

THE UNIVERSITY OF MANITOBA

PREHISTORIC HUMAN OCCUPATION AND ECOLOGY IN THE SANDILANDS

FOREST RESERVE, SOUTHEASTERN MANITOBA

By

Stanley G. Saylor

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CONTENTS

	Page
Chapter 1 - <u>The Area and the Research</u>	
Location	1
Bedrock Geology	1
Vegetation	1
Settlement History	2
Physiographic areas	5
Research Problems	15
Chapter 2 - <u>The Environment and its Development</u>	
Glacial History	19
Geologic History of the Research area	19
Vegetative development	22
Sandilands Resources	25
Chapter 3 - <u>The Sites</u>	
Previous archaeological work	36
Sampling techniques	37
Field procedures	39
Lithic analysis	42
Osteological remains	44
Soil analysis	45
Site One	45
Site Two	47
Site Three	54
Site Four	58
Site Five	64
Site Six	68
Site Seven	79
Site Eight	84
Site Nine	89
Site Ten	98
Site Eleven	105
Site Twelve	107
Site Thirteen	112
Site Fourteen	115
Site Fifteen	121
Chapter 4 - <u>Correlation and Summary</u>	
Ethnographic comparisons	126
Sandilands resource distribution summary	131
Site distribution and sampling problems	136
Discussion	140
Conclusions	148
Bibliography	150

LIST OF FIGURES

<u>Figure</u>		<u>Page</u>
1	Research Area Location	3
2	Research Area and Site Distribution	4
3	Sandilands Microenvironments	6
4	Lithic Attributes	44
5	Site One Map	46
6	Site Two Map	50
7	Site Three Map	56
8	Site Four Map	61
9	Site Five Map	65
10	Artifacts from Sites One to Five	67
11	Site Six Map	72
12	Site Six Stratigraphy	73
13	Site Six Excavated and Surface Artifacts	74
14	Site Six Excavated Artifacts	75
15	Site Seven Map	81
16	Site Seven Artifacts	82
17	Site Eight Map	87
18	Site Nine Map	92
19	Site Nine Artifacts	93
20	Site Ten and Eleven Map	100
21	Site Ten Artifacts	101
22	Site Twelve Map	110
23	Site Twelve Artifacts	111
24	Site Thirteen Map	114
25	Site Fourteen Map	116
26	Site Fourteen Artifacts	117
27	Site Fifteen Map	123
28	Site Fifteen Artifacts	125
29	Sandilands Resource Distribution	142
30	Research Area Surveyed Shown in Relation to Physiographic Regions	144

LIST OF PLATES

<u>Plate</u>		<u>Page</u>
1	Dry Upland Vegetation	10
2	Mesic Upland Vegetation	11
3	Mesic Plateau Vegetation	12
4	Mesic-Moist Plateau Vegetation	13
5	Mesic-Moist Lowlands Vegetation	14
6	Moist Lowlands Vegetation	15

LIST OF TABLES

<u>Table</u>		<u>Page</u>
1	Large Game Mammals of the Sandilands	26
2	Small Game Mammals of the Sandilands	27
3	Mammal Distribution According to Physiographic Area	28
4	Economic Fish of the Sandilands	29
5	Economic Birds of the Sandilands	30
6	Plant Species According to Major Tree Stand	32
7	Plant Species Available in Greatest Abundance	33
8	Lithic Attribute Description	43
9	Site One Scraper	48
10	Site Two Projectile Point	51
11	Site Two Scraper	52
12	Site Two Osteological Data	53
13	Site Three Projectile point	57
14	Site Three Osteological Data	57
15	Site Four Utilized Flake	62
16	Site Four Chopper	62
17	Seed Analysis - Site Four	63
18	Site Five Graver	66
19	Site Six Biface	76
20	Site Six Utilized Flake	76
21	Site Six Scrapers	77
22	Site Six Sand Grain Analysis	78
23	Site Seven Projectile Points	83
24	Site Seven Utilized Flake	84
25	Site Eight Mollusc Analysis	88
26	Site Nine Biface	94
27	Site Nine Scrapers	95
28	Site Nine Flakes	96
29	Site Nine Osteological Data	96
30	Site Nine Seed Analysis	97
31	Site Ten Bifacial Artifacts	102
32	Site Ten Scrapers	103
33	Site Ten Flakes	104
34	Site Ten Effigy Object	105
35	Site Eleven Scrapers	106
36	Site Eleven Osteological Data	106
37	Site Twelve Bifacial Tools	108
38	Site Twelve Scrapers	109
29	Site Thirteen Osteological Data	113
40	Site Fourteen Projectile Points	118
41	Site Fourteen Scrapers	119
42	Site Fourteen Utilized Flake	120
43	Site Fourteen Choppers	120
44	Site Fourteen Osteological Data	121
45	Site Fifteen Flakes	125
46	Site Fifteen Scraper	125
47	Summary of Osteological Material Distribution	133
48	Summary of Site Distribution	137

