way, interrelated orientation of the distribution of nonfarm houses is now observable in the County. One aspect of this is the previously noted clustering about Mt. Pleasant, which is the only center in the County where considerable employment opportunity exists. A second is the tendency to concentrate along or near the hard surfaced roads,

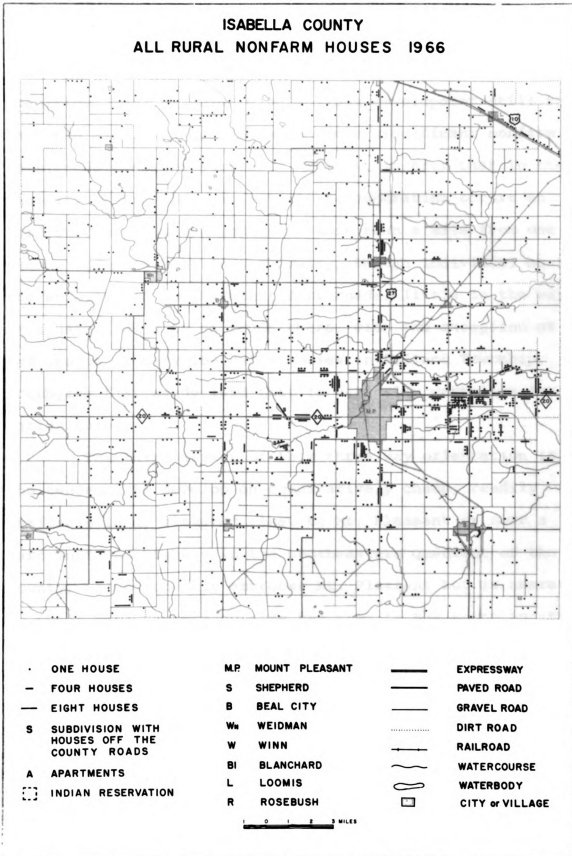

ISABELLA COUNTY
ALL RURAL NONFARM HOUSES 1966
· ONE HOUSE
— FOUR HOUSES
— EIGHT HOUSES
S SUBDIVISION WITH HOUSES OFF THE COUNTY ROADS
A APARTMENTS
INDIAN RESERVATION
M.P. MOUNT PLEASANT
S SHEPHERD
B BEAL CITY
We WEIDMAN
W WINN
Bl BLANCHARD
L LOOMIS
R ROSEBUSH
EXPRESSWAY
PAVED ROAD
GRAVEL ROAD
DIRT ROAD
RAILROAD
WATERCOURSE
WATERBODY
CITY or VILLAGE
1 0 1 2 3 MILES

Figure 61

especially main routes which give ready access to centers where employment opportunity exists, and where the most amenities are available, with maximum development still to be noted along the two highways where significant nonfarm housing development started. While it is true that in the vicinity of Mt. Pleasant not all concentration occurs on hard surfaced roads, most is no more than a mile from one of these, and elsewhere in the County, though individual houses are encountered on gravel or dirt roads, little in the way of clustering is to be found there, with the exception of two groups of very low value houses in Rolland Township, occupying flat sandy land that is virtually worthless for agriculture.

The third aspect of this three way orientation is the tendency to develop on comparatively cheap, readily available land, situated close to Mt. Pleasant or near a hard surfaced highway in the southeastern quadrant of the County, which not only embraces Mt. Pleasant but is nearest to employment centers outside the area to the south and the east, such as Alma, St. Louis, Lansing, Bay City, Saginaw, and especially Midland. The area east of Mt. Pleasant in the sand lake plain may be seen (compare Figure 61 with Figure 1) to possess the County's greatest concentration of nonfarm residences. All of the above mentioned factors obviously are operative here to some extent, with that of cheap land being quite apparent. The southern extremity of

concentrated nonfarm settlement coincides quite closely with the boundary between the agricultural silt lake plain and the nonagricultural sand lake plain (see above cited Figures). It may be noted in Coe Township in the southeastern corner of the County which is almost all till plain or silt lake plain and good agricultural land, that there are comparatively few nonfarm houses, even though the area is advantageously situated with respect to centers of employment and has thirteen miles of hard surfaced road. This land is either not for sale or not for sale at a price which County residents consider reasonable for a site which may have accessibility but little to offer in the way of scenic attractiveness.

Although the bulk of nonfarm houses are in the above noted areas of concentration, there are still many scattered nonfarm houses in the County, attesting to the fact that with the extension of amenities to the rural areas, reasonably advantageous sites have become widespread. Factors of a personal nature often enter into the selection of these scattered locations, such as proximity to relatives, land donated by relatives, liking for a particular community, dislike of close neighbors, or availability of a certain plot of land at the right price or time. Most of these scattered houses are neat but small and simply constructed. In the case of the few scattered high value houses to be

found in the County, scenic attractiveness of site and seclusion are paramount location factors.

In general, the construction of nonfarm houses in the western part of the County, while by no means negligible, lags far behind that of the east, consisting mostly of a few units or clusters along M. 20 or the County blacktop roads. Large areas of essentially nonagricultural land here remain almost unutilized for the purpose.

So far, instead of building new houses, nonfarmers in the west most often occupy the surplus farmsteads (though numbers of farmsteads are comparatively low, numbers of farmers are lower, see Figures 62 and 50). Here, more frequently than for the County in general, entire farms with liveable houses can be bought with a lower investment than would be required by the purchase of a small plot of land and the construction of a new house. Also, nonfarmers sometimes occupy farmsteads owned by relatives in return for paying the real estate taxes and maintaining the property. In any case, they use the house while usually ignoring the land.

