OUTDOOR RECREATION FOR NEBRASKA

A Comprehensive Plan

Volume I

Norbert T. Tiemann, Governor

Nebraska Game and Parks Commission

M. O. Steen, Director

Commission Members:

Martin Gable, Chairman
W. C. Kemptar
M. M. "Milt" Muncie
Francis Hanna
James C. Columbo
Dr. Bruce Cowgill
Charles E. Wright

1968

This document was prepared by the staff of the
Nebraska Game and Parks Commission.

NEBRASKA
PUBLIC LIBRARY COMMISSION

PREFACE

Extensive studies by governmental agencies, plus the experience of private citizens, leads to the inescapable conlusion that this Nation has made great progress in things technological but has fallen far behind this pace in social progress. For the good of the Nation, machines and people must be brought into balance in our thinking and action, say those who know about such matters. The American people have set out to do just that!

"The devil finds work for idle hands" says an old adage. There is more truth than poetry in this saying, here in this Nation of ours. It is imperative that we provide healthy recreation for a people with ever-increasing leisure time on their hands.

Since outdoor activity is the principal source of recreation for the American people, the Land and Water Conservation Fund program is designed to accelerate the acquisition of areas of land and water for outdoor recreational purposes, and to develop such areas for these purposes. This program is especially significant and especially welcome in the State of Nebraska.

Outdoor Recreation for Nebraska, a Comprehensive Plan, is just what the title indicates. It identifies the present and future needs for outdoor recreation in Nebraska, and recommends ways and means of meeting those needs. In my opinion, it is an outstanding as well as a very practical presentation of Nebraska's potential and needs in outdoor recreation with special emphasis on meeting those needs at the local level.

This plan represents an extension and refinement of a state plan which was prepared in 1965 with assistance from the Land and Water Conservation Fund Act of 1965. This "second generation" plan of the state's comprehensive planning effort for outdoor recreation was prepared by the staff of the Nebraska Game and Parks Commission with no federal financial assistance from any source.

With both pleasure and pride, therefore, I certify that this document is the official statewide comprehensive outdoor recreation plan of the State of Nebraska.

M. O. Steen,
State Liaison Officer,
State of Nebraska.

205310

TABLE OF CONTENTS

ABSTRACT 1

Chapter I. GOALS AND OBJECTIVES 5

GENERAL OUTDOOR RECREATION 6

Objectives 6

Other Policy Guidelines 8

FISH AND WILDLIFE 9

Chapter II. LEGAL AUTHORITIES 12

SECTION 81-805 12

SECTION 81-815.22 15

SECTION 81-815.23 16

SECTION 37-427 16

SECTION 37-428 17

SECTION 37-429 17

OPINIONS OF THE ATTORNEY GENERAL 17

Chapter III. PLANNING PROCESS 23

PLANNING PROCEDURES 23

PARTICIPATION IN THE PLANNING PROCESS 24

Chapter IV. COORDINATION WITH RELATED PLANS AND PROGRAMS 26

Chapter V. DESCRIPTION OF STATE 29

GENERAL DESCRIPTION 29

CHARACTERISTICS 33

Physical 33

Distribution 35

Climatic 37

History 38

Chapter VI. DEMAND FOR OUTDOOR RECREATION 42

PROCEDURE 42

POPULATION ANALYSIS 45

Density and Distribution 45

Trends and Projections 48

Population Characteristics 64

Age 64
Sex 66
Race and Origin 66
Occupational Composition 67
Education 68
Marital Status 71
Place of Residence 71
Nonresident Population 72

ECONOMIC GROWTH 75

Business Indicators 75

Income Levels 78

LEISURE TIME 79

MOBILITY 81

Transportation Picture 81

Mobility Trends 82

PEOPLE'S INTERESTS 83

Activity Participation 83

Expressed Interests 91

DEMAND PROJECTIONS 92

SUMMARY 98

Chapter VII. SUPPLY OF OUTDOOR RECREATION RESOURCES 102

INVENTORY OF NATURAL RESOURCES RELATED TO OUTDOOR RECREATION 102

Forests and Lands 102

Waters 103

Fisheries 104
Supply and Capacity 105

Wildlife 107

Upland Game 107
Species and Distribution 107
Current Status 107
Factors Affecting Supply 114
Big Game 114
Species and Distribution 114
Current Status 116
Factors Affecting Supply 116
Migratory Wildfowl 121
Availability of Game for Public Hunting 124

INVENTORY OF PUBLIC OR QUASI-PUBLIC LANDS AVAILABLE FOR OUTDOOR RECREATION 127

Federal Lands 127

Forest Service 127
Bureau of Sport Fisheries and Wildlife 130
National Park Service 131
Corps of Engineers 131

Quasi-Public and Other 132

Nebraska Game and Parks Commission 132

State Parks 132
State Recreation Areas 133
State Historical Parks 134
State Wayside Areas 137
State Special Use Areas 137

Regional Analysis of Public Lands and Facilities Available for Non-urban Outdoor Recreation 138

Facilities 145

Outdoor Recreation Facilities of Counties 145

Outdoor Recreation Resources of Municipalities 145

Villages 165
Cities of the Second Class 168
Cities of the First Class 168
Lincoln 171
Omaha 171

PRIVATE RECREATION RESOURCES 176

Conservation Needs Inventory by the SCS 176

Hunting and Fishing 179

Vacation Farms and Ranches 179

FHA Financed Outdoor Recreation Projects 180

Outdoor Swimming Pools 180

Golf Courses 180

Organized Sportsman's Clubs 180

POTENTIAL SUPPLY OF OUTDOOR RECREATION RESOURCES 185

Recreation Oriented to Water Resources 185

State Parks 190

State Wayside Areas 191

Historic and Archeologic Sites 191

Scientific Sites 192

Fisheries 192

Creation of New Waters 192
Improved Management of Existing Waters 192
Watershed Management 194
Development of Tools to Provide Greater Use of Private Waters . 194

Wildlife and Hunting 194

County Recreation Potentials 195

Urban Outdoor Recreation 196

SUMMARY 196

Chapter VIII. NEEDS FOR OUTDOOR RECREATION 202

LANDS AND WATERS 202

Standards 202

Land Needs 207

Class I, II and III Non-urban Recreation Lands 207
Class I and II Municipal Recreation Lands 208
State Wayside Areas (Class I) 212
Interstate "80" 212
Other Wayside Areas 216
Historic, Scientific and Cultural Sites (Class VI) 216

FACILITIES AND PROGRAM NEEDS BY ACTIVITIES 219

Picnicking 219

Camping 220

Boating and Water-skiing 231

Outdoor Swimming 233

Hunting 241

Production of Game 241
Access to Game 242

Fishing 243

Opportunities for Supplying Needs 243
Creation of New Waters 243
Improved Management of Existing Waters 245
Improved Watershed Management 246
Increasing Public Access 246
Additional Needs for Fish Hatchery Production 246
Warmwater Production and Stocking 247
Coldwater Production and Stocking 247

Hiking, Nature Study and Walking for Pleasure 249

Horseback Riding 250

Bicycling 252

Driving for Pleasure and Sightseeing 253

Winter Sports 254

Games and Sports 254

Golf Courses 256

Playfields and Playgrounds 258

Playgrounds 258
Playfields 258
Other Games and Sports Facilities 260

Handicapped Needs 260

Special Needs for the Elderly 261

Needs of Low-Income Groups 261

Other Programs Needed 261

SUMMARY 262

Chapter IX. DELINEATION OF RECREATION RESPONSIBILITIES 267

BIBLIOGRAPHY 270

LIST OF FIGURES

Figure		Page
5.1	Physical features of Nebraska	30
5.2	Average annual precipitation and days between killing frost	31
5.3	Population distribution in Nebraska	32
5.4	Population distribution in Nebraska	32
5.5	Historical sites	34
6.1	Estimated socio-economic regions of Nebraska with their central cities, 1960	44
6.2	Geographical population distribution for Nebraska, 1960	47
6.3	Population trends and projected populations for 1970 and 1980 in Nebraska	49
6.4	Trends and projected trends of per cent of Nebraska's population which is urban	49
6.5	Past trends of rural and urban populations of Nebraska	51
6.6	Past and projected population trends for the South Sioux City SEA	54
6.7	Past and projected population trends for the Omaha SEA	54
6.8	Past and projected population trends for the Lincoln SEA	55
6.9	Past and projected population trends for the Beatrice SEA	55
6.10	Past and projected population trends for the Norfolk SEA	56
6.11	Past and projected population trends for the Columbus SEA	56
6.12	Past and projected population trends for the Grand Island SEA	57
6.13	Past and projected population trends for the Hastings SEA	57
6.14	Past and projected population trends for the Kearney SEA	58
6.15	Past and projected population trends for the McCook SEA	58
6.16	Past and projected population trends for the North Platte SEA	59