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Introduction

The survey of the Sandilands Provincial Forest was initiated for a number of reasons: first of all, the area was unknown archaeologically (although a number of other sites elsewhere in southeastern Manitoba have undergone excavation). Secondly, a characteristic of this region is the presence of numerous Lake Agassiz strandlines, which the present author feels are important features in a study of Paleo-Indian settlement patterns. Also, because of previous experience in areas to the south of the Sandilands, the writer wished to continue to study the distribution of prehistoric sites in a systematic manner, and in an area noted for a diverse floral and faunal assemblage.

The aim of the survey was to locate prehistoric sites and to analyze their location with respect to various environments of the region. Special attention was accorded their density and distribution with respect to both physiographic province, and resource distribution and availability. Specific patterns are evident in site location, and trends are noted in the region's geologic history, vegetational development, and resource availability. This thesis will present a hypothesis concerning specific correlations and interrelationships between site distribution and the ecological characteristics of the region.

The archaeological investigations were undertaken in several phases. Prior to field survey operations, a detailed study of published references to the area was done, several initial visits were made to the area, and a research design was formalized. The field research was conducted between June 8 and August 30, 1972. During the following year and into the fall of 1973, laboratory work was conducted. Specific emphasis was placed on the analysis of artifactual, pedological, and osteological data. Also, a study of the literature was undertaken for the purpose

of obtaining information on geologic history, vegetative development, resource characteristics (type, extent, distribution), and comparative ethnographic materials. It is this stage of the research that resulted in a formulation of a hypothesis as to a correlation between the site distribution and the ecological characteristics of the area.

The thesis has been divided into four chapters. The first chapter describes the region, and outlines the original research problem. The second discusses the glacial chronology, Lake Agassiz history, vegetative development, and resource availability. The writer believes that since no previous archaeological work has been done in the Sandilands, it was necessary to describe the region's ecological characteristics in some detail. By studying the prehistoric geological and vegetational developments, in addition to the modern vegetational characteristics, soil, and resource distribution, it was possible to discern patterns in prehistoric site distribution and land use that differed markedly throughout the research area. The third chapter is devoted solely to a description of the archaeological sites and their contents. The final chapter correlates the ecological and the archaeological data by formulating a hypothesis, with specific attention being given to ethnographic comparisons and the question of sampling bias and/or adequacy of research design.

All material is in repository at the Anthropology Laboratory, University of Manitoba under the accession number 118; this includes artifacts, soil samples, photographs, and field and laboratory notes.

CHAPTER ONE

The Area and the Research

Location

The Sandilands Provincial Forest is located in extreme southeastern Manitoba east of Winnipeg and west of the Manitoba-Ontario border. A portion lies north of Highway No. 1 and extends southward almost to the International boundary. The area is accessible by Routes 1 and 12 from Winnipeg and Route 89 from Minnesota (Figure 1, page 3).

Bedrock Geology

Johnston (1921: 9) described the bedrock of the region as Precambrian. No outcrops exist in the research area proper, although they can be found near the Manitoba-Ontario border and in certain localities along the Whitemouth River south of its confluence with the Winnipeg River. In the eastern part of the research area, the bedrock is Palaeozoic limestone. All of the bedrock is overlain by unconsolidated deposits of Pleistocene and Recent age. Ehrlich and Smith (1964: 15) have differentiated three principal rock formations. The eastern half of the area is composed of chiefly acidic intrusive rocks, Archaean or Proterozoic in age, separated in the centre of the area by Ordovician sandstone and shale of the Winnipeg Formation. The western quarter consists of Ordovician limestone and dolostone of the Red River Formation.