The present comparatively low development of nonfarm housing in the west seems to be related largely to the original low population density and to the lack of nearby centers of population and employment. Nonfarmers in the west work not only in the eastern and southern centers already mentioned but also in Winn, Edmore, Greenville, Big Rapids

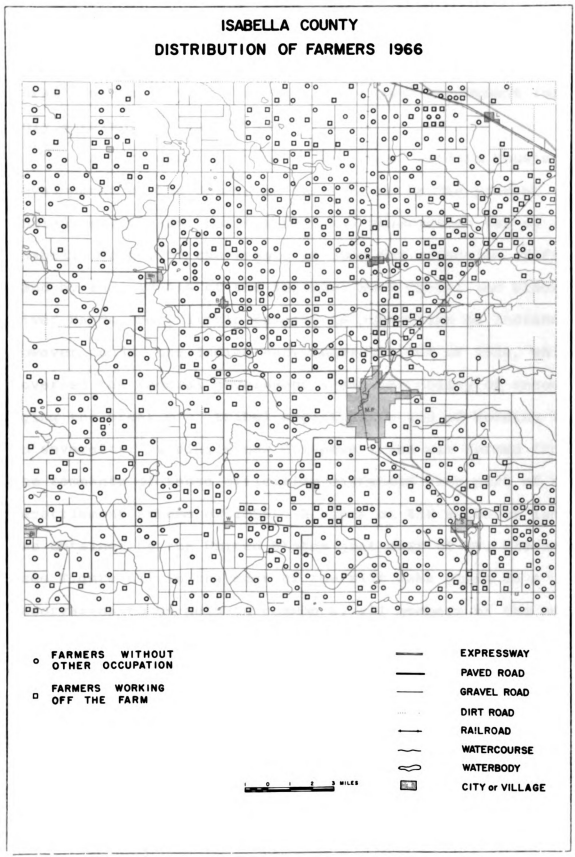

ISABELLA COUNTY
DISTRIBUTION OF FARMERS 1966
FARMERS WITHOUT OTHER OCCUPATION
FARMERS WORKING OFF THE FARM
0 1 2 3 MILES
EXPRESSWAY
PAVED ROAD
GRAVEL ROAD
DIRT ROAD
RAILROAD
WATERCOURSE
WATERBODY
CITY or VILLAGE

Figure 62

and several others. Winn within the County and Edmore near the southwestern corner, while not distant for some western rural residents, have provided significant employment for only a relatively short time.

A very small portion of the rural nonfarm housing development of the County is constituted by the present Indian Reservation. Of the original reservation set up in Isabella County by the Treaty of 1855 for selection of free land by individuals of the Saginaw, Swan Creek, and Black River Bands, very little remains in possession of Indians. However, under the Indian Reorganization Act of 1934, which reversed the federal government's earlier policy of encouraging the breakup of tribal organization and of holding land in severalty,[1] a single new Chippewa tribe was formed from the remnants of those officially disbanded as a part of the resettlement scheme of 1855. A block of 450 acres of land was obtained by the United States just east of Mt. Pleasant (see Figure 61) in the edge of the silt lake plain as a reservation to be held in common by all members of the newly constituted tribe. Houses were built by the United States Bureau of Indian Affairs and these along with the previously existing farmhouses form a cluster of two dozen nonfarm houses spaced along the county roads on this land. In 1966, apartment buildings for additional Indian housing were

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[1]Dunbar, p. 43.

constructed here. The land is rented out by the tribe to local farmers and the proceeds are divided among members. The tribe now numbers about 300, many of whom live off the Reservation, some few still on lands selected under the Treaty of 1855.

There were in Isabella County in 1966, more than 1,400 rural nonfarm houses constructed as such and nearly 300 more which have become nonfarm through loss of their former agricultural function and associated farm buildings. With the development in the mid-twentieth century of such factors as rapid growth of population, expansion of urbanization, expansion and dispersion of industry, proliferation of paved highways and automobiles, extension of amenities formerly exclusively urban to rural areas, and growth of general affluence to the point where even young married couples can buy a good automobile and build a new house (or buy a mobile home), areas like rural Isabella County are now perceived as residentially desirable, even for people whose economic interests lie elsewhere. Rural residents, especially sons and daughters of farmers who through necessity or choice are no longer associated with agriculture, often build or buy homes within the familiar environment rather than move to an urban area, and even some urbanites now seek rural homes, though the 1966 field survey found very few of these in Isabella County who did not have local relatives.

The resulting proliferation of nonfarm houses is a very marked landscape change through time. The fact that not all sections of the County are perceived as equally advantageous for rural residence produces also a notable diversity of landscape through space, as the hard surfaced roads are chosen for ease of movement, nonagricultural lands for availability, certain areas for proximity to employment opportunity, and certain sites and locations for various factors of desirability to the individual.

Mobile Homes

There were more than 400 mobile homes (Category II,C elements of the landscape, see Appendix) in Isabella County in 1966. They are mostly occupied by nonfarmers and represent a considerable addition of nonfarm dwelling units to the approximately 1,700 nonfarm houses existing in the County. Their distribution pattern is quite similar to that of nonfarm houses. No considerable portion of the rural area is without them but they are to be found in greatest numbers in the east and southeast with concentration near Mt. Pleasant, along the main highways, and in nonagricultural lands. The sand lake plain portion of Chippewa Township had fifty-seven as compared to all of Coe Township, with only nineteen. The Townships in the north and west have about ten each. If past performance is a guide to the future, many of these mobile homes will be replaced by houses.

Public and Commercial Buildings

By comparison of Figure 8 with Figure 63, it may be seen that there has been, between 1915 and 1966, a very great change in the distribution of public and commercial buildings (Category II,D elements of the landscape, see Appendix). Where in 1915, considerable numbers of these were dispersed throughout the rural area, in 1966, those which are functional are largely along main roads or near centers, especially Mt. Pleasant. Of the public and commercial buildings now in use, many are new or nearly so (constructed during the last decade).