Figure		Page
6.17	Past and projected population trends for the Ogallala SEA	59
6.18	Past and projected population trends for the Valentine SEA	60
6.19	Past and projected population trends for the Scottsbluff SEA	60
6.20	Population growth rates by county (1960-1966)	63
6.21	Population by median age group by county (1960)	63
6.22	Distribution of Nebraska population by age group, 1900-1960	65
6.23	Counties with largest proportion of high school graduates	69
6.24	Median schooling completed by county	70
6.25	Trend in number of hunters based on annual license sales (1943-1966)	73
6.26	Trend in number of fishermen based on annual license sales (1943-1966)	74
6.27	Dominant land use of rural areas according to type of farm income	77
6.28	Motorboat registrations in Nebraska, 1960-1967	85
6.29	Per cent of participation by visitors interviewed at 15 recreational areas in various primary and secondary activities	87
6.30	Annual demand for outdoor recreation in Nebraska, residents 12 years old and older	96
6.31	Peak season demand for outdoor recreation in Nebraska, residents 12 years old and older	97
7.1	Pheasant range map	108
7.2	Prairie grouse range map	108
7.3	Bobwhite quail range map	109
7.4	Cottontail and squirrel range map	109
7.5	Trends in numbers of upland game hunters, 1955-1966	111
7.6	Trends in upland game harvest, 1955-1966	112
7.7	Distribution of cropland adjustment program acres open to public hunting in 1967	115

Figure		Page
7.8	White-tailed deer range in Nebraska	117
7.9	Mule deer range map	118
7.10	Antelope range map	118
7.11	Wild turkey range in Nebraska	119
7.12	Regions used for analysis of waterfowl harvest data	123
7.13	Waterfowl range map	123
7.14	Distribution of public non-urban outdoor recreation lands	128
7.15	Acres of recreation land per 1,000 population for 304 villages in Nebraska with over 100 population	166
7.16	Summary of size of recreation areas administered by 304 villages in Nebraska	166
7.17	Summary of activities provided and participated in by the most people on an annual basis on 393 recreation areas in 304 villages in Nebraska	166
7.18	Summary of quality of facilities and maintenance of 291 areas operated by villages	167
7.19	Acres of recreation land per 1,000 population for 89 cities of the second class in Nebraska	167
7.20	Summary of size of recreation areas administered by 89 cities of the second class in Nebraska	167
7.21	Summary of activities provided and participated in by the most people on an annual basis on 217 recreation areas in 89 cities of the second class in Nebraska	169
7.22	Summary of quality of facilities and maintenance of 217 areas operated by cities of the second class	169
7.23	Acres of recreation land per 1,000 population for 23 cities of the first class	170
7.24	Summary of size of recreation areas administered by 23 cities of the first class	170
7.25	Summary of quality of facilities and maintenance of 150 areas operated by cities of the first class	172
7.26	Summary of activities provided and participated in by the most people on an annual basis on 150 areas in 23 cities of the first class	172

Figure | Page

7.27 Summary of size of recreation areas administered by the city of Lincoln 173

7.28 Summary of activities provided and participated in by the most people on an annual basis on 39 recreation areas in Lincoln . . 173

7.29 Summary of quality of facilities and maintenance of 39 recreation areas administered by the City of Lincoln 174

7.30 Summary of size of recreation areas administered by the City of Omaha 174

7.31 Summary of activities provided and participated in by the most people on an annual basis on 71 recreation areas in Omaha 175

7.32 Summary of quality of facilities and maintenance of 71 recreation areas administered by the City of Omaha 175

7.33 Activities participated in by the most people on 37 areas controlled by outdoor sportsman's clubs 184

7.34 Organized small watersheds 189

8.1 Class I and II non-urban land needs based on socio-economic area populations and non-urban land standards outlined in Table 8.1 209

8.2 Class III non-urban recreation land needs based on socio-economic area populations and non-urban land standards outlined in Table 8.1 210

8.3 Area of primary need for non-urban recreation lands 211

8.4 Needs for state wayside areas 211

8.5 Boating and water-skiing needs by socio-economic area for 1972, 1980, 2000 compared to present supply 232

LIST OF TABLES

Table		Page
6.1	Socio-economic areas of Nebraska showing land areas and population - present and projected	46
6.2	Rural-urban residents, 1860-1960	50
6.3	Estimated populations and per cent changes for various census areas (1960-1985)	52
6.4	1966 populations and per cent change from 1960 for urban places of 14 socio-economic areas	62
6.5	Nebraska labor force breakdown	68
6.6	Average work week paid vacation, and number of holidays by major occupational groups	80
6.7	Participation in selected activities by parties interviewed at 12 selected Nebraska reservoirs surveyed during the summer of 1967	86
6.8	Participation in selected activities by parties interviewed at three Nebraska state parks surveyed during the summer of 1967	88
6.9	Visitor group characteristics at 15 recreational areas surveyed during the summer of 1967	89
6.10	Age grouping of visitors interviewed at 15 recreational areas during the summer of 1967	90
6.11	Character of visit for persons interviewed during on-site survey at 15 recreational areas during the summer of 1967	90
6.12	Types of accommodations used by visitors interviewed who stayed overnight at 15 recreational areas during the summer of 1967	90
6.13	Distribution of visitation by days in the week at 15 recreation areas surveyed during the summer of 1967	91
6.14	Estimated Nebraska resident demand for outdoor recreation during the peak season expressed as occasions of participation by activities	94
6.15	Nebraska's estimated annual resident demand for outdoor recreation expressed as occasions of participation by activities	95

Table		Page
7.1	Capacity in annual fishing trips for various waters by class	105
7.2	Summary of estimated annual capacity of fishery resources by socio-economic area (expressed as fisherman trips)	106
7.3	Upland game harvest by resident hunters 1955-66	110
7.4	Summary of harvests of big-game species, 1950-66	120
7.5	Waterfowl harvests by species for three high years and three low years	122
7.6	Duck harvest data by region, 1960 season	122
7.7	Summary of public lands available for non-urban outdoor recreation	125
7.8	Summary of acreage included in state recreation areas by size classes	135
7.9	Summary of lands and waters included in state recreation areas	135
7.10	Ownership of state recreation areas	136
7.11	Summary of recreation lands by size classes for state special use areas	136
7.12	Summary of water areas by size classes for state special use areas	139
7.13	Summary of lands and waters of state special use areas	139
7.14	Summary of ownership for state special use areas	140
7.15	Summary of public lands available for non-urban outdoor recreation by regions and by administrative classes	141
7.16	Summary of activities provided for and participated in on non-urban areas available for public recreation	146
7.17	Summary of facilities provided on public and quasi-public non-urban lands available for outdoor recreation	147
7.18	Summary of urban outdoor recreation resources by socio-economic area and size class of cities	149
7.19	Summary of recreation resources provided by the private sector in Nebraska	177

Table		Page
7.20	Summary of instant capacities for outdoor recreation on 397 inventoried private areas	178
7.21	Distribution of private outdoor swimming pools in Nebraska by socio-economic area	181
7.22	Distribution of private golf courses by socio-economic area in Nebraska	182
7.23	Outdoor recreation facilities provided on lands owned or leased by 37 outdoor sportsman's clubs in Nebraska	183
7.24	Major water resource development projects planned for Nebraska	187
7.25	Potential historic sites or monuments, their location by county, and eligibility for national landmark status	193
8.1	Standards for estimating land needs for outdoor recreation	203
8.2	Needs for non-urban recreational lands (Class I, II and III)	205
8.3	Estimated minimum municipal needs for recreation lands for municipalities over 200 in population in 1967	213
8.4	Gross picnicking needs and estimated deficiencies by socio-economic area	221
8.5	Gross camping needs and estimated deficiencies by socio-economic area	225
8.6	Gross needs and deficiencies for boating waters by socio-economic area	227
8.7	Gross water-skiing needs and deficiencies by socio-economic area	229
8.8	Outdoor municipal swimming pool needs by socio-economic area	235
8.9	Gross needs for swimming beaches by socio-economic area in acres of water	239
8.10	Gross needs for additional fishing capacity in fisherman days by socio-economic areas in Nebraska (Demand, present capacity and deficiencies expressed as activity occasions)	244
8.11	Gross needs and deficiencies for nature trails by socio-economic area	248
8.12	Gross needs and deficiencies for hiking trails by socio-economic area	251

Table | Page

8.13 Gross needs and deficiencies for ice skating areas based upon one surface acre per 2,500 population 12 years and older . . . 255

8.14 Needs for new golf courses based on available courses for public use and identified standards 257

8.15 Minimum criteria for playgrounds and playfields in municipalities 259

8.16 Summary of gross developed land and water needs by socio-economic area (based on design-load calculations and data from Tables 8.4 through 8.13) 264

ABSTRACT

ABSTRACT

Planning objectives, legal authority of the Nebraska Game and Parks Commission to participate in the Land and Water Conservation Fund program, participation in the planning process, coordination with related plans and programs, description of State, delineation of recreation responsibilities, and special problems have been treated. Demand, supply, needs and the program for implementation which are the primary elements in this plan are treated extensively in detailed description and illustration.