Vegetation

The Sandilands exhibits a somewhat unique vegetational situation, as it is crosscut or bordered by several distinct vegetational zones. Rowe (1959: 11) described the forest as the "Great Lakes-St. Lawrence,

Rainy River section." It is characterized as a northward extension of the Great Lakes-St. Lawrence forest with influence on its western periphery by forest and prairie communities. Red and white pines (Pinus resinosa, P. strobus), of greater extent elsewhere in the Great Lakes-St. Lawrence forest, comprise no more than a scattered representation in the Sandilands, mainly in the eastern part. They have been replaced mainly by jack pine (Pinus banksiana). Extensive swamps exist which are favorable for the growth of black spruce (Picea mariana), tamarack (Larix laricina), cedar (Thuja occidentalis), willow (Salix sp.), and alder (Alnus sp.). Inland from rivers are found large areas of balsam poplar (Populus balsamifera), white spruce (Picea glauca), balsam fir (Abies balsamea), and scattered tamarack (Larix laricina). On river banks are found white elm (Ulmus americana), basswood (Tilia americana), Manitoba maple (Acer negundo), bur oak (Quercus macrocarpa), and trembling aspen (Populus tremuloides).

West of the research area is the Aspen Parkland (Bird 1961: 1), situated between the Boreal-Coniferous forest of the Precambrian Shield in Ontario and the prairie of the Red River region.

Settlement History

After 1870, when Manitoba became a province, rapidly increased settlement of the Red River resulted in a heavy demand on timber from this region. The Dawson Road, built in 1868 from the Northwest Angle to the Red River, passes to the northeast of the research area. The Canadian Pacific Railway between Fort William and Winnipeg had little effect on land settlement, although timber for its construction was taken from the Whitemouth River area. The Winnipeg-Rainy River line of the Canadian Northern Railway, completed in 1901, permitted homesteading