As indicated in Chapter VI, a great deal of social and commerical reorientation has taken place. The one room rural schools and most of the rural churches have been replaced by larger units whose physical plants are usually associated with central places. The blacksmith shops along with the general machine shops which replaced them for a while after the horse retired from the rural scene, as well as the country store, and the country gas station have all become obsolete and have largely disappeared. In the case of commercial establishments today, not only are the buildings new, but so are the businesses, with respect to rural location. Farm implement dealers have moved off main street to find room to park their stock of huge machines, and to make access easier for the farm truck or self-propelled machine. With the recent great drop in numbers of farmers,

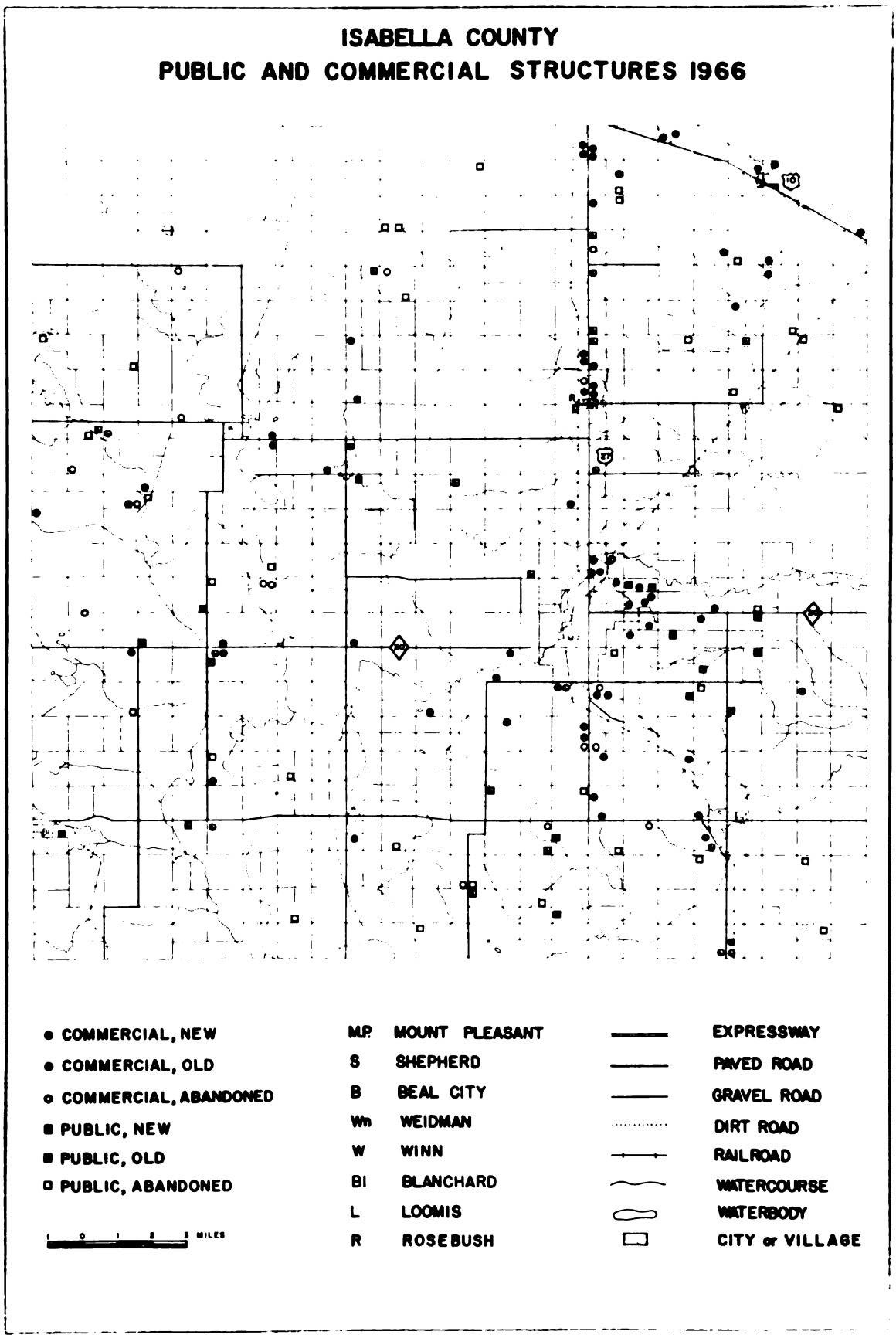
ISABELLA COUNTY
PUBLIC AND COMMERCIAL STRUCTURES 1966
COMMERCIAL, NEW
COMMERCIAL, OLD
COMMERCIAL, ABANDONED
PUBLIC, NEW
PUBLIC, OLD
PUBLIC, ABANDONED
MILES
MP MOUNT PLEASANT
S SHEPHERD
B BEAL CITY
Wn WEIDMAN
W WINN
Bl BLANCHARD
L LOOMIS
R ROSEBUSH
EXPRESSWAY
PAVED ROAD
GRAVEL ROAD
DIRT ROAD
RAILROAD
WATERCOURSE
WATERBODY
CITY or VILLAGE

Figure 63

however, some implement sales buildings are already abandoned or converted to other uses. Other establishments include riding stables, archery ranges, beauty shops, veterinary hospitals, nurseries, motels, radio stations, golf courses, air ports, and gas and oil pipe line control stations. Perhaps a sign of the times is a sight which greets one at night when approaching Mt. Pleasant from the south on Mission Road--that of the bright lights of a radio station shining through the framework of an adjacent dilapidated barn. These establishments now occupy rural sites for such reasons as need for space, isolation, or noncongested access. They serve in the main other than local rural people and having in many cases only the most tenuous connection with the rural community, have no need to be dispersed through it as former rural businesses were.