The increasing rate of demand for outdoor recreation in Nebraska has been especially evident in recent years. The procedure used for analysis of demand was based largely on population trends. Population analysis was made on a statewide scale, and also by hypothetical "socio-economic areas." This concept was based on the assumption that certain regions in the State have a natural economic base and resulting social structure. Fourteen "socio-economic areas" were delineated. Population and demand projections, expressed as activity occasions for each outdoor recreation activity, were made for each area.

Population distribution within the State is extremely irregular, and to a large extent, follows the major river systems. The major portion of Nebraska's population is concentrated in the eastern one-third of the State and in the Platte Valley.

Nebraska has experienced a relatively slow rate of growth in comparison to the national rate; however, a greater rate of growth may be expected during the period 1967 to 1985. For this period of time, it is estimated Nebraska's population will increase by 26.5 per cent.

The impact of the many social factors evident within the State were considered in relation to demand for outdoor recreation. Age, sex, nationality, occupational composition, education, marital status, and area of residence were considered the most important.

Economically, Nebraska is growing at a relatively slow rate. Recreation as an industry can contribute much toward desired growth. Income levels and leisure time are increasing in the State. Nonresident use is increasing and tourist habits and demand expressed through participation, along with the resident, depends primarily on various types of recreation that are available. The mobility of both resident and nonresident populations is steadily increasing.

Hunting and fishing are popular outdoor recreation activities with Nebraskans. The popularity of water sports is increasing substantially due to increased construction of reservoirs within the State. Picnicking, camping and swimming also rank high in participation.

Resident demand projections by activity indicate that demand for each activity will increase at a significantly greater rate than population growth, with the possible exception of hunting. Nonresident demand will be particularly significant at major reservoirs, wayside parks, road ranches and historical sites.

Over 97 per cent of Nebraska is in farms with acreage about equally divided between cropland and grazing land. Approximately two per cent of the State is forest and woodland, occurring primarily along stream courses. The major rivers within the State are the Missouri, Niobrara, Elkhorn, Loup Rivers, Platte, Republican and Blue Rivers. Approximately 40,000 bodies of water now exist, of which 3,350 are in excess of ten acres.

Nearly a quarter of a million acres of fishing water can be found in Nebraska. Most of this area, however, is located in western Nebraska and is not readily available to anglers living in the densely populated eastern part of the State. Nebraska supports primarily a warmwater fishery, but some coldwater streams and a few reservoirs in the northern and western areas support trout. Hunting is a favorite recreation activity for large numbers of Nebraskans. Hunters have the opportunity to hunt five species of upland game birds, four species of small game mammals, and three species of big-game mammals, plus ducks and geese. Most of this bountiful supply of game is produced and harvested on privately owned land.

Public lands available for non-urban recreation total about 715,583 acres, or approximately 1.35 per cent of the total state area. Three-fourths of this land is owned and managed by federal agencies and 25 per cent by the Nebraska Game and Parks Commission. The Game Commission owns or leases 152 areas encompassing 182,231 acres, made up of five major parks, 20 wayside areas, six historical parks, 53 recreation areas, and 68 special use areas. Most state areas include waters or provide access to bodies of water having value for recreation. They are managed to provide recreational activities which require little specialized equipment.

Counties have not taken an active role in providing outdoor recreation facilities in Nebraska. An inventory of urban recreation lands revealed 13,314 acres of outdoor recreation lands were administered by municipalities, of which 5,143 acres were in metropolitan areas, 2,463 acres in 23 cities of the first class, 4,165 acres in 86 cities of the second class and 1,543 acres in 258 villages over 200 population.

Development of golf courses, skeet ranges, trap ranges, archery ranges, membership swimming pools and other facilities by clubs or other private organizations such as the Izaac Walton League of America, gun clubs and country clubs, and private enterprise, all contribute to the state's total recreation resources and complements the development of public facilities by political subdivisions and public agencies.

Evaluation of the contribution of private recreation resources was based on information from several sources including the Conservation Needs Inventory

provided by the Soil Conservation Service, U.S.D.A., the Nebraska Golfing Association, the Farmers Home Administration, the Nebraska State Department of Health, and from special studies of the Nebraska Game and Parks Commission.

An estimated 308,000 acres of outdoor recreation lands are provided by the private sector in Nebraska. Over 88,000 acres of water were included in this inventory. Since 97 per cent of the State is in private ownership, the excellent hunting opportunities enjoyed by hunters is a contribution of farmers and ranchers.

The greatest potential for non-urban outdoor recreation lies in development of water resources. Proposed construction of multi-purpose reservoirs will increase recreation opportunities greatly in Nebraska. The Missouri River has an untapped potential for boating, fishing access and related activities. It is limited only by a dearth of suitable access sites. Potential is high within the State for increasing virtually all types of outdoor recreation.

Estimates of needs for Class I, II and III recreation lands are based on standards developed to satisfy conditions existing in Nebraska. Needs for non-urban recreation lands in these classes were estimated on the basis of socio-economic areas. Only qualitative standards were described for Class IV, V and VI lands.

Total identified needs indicate an additional 33,740 acres of non-urban Class I and II lands will be needed by 1972 and 49,449 acres by 1980. For Class III lands, an additional 17,000 acres will be needed by 1972 and 28,964 acres by 1980. Estimated needs for Class I and II lands for political subdivisions totaled 5,423 acres. Lands needed include 671 acres in 50 per cent of the metropolitan areas, 1,789 acres in 83 per cent of the cities of the first class, 1,355 acres in 74 per cent of the cities of the second class, and 1,608 acres in 84 per cent of the villages over 200 in population.

Total estimated needs for picnic units totaled 14,263 for 1972 and almost 22,000 by 1980. A minimum of 3,165 camp units are needed to meet the projected demand of 1972. Emphasis should be placed on development of sites at major reservoirs within the State.

Water needs for boating, water-skiing, fishing, and outdoor swimming, based on design load criteria, were estimated at 209,000 acres by 1972 and 271,000 acres by 1980. Major resource development projects already planned for Nebraska total nearly 145,000 surface acres of water which would be available for recreation use. New construction of small watershed structures are also expected to add a substantial amount of recreation waters to the state's resources. Boating and water-skiing enthusiasm in the State suggest that all potential sites should be developed for maximum use particularly in eastern Nebraska.

Swimming is extremely popular in all age groups. With the high participation in this activity, all potential beach sites should be utilized and developed. High participation by young non-mobile age groups dictates providing swimming opportunity at or near the place of residence. Estimated needs included 101 municipal pools to satisfy this concept.

Needs for hunting were identified in relation to (1) production of game to meet demand, and (2) access to game for public hunting.

Fishing needs were identified on the basis of (1) creation of new waters, (2) improved management of existing waters, (3) improved watershed management, and (4) development of tools to provide greater use of private waters. Creation of new waters under proposed water resource development projects offer the most significant opportunity to meet identified needs for fishing, particularly in eastern Nebraska.

Enhancement of and provision for horseback riding, walking and hiking, driving for pleasure, sightseeing, nature study and bicycling were considered.

An action program was designed to meet identified needs with full consideration of other future water resource programs which may add to user-oriented outdoor recreation lands. If future needs are to be satisfied, immediate action must be taken to insure dedication and development of recreation resources for public use. Proposed acquisition and capital development programs of federal, state and local governmental units were presented by year and units in the action program. Development priorities were designed for use in evaluating projects for funding and activation.

Total anticipated funds for acquisition and development of outdoor recreation areas were presented. An estimated $51,360,000 will be available from all sources for the years 1969 through 1973, pending continuation of existing programs and appropriations by all levels of government.

An estimated $4,092,000 may be available to political subdivisions from federal and state grants-in-aid. With the subdivision being responsible for 25 per cent of the total cost for projects for assistance under the Land and Water Conservation Fund Act, this results in $5,356,000 for programs at this level. Over $21 million included in the action program by political subdivisions must be financed by local units without foreseeable federal or state assistance. An estimated $18,439,785 will be available for capital development of state resources.