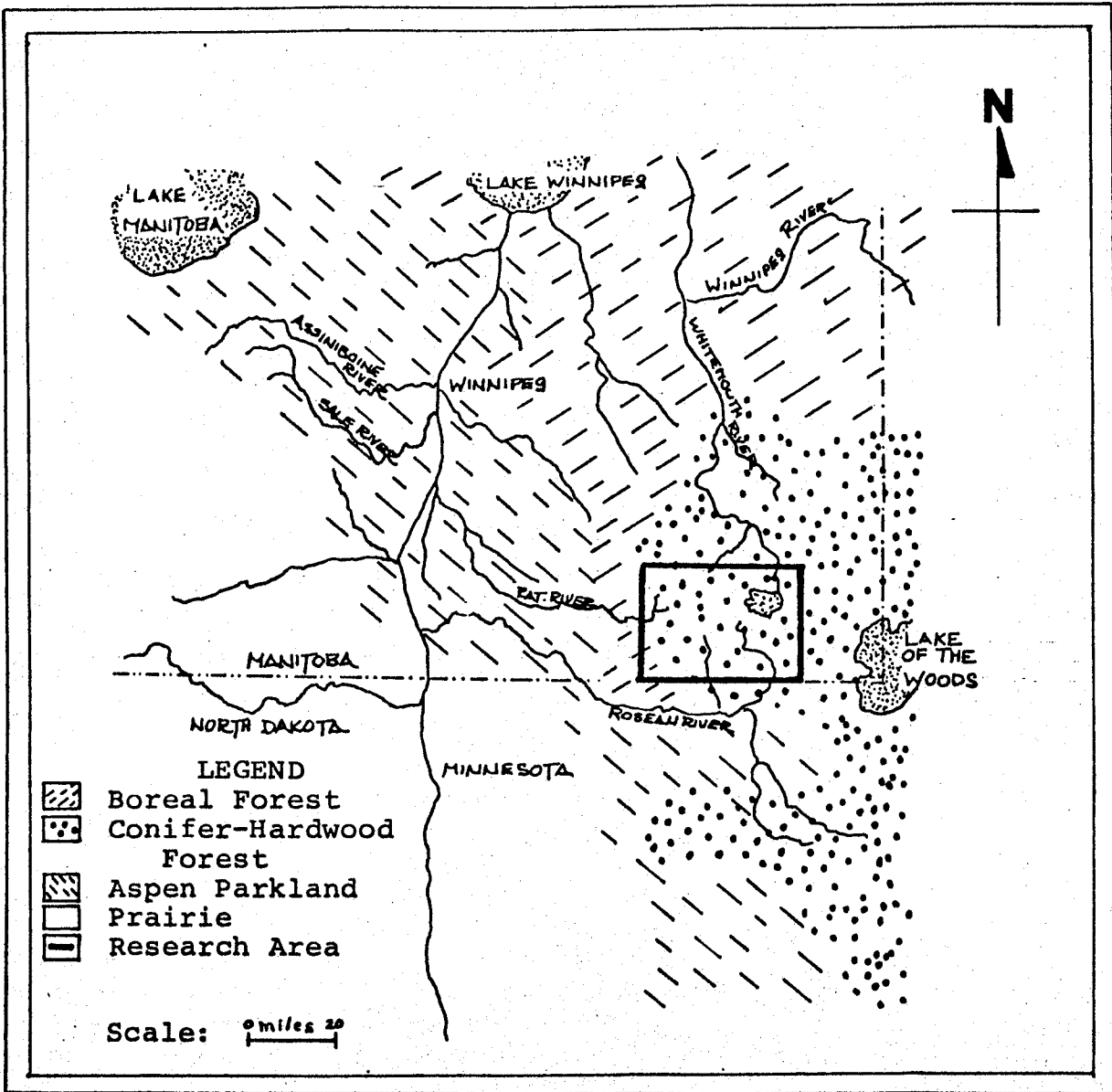


Fig. 1. Research Universe Location

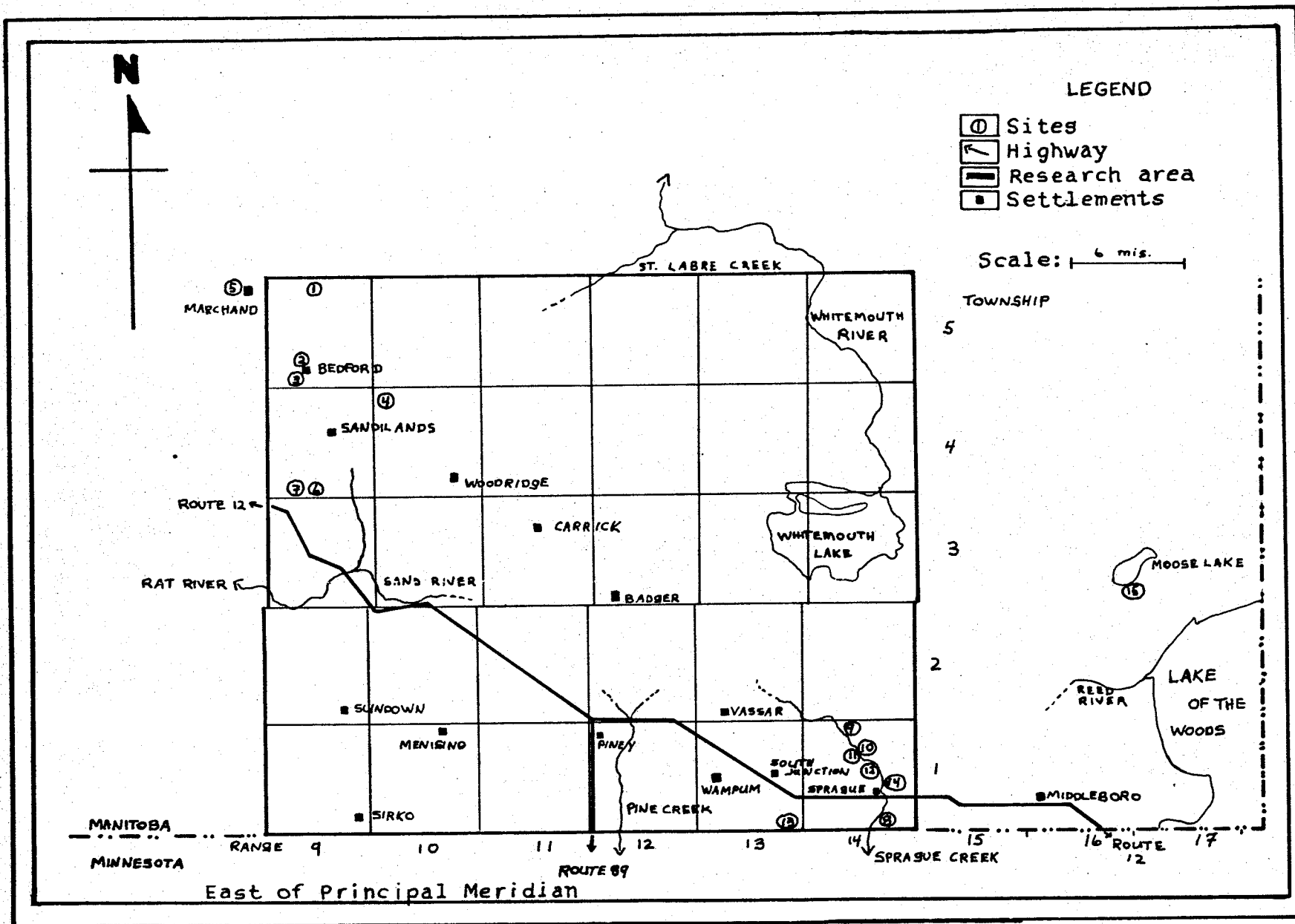


Fig. 2. Research Universe

for the first time. The greatest period of land settlement was between 1900 and 1930. Most of this early settlement was on sand ridges dominated under natural conditions by Pinus banksiana. After the trees were removed by fire or cutting, most settlers were unable to derive additional income from the sandy soil. A pulpwood "boom" of the 1920's provided income for a brief period of time, but the economic depression in the 1930's diminished the population and land use (Ehrlich and Smith 1964: 88-90).

The 1961 Canada census recorded a total population in the Southeastern map area of 4,641 and a density of 1.6 persons per square mile. Approximately forty percent live in unincorporated towns and villages, about twelve percent are located in hamlets or settlements, while the remainder are dispersed throughout the rural area. The average density of the rural population is less than one person per square mile, although this varies substantially throughout the Sandilands. The rural population is concentrated near St. Labre, Sundown, Piney, South Junction, and Sprague. Other small villages are Sandilands, Woodridge, Badger, Vasser, Menisino and Wampum. Near the research area, but outside the area sampled during the survey, are La Broquerie, Marchand, Zhoda, Caliento and Sirko on the western margin, and Middlebro on the eastern margin (Figure 2, page 4).

Physiographic areas

The initial breakdown of the Sandilands into physiographic areas follows that which was established by Ehrlich and Smith (1964) (Figure 3, page 6). The division is based on topography, soil, drainage and vegetation.