CHAPTER IX

AREAL DIVERSITY IN 1966

In the systematic discussion of the character and distribution of the major elements of the landscape, undertaken in Chapters VII and VIII, considerable diversity through space was noted. Chapter IX attempts a brief regional summarization of the nature of the resultant landscape in each major land type as an entity.

The Silt Lake Plain

Here, elements of the natural landscape, though highly influential in the mode of man's occupance of the area, are now less conspicuous than in other land types. There is no noticeable relief except the few stream valleys, and the original forest cover has now been very largely removed, giving the area a decidedly open aspect. Rectangularity, is a conspicuous feature of the cultural landscape, being expressed in fields, property lines, drainage lines, public utility lines, and a very nearly complete grid type road pattern.

The entire area seems almost completely devoted to prosperous agricultural development. There are many

farmsteads, and for the most part they are well maintained, even though the style of construction often indicates close to a century of existence, attesting to early settlement. Barns are often comparatively small, and close observation now many times reveals that even the rather minimal livestock programs for which these were constructed have now been abandoned. In the heart of the silt lake plain areas, cash cropping is the rule. Beans are the leading crop, but there are also considerable acreages of corn and wheat. Crop growth is normally very even and very good. Fences are few, and tillage of the land is carried very close to road beds, buildings, and drainage ditches. The latter, often very deep, are a conspicuous feature of this landscape, though they are gradually being replaced by high capacity tile drains. Field obstructions such as stumps, stone piles, or individual trees are rare.

Despite the ubiquitous presence of improved roads, power lines, and telephone lines, nonfarm houses and mobile homes are relatively few. Building plots are either expensive or unavailable due to the essentially agricultural orientation of the area. However, even though the incidence of farmer occupance is high, close observation of farmsteads often discloses nonfarm occupance of the residence, or in some cases total abandonment of the farmstead, with the land remaining in agricultural use through expansion of operation.

The Till Plain

Here, on the whole, elements of the natural environment are somewhat more conspicuous than in the silt lake plain. The undulating character of the surface provides noticeable relief, and the greater frequency of wooded areas, such as central wood lots, hedgerows, wooded depressions, and dispersed individual trees impart a closed overall aspect. Occasionally, obstructions such as stumps or stone piles do exist in the fields. The general rectangularity of the lake plain landscape is repeated in the till plain but to a slightly lesser degree, with irregularities of slope and drainage more often disrupting the pattern. The existing design is also less apparent because of greater obstruction of view.

As in the silt lake plain, there are many farmsteads. They are sometimes less well maintained, though barns are frequently newer and larger, with the early types having more often been replaced by structures more amenable to twentieth century livestock husbandry, and accompanying silos are more common. Livestock enterprises have been the rule in the till plain, and a high proportion of those farmsteads extensively modified in recent years for large scale livestock enterprises are found here. The land is nearly all fenced, though many fences are now obsolete and decaying as livestock programs are discontinued or cattle are confined to feed lots. In general, tillage is not carried as close to

roads, fences, or buildings as in the silt lake plain. Open drains in the form of modified natural water courses are frequently encountered, but the straight open ditches of the silt lake plain are largely absent, being precluded by slope conditions. The chief crops are alfalfa, corn, and wheat, the large acreage of alfalfa reflecting the livestock orientation of the area. Crops are normally good, but development is often less even and less luxuriant than in the silt lake plain. To the casual observer, preoccupation with agricultural pursuits is less apparent here than in the silt lake plain, with the possible exception of the Nottawa Township area. The land is obviously not so completely tilled, and dispersed nonfarm houses or mobile homes are more frequently encountered. With the exception again of the Nottawa area, attentive observation of farmsteads reveals greater numbers occupied by nonfarmers, although there are also more farmsteads being used as they were originally intended with relatively little modification.

While considerable differences do exist between the silt lake plain and the till plain, they do possess a significant overall similarity in being generally favorable to agriculture, which continues to be an important activity in both. On the other hand, with the possible exception of some parts of the clayey hills, the remaining land types, between which considerable differences likewise exist,

possess the common feature of being generally unfavorable to agriculture, which is universally in decline there.

The Clayey Hills

This land type is limited in extent and very varied in nature, ranging in soil composition from low to high clay content and in slope conditions from moderately rolling to very steep. Characterization of the core area is simple enough, but boundary definition is difficult. The areas of steepest slopes and sandiest soils may be forested (oak-aspen to beech-maple) or they may be partially wooded or even clear, but mostly they are not tilled. However, some of the steeper slopes with more productive clayey loam soils have been cleared and fairly intensively tilled, giving rise to serious erosion problems. Such slopes are either now in agricultural use by means of such erosion control measures as contouring or keeping steepest slopes mainly in hay crops, or else they are planted to trees, used for permanent pasture, or simply abandoned, the latter courses having often been taken after severe gullying has occurred. Areas of lower slope and productive soils are largely tilled and except for their more rolling character and sometimes more severe erosion, may appear much like the adjoining till plain.

The fragmented occurrence of this land type makes difficult, valid generalization concerning farmsteads, public

services, or nonfarm housing. The density, quality, and use category of farmsteads runs the gamut of the County situation. Scattered nonfarm houses do occur, but there are no areas of concentration.

The Muck and Peat Lands

The majority of the muck and peat lands, as previously noted, have now reverted to a lowland association forest, apparently quite similar in composition to the original--minus the white pines. However, some of this land remains clear, or more often partially clear, and is used for permanent pasture, usually weed infested but remaining green all summer. A very small proportion is tilled. Few farmsteads are present, and several irregularities in the county road pattern result from avoidance of building roads across this land type. In general, there has been relatively little human activity here, other than exploitation of the timber.