Special problems which may delay implementation of an acquisition and development program in Nebraska are centered on three basic issues:

(1) Resolutions of legal problems concerning the authority of the Nebraska Game and Parks Commission to exercise the power of eminent domain for acquisition of certain outdoor recreation lands.

(2) Financing.

(3) Lack of adequate organization at the local and county level to properly execute an outdoor recreation program.

Chapter 1

Goals And Objectives

GOALS AND OBJECTIVES

Nebraska's Comprehensive Outdoor Recreation Plan presents basic guidelines for the development of action programs to acquire and develop lands and waters needed to satisfy the present and future recreational desires of Nebraskans and visitors to the State.

A broad outdoor recreation plan for Nebraska is outlined here, but it remains for state agencies and local units to devise detailed action plans for regional, county or municipal use. This plan should be regarded as a beginning and will be effective only in terms of the actions which it may promote.

The Nebraska Game and Parks Commission is the state agency responsible for the maintenance of the Comprehensive Outdoor Recreation Plan for the State of Nebraska. The Director of the Nebraska Game and Parks Commission is the Liaison Officer for Land and Water Conservation Fund activities. Since the Nebraska Game and Parks Commission is responsible for virtually all phases of outdoor recreation at the state level except spectator sports, a wide variety of recreation interests are represented within the planning agency.

This document is the State of Nebraska's Official Comprehensive Outdoor Recreation Plan and represents an extension and refinement of a state plan which was prepared in 1965 with assistance from the Land and Water Conservation Fund Act of 1965. This "second generation"plan of the state's comprehensive planning effort for outdoor recreation was prepared by the staff of the Nebraska Game and Parks Commission with no federal financial assistance from any source.

The following are goals, objectives and broad policy guidelines for the outdoor recreation program in Nebraska which have been established within the statutory constraints of the Nebraska Game and Parks Commission.

The goals of the outdoor recreation program are consistent with the national goal established by the Land and Water Conservation Fund Act of 1965 and the state goals and policy established by enabling legislation for participation in the program. These broad goals are:

(1) To preserve, develop and assure accessibility to all citizens of Nebraska and its visitors, now and in the future, such quality and quantity of outdoor recreation resources as may be available, necessary and desirable to permit a relatively free choice by the individual for active participation in various outdoor recreation activities;

(2) To strengthen the health and vitality of Nebraska citizens by providing such quality and quantity of outdoor recreation resources necessary and desirable to encourage active individual participation;

(3) To strengthen the economy of Nebraska by provision of such quality and quantity of outdoor recreation resources necessary and desirable to attract nonresident visitors to and through Nebraska; and

(4) To place the responsibility for execution of outdoor recreation programs at the lowest level of government possible -- or with private enterprise -- commensurate with stated objectives and financial and organizational capabilities.

GENERAL OUTDOOR RECREATION

Objectives

1. The objective of the State Park System as indicated by Section 81-815.21, Revised Statutes of Nebraska, is to develop a balanced state park system by providing non-urban park areas for the inspiration, recreation and enjoyment primarily of resident populations and to provide wayside parks as picnic areas or rest stops for the traveling public.

   a. State Parks. To establish, maintain and improve major state parks in those physiographic regions of the State which have desirable and statewide scenic, scientific or historic significance and where sufficient desirable lands for a complete development potential are available, and, where possible, a representative portion can be retained in a relatively undisturbed state. State parks will be developed in such a manner as to provide:

      (1) Facilities for vacation and weekend use by families;

      (2) Day use facilities which will encourage family, group or individual participation commensurate with the local and transient demand.

      (3) A range of participating outdoor recreation activities commensurate with the resource potential of the area;

      (4) Full interpretation of significant historic, scientific and natural features of the area; and

      (5) Location and construction of facilities which are compatible with, enhance, or complement the natural and scenic features of the area.

      (6) Organized camp facilities of a multiple-use nature commensurate with existing and forseeable needs.

   b. State Recreation Areas. To provide non-urban user oriented outdoor recreation opportunity, primarily for day use and secondarily for overnight use, by providing state recreation areas in accordance with identified regional needs, located in accordance with sound park management principles and time distance considerations of the major user populations. State recreation areas will be located and developed in such a manner as to provide:

(1) Opportunity for non-urban outdoor recreation within one hour's driving time of major user populations, particularly urban groups, with emphasis on water based activities;

(2) A range of participating outdoor recreation activities commensurate with the resource potential of the area and regional or transient demand;

(3) Day use facilities which will encourage family, group or individual participation commensurate with local and transient demand;

(4) Facilities which will encourage overnight or weekend use commensurate with the local or transient demand and needs; and,

(5) Location and construction of facilities which are compatible with and enhance and/or complement the natural or scenic features of the area.

c. State Historic Parks. To develop a system of state historical parks which will provide a representative interpretation of the development of the State from prehistoric to modern times for the enjoyment of Nebraskans and visitors to the State. The following policies will guide the establishment of state historical parks:

(1) Only those sites which, in the opinion of competent, recognized authorities, are of notable historical significance to the State of Nebraska, of a size adequate to develop the full interpretive potential of the site, will be considered in establishment of state historical parks;

(2) Restoration of facilities and features and interpretation of the historic significance of the site shall be authentic and based on thorough, competent research; and

(3) State historical parks may be equipped with limited day use facilities when such facilities do not detract from nor interfere with the primary purposes and values of the site.

d. State Wayside Areas.

(1) To provide areas appropriate in size and located at strategic intervals adjacent to main traveled highways for safe and attractive picnic, overnight and rest stops for travelers. Establishment and development of these sites shall be governed by the following policies.

(a) Location will be in accord with the general area identified in the 10-Year State Park Plan prepared in 1961 and with standards identified in the Comprehensive Outdoor Recreation Plan;

(b) Sites will be located in such a manner as to provide safe approach and exit and not create traffic hazards to park or highway users;

(c) Emphasis will be given to development of day use facilities designed to serve traveling families for short periods of time but administered and developed to permit overnight use of short duration, where appropriate;

(d) Interpretive or informative facilities shall be provided at those sites where appropriate for interpretation of significant historic, natural or cultural features of the general area; and

(e) Development of the site shall be compatible with, enhance and complement the natural and scenic features of the area.

(2) To particularly develop the full outdoor recreation potential for Nebraskans and nonresidents adjacent to and in the vicninity of Interstate Highway "80" and to contribute to the economic development of the area by providing (1) intensively developed day use and camping facilities for short term use at selected major interchanges; (2) day use areas oriented to water based outdoor recreation activities at selected interchanges; and (3) special use areas which are easily accessible from Interstate "80" and oriented to lakes or streams frontage along the Platte River for extensive outdoor recreation activities. Location and development of these sites will be of such standards as to enhance the natural beauty and scenic features of Interstate "80" and encourage the development of other related service facilities by the private sector.

2. To enhance the quality of life and physical environment in municipalities of Nebraska by encouraging the development of adequate outdoor recreation opportunity by political subdivisions to meet primarily identified municipal or local needs through allocation of federal grants-in-aid from funds apportioned to the State under the Land and Water Conservation Fund Act of 1965 and the provision of State grants-in-aid for approved outdoor recreation projects in accordance with Sections 37-427 to 37-429 inclusive, Revised Statutes of Nebraska.

Other Policy Guidelines

The following general policy guidelines will provide direction for the total outdoor recreation program in Nebraska within the legislative authority of the Nebraska Game and Parks Commission.

1. The private sector has made and will continue to make a substantial contribution to outdoor recreation. Development and operation of outdoor recreation sites and facilities by the private sector will be encouraged for those types of enterprises which can be operated profitably for public service, or to serve the needs of highly specialized interest groups.

2. Recognizing that maintenance of a high quality outdoor environment is essential to the health and well being of citizens of Nebraska as well as to enjoyment of satisfactory outdoor recreation experiences, the Nebraska Game and Parks Commission shall support and encourage such programs that:

(1) Maintain and enhance scenic and natural beauty both in the urban and non-urban landscape.

(2) Emphasize development of outdoor recreation facilities which are compatible with and enhance the natural environment and beauty.

(3) Recognizes legitimate limitations of physical development of flood plain lands and encourages zoning to promote uses of these lands which are consistent with the degree of flood hazard involved; and that outdoor recreation, wildlife and open space are desirable uses of these lands and, in some instances, may represent the highest and best use.

(4) Protects, maintains and improves and develops the waters of the State for all legitimate beneficial uses including especially fish, wildlife and outdoor recreation.

(5) Provides desirable public or private action for control and abatement of pollution.