The Bedford Hills (hereafter referred to as the Upland), covering

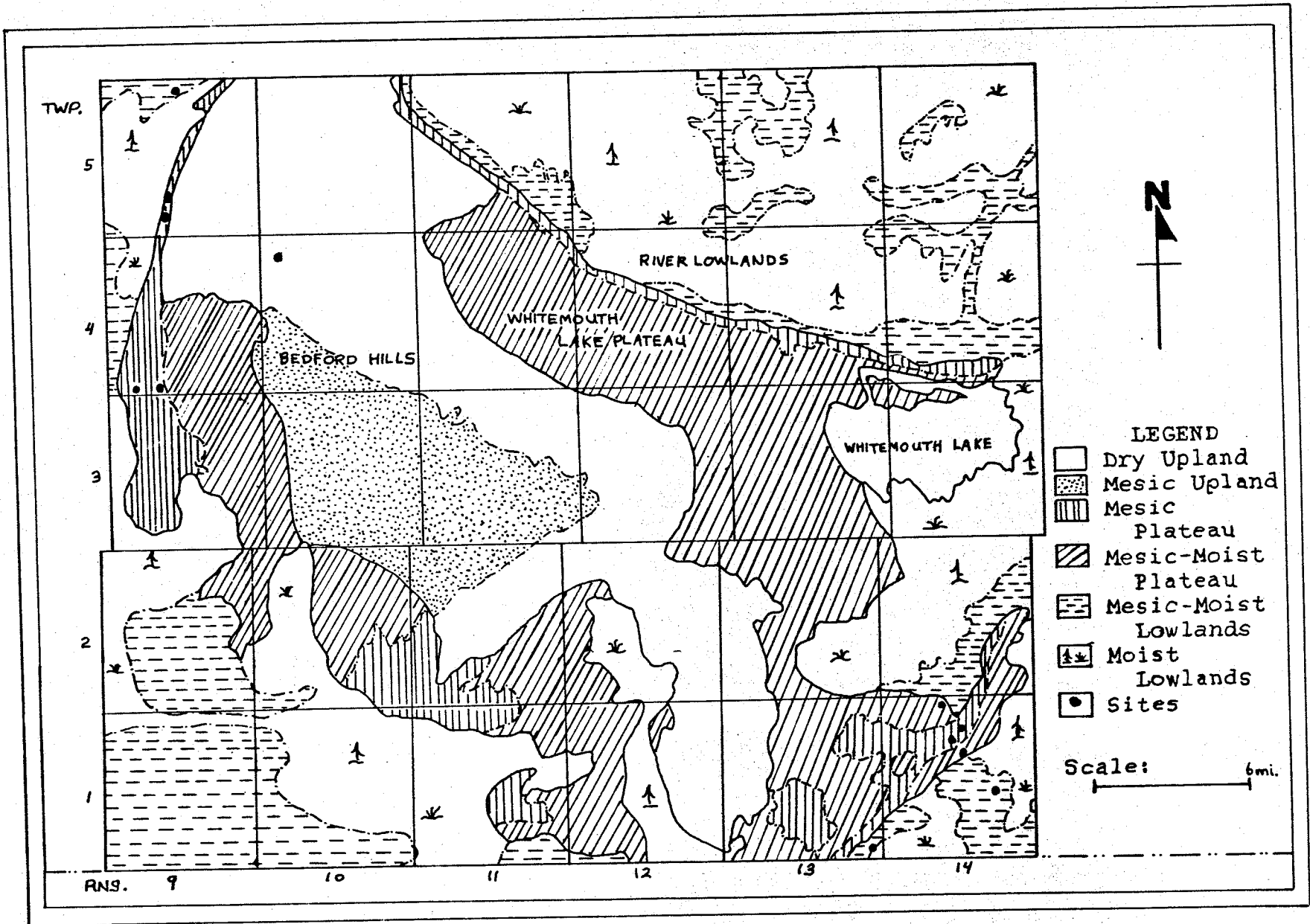


Fig. 3. Sandilands Microenvironments

approximately 265 square miles, constitute the most prominent feature, rising from 1,050 to 1,300 feet in elevation. The Upland stretches from the extreme northern portion of research area, east almost to Whitemouth Lake, and south almost to the International Border. A substantial portion of the Upland comprises numerous, irregularly shaped hills and the prominent UpperCampbell Escarpment (Johnston 1921) in the northwestern and southern section. Undrained basins are common and a few ponds or small lake beds are present. Springs issue from the base of the escarpment or from small peat bogs, although these are impermanent and not well established. A number of artesian wells flow from a stratum of sand and gravel between two layers of glacial till.

The soils of the Upland are predominately podzols and grey wooded soils on dry sand and gravel deposits (Ehrlich and Smith 1946: 29). On the periphery of the Upland are found grey wooded and humic gleysols, as well as low humic gleysols developed on water worked, strongly calcareous till. Podzols, grey wooded, humic gleysols, and low humic gleysols occur on moist, wet sand and gravel.

The vegetation of the Uplands is heavily dominated by Pinus banksiana on the sand and gravel soils. On the periphery of the region are found mixed soft-woods and hardwoods. Near the ponds and undrained depressions, shrub, Salix sp., Alnus sp., and Betula sp. are typical.

The Whitemouth Lake Plateau (hereafter referred to as the Plateau) surrounds the Upland on the western and southern margin, but its greatest area is located in the eastern section. The total area is approximately 335 square miles. The maximum relief is fifty feet, varying between 1150 and 1200 feet above sea level. The only change in relief is that provided by the lower Campbell beach complex in the western area.

Streams are somewhat more frequent than in the Upland, particularly near St. Labre, Sprague, and in the western section at the headwaters of the Sand and Rat Rivers. A notable feature is Whitemouth Lake, situated on the eastern area of the Plateau where the latter merges with the Lowlands. Its maximum depth is reported to be twenty feet, although informants report the majority to be ten feet or less.

Podzol and grey wooded soils cover less area on the Plateau than on the Upland. The most common soils are grey woodeds, humic gleysols, and peat. Peat is prominent in areas where the drainage has been blocked by strandlines, notably near Whitemouth Lake and in the extreme western and southern margins. Pinus banksiana is quite frequent, mixed with shrub, Quercus sp., Salix sp., Alnus sp., and Betula sp. (Ehrlich and Smith 1964 Soils Map).

The River Lowlands (hereafter referred to as the Lowlands), occupying some 480 square miles, surround the Upland and Plateau on all sides, but are most extensive in the eastern region of the research area. The maximum relief varies from 1100 to 1150 feet in elevation. Most of the region is an expanse of peat broken only by small "islands" of gravel bars or beaches. A few small ponds or lakes may be found. These beaches and bars may be up to several miles in length, ten feet in height, and between 100 and 500 feet in width. They frequently act as dams which block the surface drainage. The major rivers in this region are the Whitemouth, St. Labre and Pine Creek. This region is most extensive to the east and north of the Upland, stretching to Route 1 and Lake of the Woods.

Organic soils are dominant in the Lowlands, with shallow and deep peat broken by grey wooded soils, humic gleysols, podzols, and low