The Sand Lake Plain

Probably the most conspicuous feature of the sand lake plain is the considerable extent of oak-aspen forest (mostly somewhat stunted), or land returning to forest. In fact from an oblique areal view, it appears almost as unbroken forest. Topographically, the sand lake plain is nearly as flat as the silt lake plain with the forest tending

to conceal the slight relief which does exist, mostly in the form of stream valleys or relict wind and current forms rising a few feet above the general level. Landscape rectangularity, though obviously present is somewhat less apparent than in either the silt lake plain or the till plain. The road grid is less complete, the encroaching woodland is having its effect upon field patterns, and in many areas, the forest greatly obscures the view.

With respect to agriculture, the sand lake plain and the silt lake plain are at opposite ends of the scale. Little land is under cultivation in the sand lake plain, and such staple field crops as do exist are generally of inferior quality. There is a very low concentration of farmsteads, the majority of which are small and often dilapidated, and of which more than 25 percent are abandoned. The sand lake plain and the silt lake plain do have in common the feature of relatively few fences, both having a low cattle population, though for obviously different reasons.

This land type does, however, boast the County's greatest concentration of nonfarm dwelling units, with the woods along the county roads close to M.20 being literally full of houses and mobile homes, and subdivisions have developed close to Mt. Pleasant. Dispersed nonfarm houses are to be found throughout, wherever improved roads and power lines exist. There are few high value houses here,

and many, especially the older ones, tend to be of somewhat less than average value.

The Dry Sand Plains

The dry sand plains land type of the interior and western parts of the County is approximately as extensive as the sand lake plain but is much more fragmented in occurrence. The general aspect also differs in that the surface varies from undulating to flat with occasional pits or swales, and there is much less forest, and much more evidence of agricultural activity both past and present.

Farmsteads are more numerous and consist of higher value buildings than in the case of the sand lake plain, though both numbers and quality suffer by comparison with the situation in the heavier lands. Abandoned farmsteads are conspicuous, and many others show indications of occupation by nonfarmers. Though nonagricultural land obviously exceeds agricultural land, there is more of the latter here than in the sand lake plain. Fields remain small and square, and most are fenced, some still with pine stumps. Decrepit fences and hedgerows of trees or sumac are common. Remaining farmers largely engage in livestock enterprises and herds of grazing cattle are not uncommon here, in contrast to previously mentioned areas where cattle are usually confined to barns or feed lots. Much land now embraces wooded areas or scattered trees to the point of being classed as

mixed wooded and clear nonagricultural land on Figure 15, while clear nonagricultural land, though less extensive is nevertheless a major element of the landscape.

Nonfarm houses with the exception of a few concentrations of very low value units, have not appeared extensively as yet. Land is cheap and available, but these areas share the general disadvantages previously mentioned with respect to nonfarm housing development in the western part of the County.

The Sand Hills

Elements of the natural environment dominate the landscape complex of the sand hills to a greater degree than in the other major land types of the County, with sharp relief and heavily wooded areas tending greatly to overshadow farmsteads and tilled land in the roughest portions. In the areas of more moderate relief, great fragmentation of agricultural and nonagricultural land is perhaps the most striking feature of the landscape.

Agriculture is now obviously in decline, with many formerly tilled areas (as evidenced by the presence of abandoned farmsteads or farmstead sites and remains of fences) having been abandoned long enough ago to allow the development of an oak-aspen forest of some commercial value. Partially wooded areas now in process of returning to forest are numerous and extensive throughout, and clear

nonagricultural plots are also numerous. There were in 1966 in Coldwater Township in the northwest, nearly all of which falls into this land type, only seven full scale, full time farmers. The frequency of occurrence of abandoned farmsteads is greater here than in any other land type, and the majority of those farmsteads still occupied, are occupied by nonfarmers. The United States Census reported the population of Coldwater Township in 1910 as 1,010 and in 1960 as 494.

Mostly only the flatter areas with heavier soils are now tilled. Fields are small and most are fenced, but fences are now largely nonfunctional, for while remaining cattle are pastured, few remain. Hedgerows along the fences are the rule, consisting either of trees or sumac. Large erratics are numerous and many are scattered about the fields or along the fences. Rows of boulders are sometimes piled along fences.

Rectangularity of the man made landscape is probably less evident here than elsewhere in the County. The road pattern is incomplete, fields are often irregular because of slope or soil conditions, and the view is usually much obscured by forest and rough topography. Existing roads are less often improved here than elsewhere, except perhaps in the sand lake plain.

Nonfarm houses are present but are very scattered, constitute a small percentage of the total, and most often consist of former farmhouses. Abandonment of land, and

expansion of the few remaining farming operations have made many farm residences available to nonfarmers.

The County's greatest contrast in general aspect of the landscape exists between the sand hills of the northwest and the silt lake plain of the southeast. In the sand hills, there is sharp relief, extensive forest, large areas of partially wooded nonagricultural land, and few farmsteads, many of which are abandoned or neglected. Man's works are least evident and his efforts appear least successful here. In the silt lake plain, there is virtually no relief, almost complete agricultural utilization of the land, and many farmsteads, most of which are occupied and well maintained. Human activity is most evident and man's efforts appear most successful here.

CHAPTER X

SUMMARY AND CONCLUSIONS

In the introduction to the study, it was hypothesized that a cultural landscape changes through time with changing culture, and that at any given moment of time, it exhibits spatial diversity related to heterogeneity of the land. It was also suggested that these phenomena are apparent and meaningful in microcosm as well as in macrocosm. Reconstruction and observation of the cultural landscape of Isabella County, chosen as a representative sample of the Central Michigan, support this hypothesis.

Change Through Time

With respect to change through time, the most far reaching and obvious alteration came as the white settler replaced the Indian. From within his cultural frame of reference, the Indian perceived the sustenance potential of the land to lie with the resources of the essentially unmodified forest. Thus his cultural landscape departed relatively little from the natural landscape. On the other hand, the white settler whose culture embodied the European notion of commercial agriculture, extensive resource utilization,

and industry perceived the immediate value of the land to lie either in the agricultural potential of the hardwood forest area or in exploitation of the pine woodlands.