3. Emphasis will be given to meeting the outdoor recreation needs of residents. However, opportunities for out-of-state users will be given full consideration in development of outdoor recreation resources.

4. Present state owned outdoor recreation lands and waters or other outdoor recreation lands in which the State has assisted financially in acquisition shall be preserved unless it can be clearly demonstrated that a better alternative use can be made of the resource by the people of Nebraska in which case it shall be the policy to mitigate the loss by replacement of resources of equal value and utility to outdoor recreation.

5. The demand for water based outdoor recreation activities is increasing rapidly and all evidence indicates a tremendous increase in the future. It is a basic resource for outdoor recreation, and the maintenance of a fishery and many forms of wildlife.

   The Commission shall support policies which provide for optimum recreational benefits and full and adequate consideration of all resource values in all water resource development projects.

FISH AND WILDLIFE

The objective of fish and wildlife management activities by the State of Nebraska through the statutory authority of the Game and Parks Commission shall be to perpetuate and enhance the fish and wildlife resources of Nebraska for the recreational, esthetic and scientific use, both consumptive and non-consumptive, for Nebraskans and their visitors.

The principles recognized in developing general policy guidelines to accomplish this objective are:

(1) A responsibility to preserve the opportunity for future generations to share in the benefits and enjoyment of fish and wildlife resources as an important component of a healthy environment.

(2) That wildlife is a product of the land and a renewable natural resource subject to husbandry and stewardship through wise land management, deserving of serious and positive consideration by all levels of government and the private sector in land use.

(3) That fish and wildlife, as renewable natural resources and products of the lands and waters, can be used consumptively to provide recreational harvests by sportsmen.

(4) That game species of fish and wildlife, as well as other species, have non-consumptive values for esthetic, recreational and scientific use.

(5) That maintenance of a healthy fish and wildlife environment and recreational uses of these resources have positive economic and social values for the State of Nebraska and the nation.

The following are broad policies which will provide direction to the fish and wildlife program and under which functional operational policies may be developed.

1. The first consideration shall be the welfare of the fish and wildlife resources in all management decisions.

   (a) No species shall be managed in such a manner as to jeopardize its future population status or to place the species in danger of extirpation.

   (b) Special consideration shall be given to protection and perpetuation of endangered species.

2. Every effort shall be made to retain and enhance existing habitat vital to the fish and wildlife resources.

   (a) Priority shall be given to acquisition of land for critical habitats necessary for perpetuation of individual species or groups of species.

   (b) Land and waters owned or controlled by the State of Nebraska and dedicated to fish and wildlife purposes shall be managed in such a manner as to maximize the benefits of fish and wildlife.

   (c) Programs shall be implemented to inform the public of the values of fish and wildlife resources, and to prevent destruction or degradation of environments through activities such as pollution or indiscriminate use of pesticides and herbicides.

   (d) A portion of the research effort shall be aimed at defining the ecology of fish and wildlife populations to aid in the protection of habitat.

3. Consideration shall be given to all values involved in the use of the resources, whether economic, recreational, ecological, esthetic, scientific, educational or cultural. All persons, including the non-consumptive users, shall have an opportunity to share in the use and enjoyment of fish and wildlife population.

4. The opportunity for harvest of game and fish species shall be as equitable as possible within the limits imposed by natural distribution of the individual species and the location of habitat.

   (a) All species shall be utilized to the fullest extent possible without endangering the resource, and a sustained yield shall be secured at as high a level as possible consistent with the economy of private lands.

   (b) All regulations shall support a sustained yield and be enforced equally to insure an equitable opportunity to harvest fish and game.

   (c) Public information and educational programs shall encourage full utilization of the resource within existing laws and regulations.

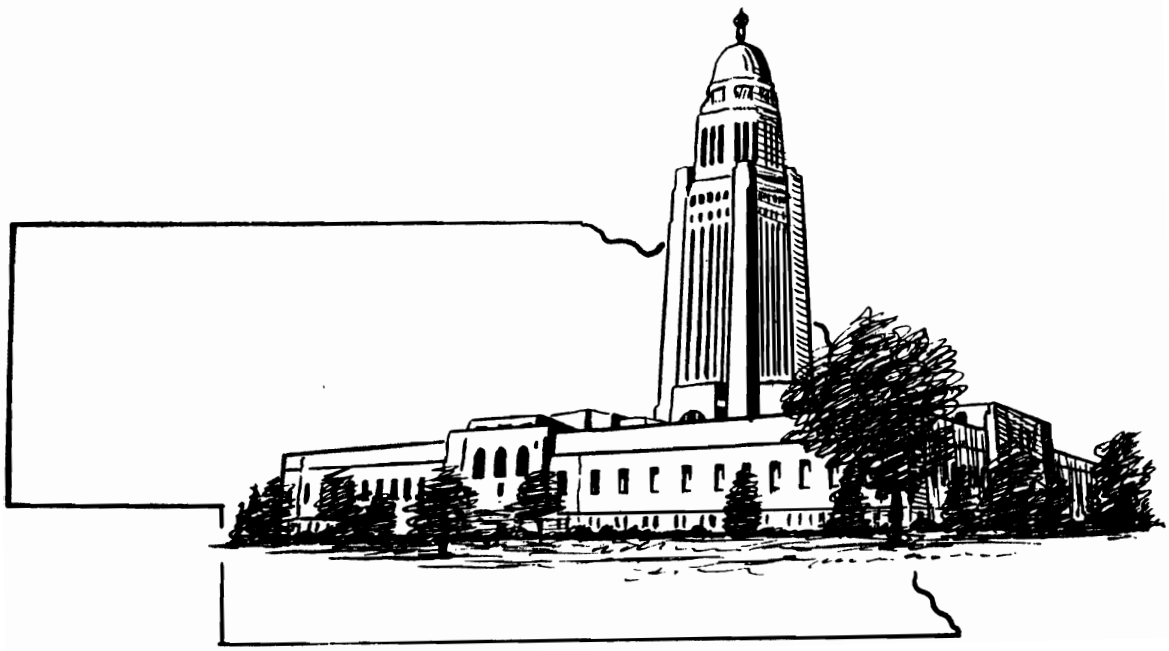
   (d) Acquisition programs to improve public use opportunity shall include only those areas capable of making significant contribution to the needs for additional public hunting and fishing opportunity.

   (e) Lands and waters owned or controlled by the State of Nebraska and operated to provide public opportunity for hunting or fishing shall be managed in such a manner as to maximize these opportunities.

5. Coordination will be maintained with all other public agencies to insure consideration of fish and wildlife resources in land use planning or other activities affecting fish and wildlife to accomplish the objective of the Fish and Wildlife program.

Chapter 11

Legal Authorities



LEGAL AUTHORITIES

Legal authority for participation in the Land and Water Conservation Fund program, and statutes pertinent thereto, are contained in the following portions of Nebraska statute.

SECTION 81-805

Except as herein otherwise provided, the Game and Parks Commission shall have sole charge of state parks, game and fish, recreation grounds, and all things pertaining thereto. All funds rendered available by law, including funds already collected for said purposes, may be used by the commission in administering and developing such resources. The commission shall adopt and carry into effect plans to replenish and stock the state with game and whenever it is in the best interest of the public to do so, to stock the streams, lakes and ponds, whether public or private, of this state with fish. It may plan such extensions and additions to existing hatcheries and such new plants as may be necessary to supply fully the state with game and fish, and cause said plans to be executed, after ascertaining the cost thereof. With the consent of the Governor, it may by purchase, when funds on hand or appropriated therefor are sufficient, or by gift, devise, or otherwise, acquire title in the name of the State of Nebraska to sites therein situated outside organized municipalities, for additional state parks, hatcheries, recreation grounds, game farms, game refuges, and public shooting grounds, and may enter into appropriate contracts with reference thereto, all within the limits of amounts that may be appropriated, contributed, or available therefor. For these purposes, the commission may enter into appropriate contracts, leases, or lease-purchase agreements. The commission, with the consent of the Governor, is authorized to take, receive, and hold, either in the name of the state or in trust for the state, exempt from taxation, any grant or devise of lands and any gift or bequest of money or other personal property made in furtherance of the purposes contemplated by this section and shall preserve and may invest such funds, or the proceeds of such property, in such securities as are authorized by law for the investment of state school funds. Such invested funds shall be known as the State Park and Game Refuge Fund, and shall be used and expended under the direction of the commission. The commission is authorized to make a survey of all lands and areas in the state which are suitable for state parks, game refuges, or other similar purposes contemplated by this section, and to locate and designate any or all of such lands or areas or parts thereof, and to take such action as may tend to preserve or conserve the same. The commission shall publish such informational material as it deems necessary and may, at its discretion, charge appropriate fees therefor. The commission is authorized and empowered to adopt and promulgate rules and regulations, under the procedures set forth in sections 84-901 to 84-919, governing the administration and use of all property, real and personal, under its ownership or control, and the commission is charged with the duty and responsibility of adopting such

regulations as it shall deem necessary to administer the following activities and facilities:

(1) The commission may adopt regulations to designate camping areas on appropriate lands under its ownership or control and to permit camping thereon. As a condition to such permission, the commission may prescribe such rules and regulations as are reasonable and proper governing public use of such camping areas including, but not limited to, access to camping areas, area capacity, sanitation, opening and closing hours, public safety, fires, establishment and collection of fees where appropriate, protection of property, and zoning of activities, such rules and regulations to be posted on appropriate signs at the areas; provided, that any person who camps on lands owned or controlled by the commission not designated as a camping area by the commission, or any person who fails to observe the conditions of occupancy, use, or access, posted as provided in this section, shall not have permission. Any person violating the provisions of the regulations above authorized shall be guilty of a misdemeanor and shall, upon conviction thereof, be punished as provided in subdivision (9) of this section;

(2) The commission may adopt regulations permitting any type of fire, including the smoking of tobacco in any form, and providing for the size, location, and the conditions under which a fire may be established on any area under its ownership or control. The commission may enact regulations permitting the possession, or use, of any type of fireworks not prohibited by law on any areas under its ownership or control. The commission may adopt regulations authorizing management personnel to temporarily revoke permission by the posting of appropriate signs for all fires of any kind whatsoever, including smoking and the use of fireworks, in any area under its ownership or control, when such posting is in the interest of public health, safety, and welfare, or for the preservation of property; provided, that any person who shall light any type of fire, who shall use any fireworks, or who shall smoke tobacco in any form, or who shall leave unattended and unextinguished, any fire of any type and in any location, in any area under the ownership or control of the commission, unless the commission shall have given permission, which permission shall not have been revoked, to such type of fire, use or possession of fireworks, or to such smoking of tobacco, shall be guilty of a misdemeanor and shall, upon conviction thereof, be punished as provided in subdivision (9) of this section;

(3) The commission may adopt regulations permitting pets, domestic animals, and poultry, to be brought upon, possessed, grazed, maintained, or run at large, on any area, or portion of any area, under its ownership or control; provided, that any person who brings upon, possesses, grazes, maintains, or permits to run at large his pets, domestic animals, or poultry on any area, or portion of any area, under the ownership or control of the commission, unless the commission shall have permitted such bringing upon, possession, grazing, maintaining or running at large, shall be guilty of a misdemeanor and shall, upon conviction thereof, be punished as provided in subdivision (9) of this section;

(4) The commission is authorized to enact regulations, temporarily or permanently, permitting hunting, fishing, or the public use of firearms, bow and

arrow, or any other projectile weapons or devices on any area or any portion of any area under its ownership or control. The commission is authorized to enact special regulations permitting trapping on any such area or areas; provided, that any person who shall, without the permission of the commission, hunt, fish, trap, or use firearms, bow and arrow, or any other projectile weapon or device on any area or any portion of any area under the ownership or control of the commission, shall be guilty of a misdemeanor and shall, upon conviction thereof, be punished as provided in subdivision (9) of this section;

(5) The commission is authorized to enact regulations permitting swimming, bathing, boating, wading, water skiing, and the use of any flotation device on all or any portion of any area under its ownership or control. Such regulations may include permission for swimming, bathing, boating, water skiing, wading, or the use of flotation devices, and all other water-related recreational activities in all areas, or any portion of any specific area, under the ownership or control of the commission, and may provide for special general conditions for specific swimming, water skiing, boating, bathing, or wading areas, which shall be posted at such areas; provided, that any person who shall swim, bathe, boat, wade, water ski, or use any flotation device on all or any portion of any area under the ownership or control of the commission, unless the commission shall have given permission to such activity in the specific area or portion thereof, shall be guilty of a misdemeanor and shall, upon conviction thereof, be punished as provided in subdivision (9) of this section;

(6) The commission may enact regulations relating to the protection, use or removal of, any public real or personal property on any area under its ownership or control, and may regulate or prohibit the construction or installation of any privately-owned structure on such area. The commission may close all or any portion of any area under its ownership or control to any form of public use or access with the erection of proper signs, without the enactment of formal written regulations; provided, that any person who shall, without the permission of the commission, construct or install any privately-owned structure, or who shall use or remove any public real or personal property, on any area under the ownership or control of the commission, or who shall enter or remain upon all or any portion of any area under the ownership or control of the commission, where proper signs or public notices prohibiting the same have been erected or displayed, shall be guilty of a misdemeanor, and shall, upon conviction thereof, be punished as provided in subdivision (9) of this section;

(7) Any person who shall abandon any motor vehicle, trailer, or any other conveyance, in any area under the ownership or control of the commission, shall be guilty of a misdemeanor and shall, upon conviction thereof, be punished as provided in subdivision (9) of this section;

(8) The commission is authorized to enact regulations permitting the sale, trade, or vending of any goods, products or commodities of any type in any area under its ownership or control; provided, that any person who shall sell, trade, or vend any goods, products or commodities of any type, in any area under the ownership or control of the commission, without having received the prior permission of the commission for such activity, shall be guilty of a

misdemeanor and shall, upon conviction thereof, be punished as provided in subdivision (9) of this section;

(9) Where the permission of the commission is required as a prerequisite to any activity set out in this act, such permission shall be established by resolution of the commission; provided, that such resolution may set out the circumstances under which the supervisor or managing official in charge of any area under the ownership or control of the commission may give such permission in emergency situations, and such resolutions may further provide for the revocation of such permission by the secretary of the commission, or by the supervisor or managing official of any area under the ownership and control of the commission. Any law enforcement official, including conservation officers and deputy conservation officers, is authorized to enforce the provisions of this act. Where a violation has occurred in or on any area under the ownership or control the commission any conservation officer or deputy conservation officer may arrest and detain any person committing such violation, or committing any misdemeanor or felony as provided by the laws of this state until a legal warrant can be obtained. Any person guilty of a misdemeanor as set forth in this act shall upon conviction thereof, be punished by a fine of not less than ten dollars, nor more than one hundred dollars, or by imprisonment in the county jail not to exceed thirty days, or both such fine and imprisonment.

The commission is authorized to issue, regardless of any other requirements or qualifications of law, without cost, special fishing permits to wards of the state, on a group basis, for therapeutic purposes, when application has been made to the commission by the head of the appropriate state institution involved. The commission is further authorized to enter into agreements with other states bordering on the Missouri River providing for reciprocal recognition of licenses, permits, and laws of the agreeing states. The commission is also authorized and shall have the duty, when funds have been made available, to advertise and promote the scenic, historic and outdoor recreational values and attractions of the state, and to do such things pertaining thereto as will attract nonresident trade to Nebraska.

SECTION 81-815.22

As used in sections 81-815.21 to 81-815.35, unless the context otherwise requires:

(1) commission shall mean the Game and Parks Commission;

(2) state parks shall mean parks of substantial area and with the primary value of significant statewide scenic, scientific or historic interest, having a complete development potential and, where possible, a representative portion which can be retained in a natural or relatively undisturbed state;

(3) state recreation areas shall mean areas with a primary value for day use, but with secondary overnight-use facilities or potential, which have reasonable expansion capability, and are located in accordance with sound park management principles;

(4) state historical parks shall mean only sites which, in the opinion of competent, recognized authorities, are of notable historical significance to the State of Nebraska, of a size adequate to develop the full interpretative potential of the site, and which may be equipped with limited day-use facilities when such facilities do not detract from nor interfere with the primary purposes and values thereof;

(5) state wayside areas shall be areas appropriate in size and located at strategic intervals adjacent to main traveled highways to provide safe rest and picnic stops for travelers, which sites shall be selected for scenic or historical interest when possible, equipped with safe approach and departure lanes, and be developed in a manner and with such facilities as are appropriate to their purposes; and

(6) state special use areas shall be those areas which are primarily of public hunting, fishing, or other wildlife values, and which cannot logically be classified in one of the categories listed in subdivisions (2), (3), (4), or (5) of this section, when so designated by the commission to be maintained from fish and game funds.

SECTION 81-815.23

The state park system hereby established shall consist of existing and acquired areas determined and designated by the commission as properly falling in one of the following classes: state parks, state recreation areas, state historical parks, and state wayside areas. State special use areas shall also be administered by the commission, but not as a part of the state park system nor with park funds.