With the exhaustion of the pine, the soil was left as the only exploitable resource of note. By the end of the nineteenth century, the area had become sufficiently well integrated into the mainstream of the American exchange economy to make commercial agriculture a feasible enterprise, and most of the County's population was engaged in it. The forest had been largely removed, and the near ubiquitous occurrence of farmsteads, cultivated land, fences, section-line roads, and drainage ditches indicated that the white settler had succeeded in converting the wilderness into his version of civilization.

To this point, landscape change through time, since the arrival of the white settler, had been largely the result of the replacement of one culture by another. Now, however, the same integration into the cultural domain of the Western World which had led to wide spread development of commercial agriculture and to the consequent extension of an agricultural landscape to the majority of the area, led to very considerable modification of that landscape, and time change henceforth has been related to cultural evolution rather than replacement.

Within the economic phase of the man-land relationship of the Western World, emphasis upon exchange,

industrialization, and commercialization of agriculture has continued to increase, and the magnitude and character of these operations change with accelerating momentum. Transformational activities long ago left the hands of the individual craftsman and became the domain of the highly mechanized industrial plant and the corporate financial structure. Commercial agriculture now seems headed in the same direction. Exchange has developed to a point where the individual obtains almost none of his physical needs directly from the land he occupies. Where pioneer settlers once derived their needs almost exclusively from their own land, their successors participate in a man-land system which is virtually world wide in its ramifications.

The changes which have occurred in the economic orientation of the County's population are being increasingly expressed in the rural landscape. Advancing technology has made much larger agricultural operations possible, while rising costs and rising standards of living have made ever larger farms very nearly mandatory and have at the same time greatly reduced the feasibility of agriculture in marginal lands. Productive lands are being more intensively cultivated, while marginal lands return to forest.

The number of farmers has drastically declined as a result of increased productivity per man and abandonment of former agricultural land. Most of the descendents of the early settlers who came to exploit the land, now view it as

desirable living space while engaging in industrial or service occupations. Many farmsteads have been greatly modified to cope with new magnitudes and modes of production, many are abandoned, and many more exhibit varying degrees of alteration as their function changes from production to residence. New nonfarm houses have become a major landscape element in favorable areas.

Most public buildings such as schools and churches which still remain in the rural area are now abandoned, as greater mobility of the rural population makes institutional consolidation and centralization feasible. Abandoned also are the surviving structures which housed rural commercial activities, established to serve the local rural resident, and these, too, are casualties of increasing mobility. New commercial establishments have appeared close to central places and along main highways, these sites having been chosen, not to serve particularly the rural population, but to gain space and accessibility. Having observed such changes in detail in a small area such as Isabella County, one has only to travel more widely (as the writer did in the summer of 1968 through fifteen central and eastern states) or to reflect upon the universality of the underlying causation to realize the broader applicability of the foregoing generalizations.

In the immediate future, change through time in response to developing culture should continue to be rapid.

Public function elements (roads, power lines, drainage lines, telephone lines, gas lines, etc.) may be expected to change and expand with technological advance and rising population in the rural area. Changing economic and technological approaches to agriculture will result in replacement or removal of obsolete farm structures. Nonfarm houses will expand in numbers with increasing attractiveness of rural residence sites to people who are in no way directly involved with the exploitation of the land, and more businesses will probably move to the rural area in quest of space and easy access.

Diversity in Space

With regard to spatial diversity, this has been in the past, and still is at the present, a very evident characteristic of the rural Isabella County landscape, and it has been, and still is, definitely related to diverse character of the land. That the present spatial diversity appears to be at least as marked as any in the past, seems to indicate that man's present generally indirect and far more broadly based relationship to the land has not erased its effect on his choice of enterprises and his success in their execution, both of which are expressed in landscape.

Today, in those areas which are most favorable to agriculture, especially the silt lake plain, agricultural orientation is quite apparent. Nonfarm houses are few, the

land is intensively devoted to high yielding cash crops, the farmsteads are numerous and mostly well maintained, rectangularity of landscape (resulting from the land survey system) is most obvious, and in general man and his evidently successful enterprises completely dominate the landscape.

In those areas which are least favorable to agriculture, such as the sand hills, cultivated land is a minor landscape element. Some of the land was never completely cleared and devoted to agriculture subsequent to removal of the pine and now bears an oak-aspen replacement forest. Much land that was once under cultivation is now in various stages of returning to forest. Farmsteads are comparatively few, often they are poorly maintained, many are obviously occupied by nonfarmers, and many are entirely abandoned. In general man and his works do not dominate this landscape.

In the till plain areas where some land has proven amenable to cultivation and some has not, there is still evidence of agricultural orientation, but of a different type and magnitude than in the silt lake plain. The arable land is less intensively cultivated, wooded areas are more conspicuous, the present or past dominance of livestock enterprises is evident, farmsteads are generally less well maintained and more often occupied by nonfarmers, and more nonfarm houses are present.

In the lake plain east of Mt. Pleasant, where location is not a differentiating factor, the influence of land

type on the development of nonfarm residence is clear cut. Nonfarm houses are many times more numerous in the comparatively cheap land of the sand lake plain than in the expensive land of the silt lake plain.

In the future, landscape diversity will probably increase. There seems to be no indication at present that the highly productive portions of the silt lake plain and till plain will not remain in agricultural use. On the other hand, agriculture may be expected to continue its decline in the sandy lands, possibly to the point of virtual nonexistence, and the return to forest here could become as complete as it is now in many areas of thin rocky soil in New England.

In the favorable agricultural areas, present trends point to the eventual replacement of the old farmsteads by a relatively small number of highly specialized establishments bearing little resemblance to their predecessors. Perhaps consolidation of holdings and lack of available building plots in these lands could result in fewer residences and a declining population, though complicating factors such as family ties, existing amenities, proximity to employment, and continued occupance of old, but updated farmhouses make such a prediction hazardous. In the lands where agriculture is in decline, nonfarm houses will very probably replace farmsteads as the dominant feature of the cultural landscape.

The land availability factor here could conceivably lead to an increasing population even in the more remote areas, thus reversing the trend of the recent period.

APPENDIX

APPENDIX

For the purposes of this study, the rural landscape is divided into two primary categories of elements. One of these is made up of those spatially extensive components which occupy the great majority of the land and which do not involve shelter for a human activity, while the other embraces those which do provide shelter for some activity and which are prominent features of the landscape, though occupying a relatively small part of the total area. Subcategorization has been carried out as follows:

I. Spatially extensive elements involving no sheltering structures.

   A. Land having a public function, chiefly transportation lines, public utilities in the usual sense, and drainage lines.

   B. Land put to agricultural use through tillage processes and classified according to the intensity to which agricultural uses occupy a given parcel of land, as below:

      1. Maximum intensity, meaning near complete agricultural use of land existing in regularly shaped blocks, no smaller than one-half section (square mile).

      2. Major intensity, meaning that agriculture is obviously dominant within the designated plot, but that nonagricultural elements, consisting mostly of wooded and partially wooded areas are also conspicuously present, or that due to the presence of nonagricultural elements, agricultural land is fragmented to the point where there are no regularly shaped blocks as large as one-half section.

3. Intermediate intensity, meaning that within the designated plot, agricultural and nonagricultural elements are nearly in balance (small total area).

4. Minimum intensity, meaning that agricultural use of the land is negligible or entirely absent.

(Differentiation according to type of agricultural use is also made, to the extent of distinguishing areas where cash cropping is the chief enterprise of the full time farmers from those where livestock enterprises are dominant. This is done by enclosing the relatively small cash crop areas by a line on the agricultural land use map.)

C. Land other than that involved in Category I,A and Category II, which does not have an agricultural function, and which is called "nonagricultural land." It is classified both according to intensity of occurrence and type as below:

1. Maximum intensity, meaning near complete nonagricultural status of the land, and subcategorized as follows:

   a. Forested.
   b. Clear or nearly clear nonagricultural land.
   c. Mixed wooded and clear nonagricultural land and marsh land.
   d. Other (air ports, golf courses, cemetaries, etc.).

2. Intermediate intensity, meaning as in classification of agricultural land, that agricultural and nonagricultural areas are nearly in balance. Nonagricultural land of this category is usually wooded or partially wooded.

3. Minor intensity, meaning that nonagricultural land, while still a conspicuous part of the landscape, occupies a minor portion of the parcel in question. This nonagricultural land is also usually wooded or partially wooded.

4. Minimum intensity, meaning that nonagricultural components here reach their smallest extent and are inconspicuous or perhaps nearly nonexistant.

(It is recognized that other Category I lands exist, but these are unique to certain locations, occupy little space, contribute little to the overall landscape, and would be cumbersome to treat here, hence they are generally ignored.)

II. Structures erected to provide shelter for a human activity, along with the land they occupy. They are subcategorized as follows:

A. Farmsteads. (Residence of the farmer plus structures to shelter processes, equipment, products, or livestock.) They are subcategorized as below:

1. Farmsteads in use for essentially the purpose for which they were originally designed, with minimum modification, termed "minimum modification farmsteads."

2. Farmsteads extensively modified, either for a new function or the expansion of a previous one, termed "modified farmsteads."

3. New farmsteads, whose design is in keeping with post World War II technology, termed "new farmsteads."

4. Farmsteads whose form remains essentially unchanged, but whose function has changed, termed "modified function farmsteads."

5. Farmsteads in which only the residence is in use, termed "residence use farmsteads."

6. Farmsteads in which the residence is unused, termed "abandoned residence farmsteads."

7. Farmsteads of which no dynamic use is being made, termed "abandoned farmsteads."

B. Nonfarm residences. (Houses either originally unassociated with farm buildings or once associated with farm buildings which have been removed.) They are subcategorized according to the approximate time of their appearance as follows:

1. Early, prior to the middle 1920's.

2. Prewar, prior to the end of World War II, but since the middle 1920's.

3. Postwar, since the end of World War II, up to the middle 1950's.

4. New, since the middle 1950's.

C. Mobile homes.

D. Public and commercial buildings, subcategorized as below:

1. Abandoned.

2. Old.

3. New (within last decade).

The procedure followed in the subcategorization of I,B and I,C elements of the landscape (agricultural and non-agricultural land) was first to drive all roads and to map the categories entirely through visual appraisal of the actual landscape, though designating some transitional areas as questionable. The second step was to examine aerial photographs taken in 1965 to determine whether the general impression gained from the roads could be substantiated by comparison with the pattern as it appeared from the air. On the whole, little discrepancy was noted, though in a few cases, usually due to some type of visual illusion or inability to see the interior of an area, the road impression was obviously distorted, and the categorization was changed to bring it into accord with reality.

Next, sample sections or one-half sections (in the land survey sense of one square mile) in each category was chosen by reference to a table of random numbers and measurements of land use taken. By this method, the range of the

percentage relationship between agriculture and nonagricultural land in each category was computed, and final boundary determination made on this basis. Actually, the only boundary needing any degree of mathematical resolution was that between the maximum and major intensity categories of agricultural land (minimum and minor intensities of nonagricultural land) which do grade into each other, as shown in Tables 5 and 6 by the lack of any gap between the extremes of the categories, and where an arbitrary break point (the midpoint between the means of the two groups of samples was chosen) thus sometimes becomes necessary if a boundary is to be drawn.