The commission shall be charged with the responsibility for the establishment and conduct of the state park system and all things pertaining thereto. The state park system shall be administered through a Division of State Parks hereby established within the commission to be headed by a division chief who has been selected for this purpose and who has an appropriate background in this field. The division chief shall be appointed by the commission and shall receive such salary as the commission shall determine.

* * * *

SECTION 37-427

The State of Nebraska hereby assents to the provisions of an Act of Congress entitled an act to establish a Land and Water Conservation Fund to assist the states and federal agencies in meeting present and future outdoor recreation demands and needs of the American people and for other purposes, approved September 3, 1964 (Public Law 88-578, 88th Congress), and the Game and Parks Commission shall perform all such acts as may be necessary on behalf of the State of Nebraska to conduct, coordinate, and carry out the purposes and objectives of such Act of Congress for and within the State of Nebraska, and may transfer funds made available to the state to political subdivisions thereof

if consistent with an approved project and in compliance with such Act of Congress and with rules and regulations promulgated by the secretary of the interior for the administration of such act. For these purposes the Game and Parks Commission may inspect the project and examine the records of political subdivisions receiving grants-in-aid and establish such rules and regulations relating thereto as may be necessary.

SECTION 37-428

There is created a fund to be known as the Land and Water Conservation Fund. All money made available to the Land and Water Conservation Fund for matching purposes by state appropriations shall be remitted to the State Treasurer and by him placed in such fund. Land and Water Conservation Fund money shall be used by the Game and Parks Commission under the provisions of Public Law 88-578, 88th Congress, for financing administrative and project costs thereunder. The Game and Parks Commission may make grants-in-aid to political subdivisions of the state from money made available for matching purposes by state appropriations in amounts not exceeding twenty-five per cent of the cost of approved projects submitted by such political subdivisions.

SECTION 37-429

Federal funds advanced to the State of Nebraska through grants-in-aid under the provisions of Public Law 88-578, 88th Congress, for approved projects shall be deposited in the Land and Water Conservation Fund and used for financing such approved projects. Federal funds paid to the state in reimbursement of expenditures previously made by the state or its political subdivisions shall be returned to the fund from which such expenditures were made. Sixty per cent of the federal funds annually allocated to the State of Nebraska are hereby reallocated to state projects and forty per cent to the projects of political subdivisions. Funds not obligated for approved projects during the fiscal year in which they are allocated shall thereafter be available at large. If political subdivisions have submitted approved projects in excess of available funds during any fiscal year, the Game and Parks Commission shall consider all such approved projects and use the factors of equity, population, and need in determining allocations thereto of available funds. If any project allocation exceeds actual project cost the overage shall be returned to the Land and Water Conservation Fund for reallocation under the provisions of this section.

Since an emergency exists, this act shall be in full force and take effect, from and after its passage and approval, according to law.

OPINIONS OF THE ATTORNEY GENERAL

The following are opinions of the Attorney General of the State of Nebraska pertaining to the authority of the Nebraska Game and Parks Commission to participate in and administer the Land and Water Conservation Fund in Nebraska.

CLARENCE A. H. MEYER
ATTORNEY GENERAL

GERALD S. VITAMVAS
DEPUTY

STATE OF NEBRASKA

Department of Justice

473-1511
LINCOLN
68509

ASSISTANT ATTORNEYS GENERAL
JAMES J. DUGGAN
RALPH H. GILLAN
HOMER G. HAMILTON
MEL KAMMERLOHR
HAROLD MOSHER
BERNARD L. PACKETT
CALVIN E. ROBINSON
C. C. SHELDON
HAROLD S. SALTER
DEPT. OF ROADS
ROBERT R. CAMP
NEBRASKA LIQUOR CONTROL COMMISSION
E. D. WARNSHOLZ
DEPT. OF PUBLIC WELFARE

July 14, 1965

Nebraska Game, Forestation and Parks
Commission
State House
Lincoln, Nebraska 68509

Attention: M. O. Steen, Director

Dear Sir:

You have inquired as to the authority of the Nebraska Game, Forestation and Parks Commission to participate in the benefits contained in Public Law 88-578, 88th Congress. This act provides for grants on a local participation basis to state and local political subdivisions for the construction and operation of recreational facilities. Attached to your letter are twelve separate requirements for authority on the part of the commission in order to participate in this program. These will be listed separately later herein and the proper legislative authority mentioned as to each requirement.

L. B. 485 adopted by this session of the Legislature with the emergency clause deals with this precise federal act. It could be said that part of this act in itself contains sufficient authorization required by the Bureau of Outdoor Recreation of the United States Department of the Interior. Section (1) provides, in part:

> "The State of Nebraska hereby assents to the provisions of an Act of Congress entitled An Act to establish a land and water conservation fund to assist the states and federal agencies in meeting present and future outdoor recreation demands and needs of the American people, and for other purposes, approved September 3, 1964, (Public Law 88-578, 88th Congress), and the Game, Forestation and Parks Commission shall perform all such acts as may be necessary on behalf of the State of Nebraska to conduct, coordinate, and carry out the purposes and objectives of such Act of Congress for and within the State of Nebraska, and may transfer funds made available to the state to political subdivisions thereof if consistent with an approved project and in compliance with such Act of Congress and with rules and regulations promulgated by the Secretary of the Interior for the administration of such act.* * *."

However, as previously stated, we will enumerate the requirements and the specific authority involved as to each.

1. To prepare and maintain a Comprehensive State Outdoor Recreation Plan.

In addition to the general authority granted in L. B. 485 previously quoted, we refer you to the first part of Section 81-805, R. S. Supp., 1963, which provides as follows:

> "Except as herein otherwise provided, the Game, Forestation and Parks Commission shall have sole charge of forestation, state parks, game and fish, recreation grounds, and all things pertaining thereto.* * *."

2. To develop, operate, and maintain outdoor recreation areas and facilities.

We believe the authority granted in that part of Section 81-805, R. S. Supp., 1963, previously quoted, supplies the authority for this second requirement.

3. To acquire land, waters, and interests in land and waters for recreation purposes.

We again refer you to Section 81-805. Part of that section provides:

> "* * *. With the consent of the Governor, it may by purchase, when funds on hand or appropriated therefor are sufficient, or by gift, devise, or otherwise, acquire title in the name of the State of Nebraska to sites therein situated outside organized municipalities, for state forests, additional state parks, hatcheries, nurseries, recreation grounds, game farms, game refuges, and public shooting grounds, and may enter into appropriate contracts with reference thereto, all within the limits of amounts that may be appropriated, contributed, or available therefor. * * *."

4. To enter into contracts and agreements with the United States and an appropriate agency thereof.

We believe that part of section (1) of L. B. 485 previously quoted is sufficient authorization for this requirement.

5. To keep financial and other records relative to such contracts and agreements.

For this requirement we refer you to the last sentence of section (1) of L. B. 485 which provides:

> "* * *. For these purposes the Game, Forestation and Parks Commission may inspect the projects and examine the records of political subdivisions receiving grants-in-aid and establish such rules and regulations relating thereto as may be necessary."

Section (2) of this act provides, in part:

> "* * *. All money made available to the Land and Water Conservation Fund for matching purposes under the provisions of Legislative Bill 26, Seventy-fifth Session, Nebraska State Legislature, 1965, or any other source shall be remitted to the State Treasurer and by him placed in such fund. * * *."

The first part of section (3) is as follows:

> "Federal funds advanced to the State of Nebraska through grants-in-aid under the provisions of Public Law 88-578, 88th Congress, for approved projects shall be deposited in the Land and Water Conservation Fund and used for financing such approved projects. * * *."

6. To furnish appropriate officials of the United States such reports and information as are required for the conduct of the grant program.

   We again refer you to the first part of section (1) of L. B. 485 as authority for this requirement.

7. To coordinate its recreation activities with those of other State agencies and governmental units.

   We refer again to that part of section (1) of L. B. 485 previously referred to and also to that part of section (2) as follows:

> "* * *. The Game, Forestation and Parks Commission may make grants-in-aid to political subdivisions of the state from money made available under the provisions of Legislative Bill 26, Seventy-fifth Session, Nebraska State Legislature, 1965, in amounts not exceeding twenty-five per cent of the cost of approved projects submitted by such political subdivisions."

8. To receive Federal moneys.

   We believe requirement is met by the general authority conferred by the first part of section (1) of L. B. 485.

9. To disburse Federal moneys.

   For this authorization, we refer you to that part of section (2) of L. B. 485 which provides:

> "* * *. All money made available to the Land and Water Conservation Fund for matching purposes under the provisions of Legislative Bill 26, Seventy-fifth Session, Nebraska State Legislature, 1965, or any other source shall be remitted to the State Treasurer and by him placed in such fund. Such matching money shall be used by the Game, Forestation and Parks Commission under

the provisions of Public Law 88-578, 88th Congress, for financing state project costs thereunder.* * *."