No other real boundary problem exists, both because the intermediate intensity categories are small, and also because a gap exists between the extreme samples of the intermediate and the extremes of the intensity categories immediately above and below. This gap is small between the intermediate and major intensity agricultural (intermediate and minor nonagricultural) being only 1.5 percentage points, but it is very large between the intermediate and minimum agricultural (intermediate and maximum nonagricultural). Both this large gap and the small extent of the intermediate categories are due to a tendency to make either considerable agricultural use of the land or else very little. The great bulk of land parcels are either over 75 percent or under 10 percent in agricultural use.

Sampling was done on a township basis, as a means of arriving at a stratified random sample. In the case of each category except the intermediate, 20 percent of all full or half sections falling within the category, or a minimum of one full or half section was selected as the sample. In both intermediate categories, all sections or half sections falling therein were used, because of the small extent of the category.

In mapping the distribution of agricultural and non-agricultural lands, forty acres was chosen as the minimum plot. Forty acres is a very small area on Figure 14 or Figure 15, but the smallest area possible was chosen in an attempt to reveal the extreme fragmentation which exists in some parts of the County.

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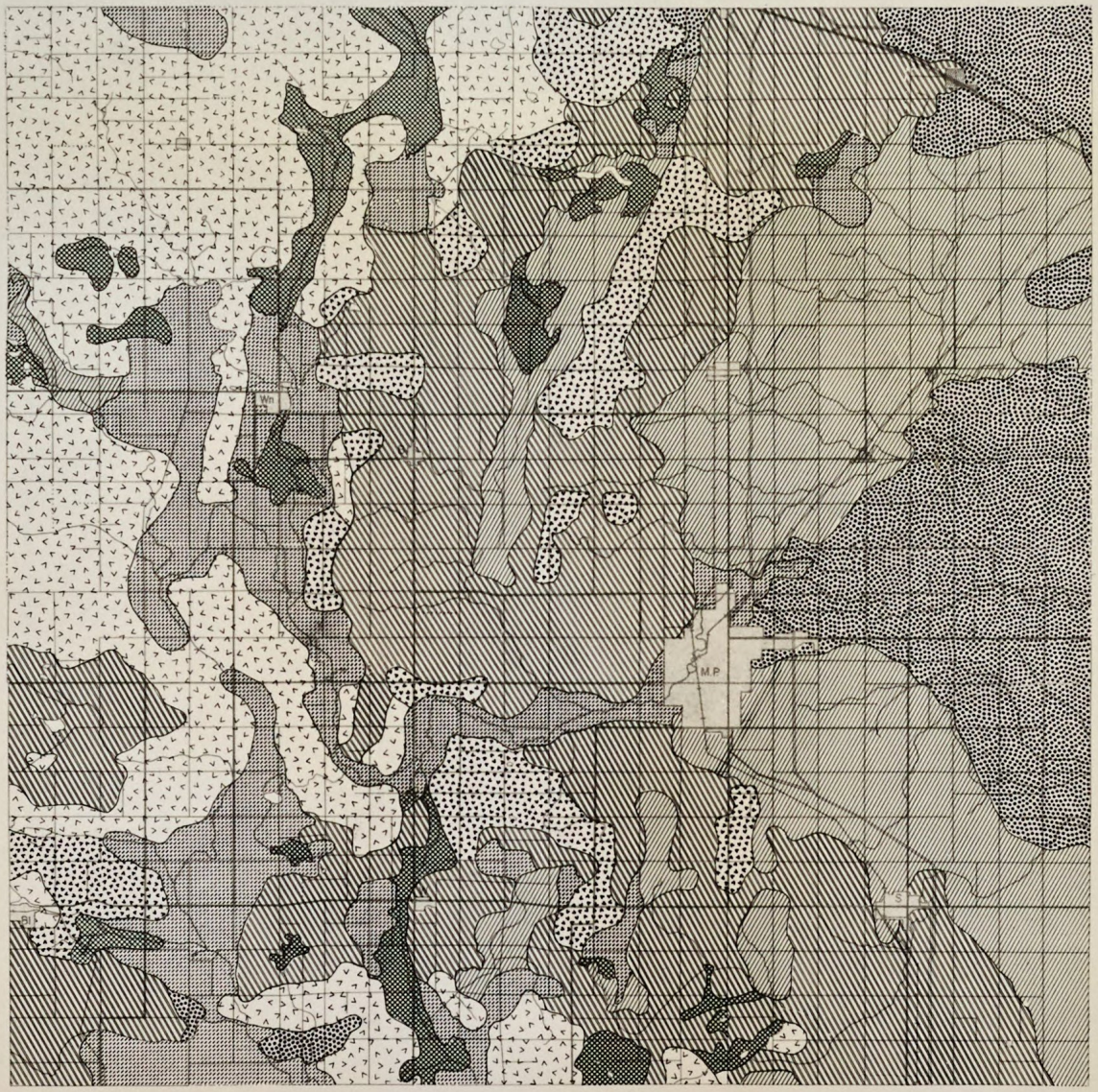
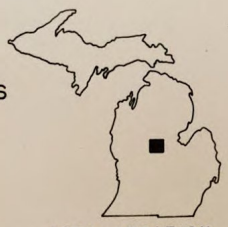
ISABELLA COUNTY
MAJOR LAND TYPES

ISABELLA COUNTY
MAJOR LAND TYPES



FLAT CLAY AND SILT LOAM PLAINS
FLAT, PREDOMINATELY WET SAND PLAINS
UNDULATING CLAY AND SILT LOAM PLAINS
FLAT TO UNDULATING, PREDOMINATELY DRY SAND PLAINS
HILL LANDS, PREDOMINATELY SANDS
HILL LANDS, PREDOMINATELY CLAYS
EXTENSIVE MUCK AND PEAT



AREA LOCATION

0 1 2 3 MILES

EXPRESSWAY
PAVED ROAD
GRAVEL ROAD
DIRT ROAD
RAILROAD
WATERCOURSE
WATERBODY
CITY or VILLAGE

Figure 1