10. To assure the United States that the State has the ability and intention to finance its share of any project proposed.

L. B. 881 was passed at this session of the Legislature with the emergency clause. It provides for a two cent increase on cigarette taxes and part of that act provides:

> "* * *. The proceeds of such tax shall be placed in the General Fund to be appropriated by the Legislature, except that, until the completion of the biennium ending June 30, 1967, an amount equal to seven-twentieths of two cents per package or fractional part thereof shall be placed in the State Educational Television Fund, an amount equal to six-twentieths of two cents per package or fractional part thereof shall be placed in the State Recreation Road Fund, and an amount equal to seven-twentieths of two cents per package or fractional part thereof shall be placed in the Land and Water Conservation Fund, * * *."

There are some deductions set out later in the bill from the distribution mentioned but these are only for administration purposes. The "Land and Water Conservation Fund" mentioned in the act is the special fund set up in L. B. 485.

11. To assure that areas acquired or developed with money granted from the Fund will be operated and maintained for public recreation purposes.

We again refer to the first sentence of Section 81-805 previously quoted. This gives the commission control and authority to operate state parks, recreation grounds, etc., with facilities, including real estate obtained by the commission. No authority is given to the commission to use these facilities and real estate in any other manner enumerated. In the absence of such authority, it would be illegal for the commission to carry on other activities not related to public recreation in these areas.

12. To enter into agreements on behalf of political subdivisions and public agencies, and to require from such entities the necessary financial other assurances.

Part of section (2) of L. B. 485 provides:

> "* * *. The Game, Forestation and Parks Commission may make grants-in-aid to political subdivisions of the state from money made available under the provisions of Legislative Bill 26, Seventy-fifth Session, Nebraska State Legislature, 1965, in amounts not exceeding twenty-five per cent of the cost of approved projects submitted by such political subdivisions."

In 1963 our Legislature passed what is known as "The Interlocal Cooperation Act" and is found in Sections 23-2201 to 23-2207, R.S. Supp., 1963. Section 23-2205 provides as follows:

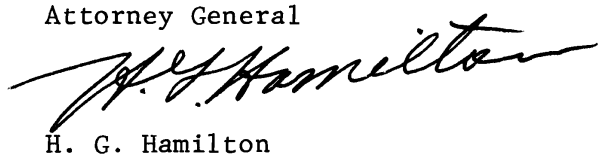
> "In the event that an agreement made pursuant to sections 23-2201 to 23-2207 shall deal in whole or in part with the provision of services or facilities with regard to which an offiter or agency of the state government has constitutional or statutory powers of control, the agreement shall, as a condition precedent to its entry into force, be submitted to the state officer or agency having such power of control and shall be approved or disapproved by him or it as to all matters within his or its jurisdiction; Provided, no agreement under sections 23-2201 to 23-2207 shall provide for generation, transmission or distribution of electricity."

In addition, we call your attention to the last sentence of section 1 of L. B. 485 which provides:

> "* * *. For these purposes the Game, Forestation and Parks Commission may inspect the projects and examine the records of political subdivisions receiving grants-in-aid and establish such rules and regulations relating thereto as may be necessary."

Respectfully submitted,

CLARENCE A. H. MEYER
Attorney General



H. G. Hamilton
Assistant Attorney General

HGH:bd

Chapter III

Planning Process

PLANNING PROCESS

PLANNING PROCEDURES

Methodology used in the planning process has been described in detail in appropriate chapters of the plan. The following is a brief resume of the basic approach used which ultimately led to the determination of estimated needs for outdoor recreation lands and facilities.

The analysis of outdoor recreation needs was based on fourteen identified multi-county socio-economic areas.

Supply data used in Nebraska's Comprehensive Outdoor Recreation Plan were obtained from federal, state and local agencies. Where possible, reference has been made to the supply of recreational lands and facilities furnished by private groups and individuals. However, this information is much less detailed due to the difficulty encountered in compiling a complete inventory of private recreation lands and facilities.

Agencies administering federal lands in Nebraska were contacted to obtain detailed information on recreation land acreage (by land class) and the types and number of recreation facilities furnished. Federal agencies which provided information on outdoor recreation resources included the U.S. Forest Service, U.S. Army Corps of Engineers, Bureau of Sport Fisheries and Wildlife, National Park Service and the Bureau of Reclamation.

Similar detailed inventories were made of recreational lands and facilities operated by the State of Nebraska. These lands are administered by the Nebraska Game and Parks Commission and include: (1) state parks, (2) state recreation areas, (3) state wayside areas, (4) state historical parks and (5) special use areas.

The recreation lands and facilities of each municipality with greater than 200 population were inventoried by personnel of the Nebraska Game and Parks Commission. In communities of less than 1,000 population, no special effort was made to contact local officials. Commission personnel located the village parks and playgrounds and estimated the number of acres included in outdoor recreation areas and recorded facilities available. Local officials were contacted in each municipality of more than 1,000 and the inventory was normally completed jointly by these officials and Commission personnel.

Demand was treated in general terms on the basis of population trends and changes in social and economic conditions which will have an impact on demand for outdoor recreation in the State. Quantitative demand data were compiled for 14 socio-economic areas by applying activity participation rates obtained from the 1960 ORRRC Study and a study completed by the Bureau of Outdoor Recreation in 1965 to projected population data derived in accordance with the method outlined in Appendix A-1. Although the activity participation rates

used were compiled for the entire North Central Census Region, these are the most exhaustive studies that have been made and are considered sufficiently reliable for demand projections in Nebraska.

Needs were determined on the basis of calculated demand in relation to the capacity of existing supply for those recreation activities which could readily be adapted to a design load concept. Other activities such as driving for pleasure, walking, attending outdoor events, etc., were treated in more general terms since the demand could not be translated readily into quantitative needs for facilities and lands. Standards were used to estimate needs for acquisition and development of public recreation lands and facilities.

PARTICIPATION IN THE PLANNING PROCESS

The Nebraska Game and Parks Commission is responsible for virtually all phases of outdoor recreation at the state level. Therefore, a wide variety of interests, all vested in the planning agency, were represented in the planning processes. Specifically, these interests included state parks and recreation areas, boating, fisheries, game, land management, historical parks, wayside parks and tourism.

Legislators were informed of the Land and Water Conservation Fund Act in 1965 and advised of its potential to the State and its political subdivisions in the field of outdoor recreation. The legislature then enacted legislation which authorized the Nebraska Game and Parks Commission to administer the Land and Water Conservation Fund program in Nebraska and allocated 60 per cent of federal funds received to state projects and 40 per cent to projects of political subdivisions. The legislature also provided additional revenue for outdoor recreation by general appropriation, and made provisions for state grants-in-aid to political subdivisions from the general fund, over and above federal grants-in-aid, for approved Land and Water Conservation Fund projects.

Officials in communities over 2,500 in population were contacted by mail and asked to provide an outline of their five-year capital improvement programs for outdoor recreation. Data from municipalities which responded to this request were included under the program for implementation. Personal contact was made with officials of all municipalities over 1,000 in population to obtain a complete inventory of recreational lands and facilities. In addition to these contacts, numerous municipal and county officials have been contacted in the normal course of administration of the Land and Water Conservation Fund program.

Several state agencies provided assistance and needed information for development of certain elements of the plan. Particularly noteworthy was information on traffic flow from the State Department of Roads; data on small watershed activity from the Soil and Water Conservation Commission; and data on licensed swimming pools from the Department of Environmental Health.

The University of Nebraska Bureau of Business Research supplied information and technical assistance in the development of population projections. Other agencies which contributed information and assistance were: The

Nebraska Aeronautic Commission, Nebraska's Office for the Aging, the Nebraska Department of Economic Development, State Education Department, Department of Public Institutions, Labor Department, Nebraska Legislative Council, State Services for the Visually Impaired, and the Nebraska Water Resources Department.

State officials with responsibilities for welfare of the handicapped, including the state's mental retardation planning coordinator, were contacted and consulted to insure adequate consideration of special outdoor recreation needs of the handicapped.

The following organizations have reviewed and offered comments or had the opportunity to offer comments on the preliminary drafts of the Comprehensive State Outdoor Recreation Plan:

U. S. Forest Service
Bureau of Reclamation
U. S. Army Corps of Engineers
National Park Service
Soil Conservation Service
Missouri River Basin Planning Group
University of Nebraska Extension Service, Community Development Department
Nebraska Department of Economic Development
Nebraska Soil and Water Conservation Commission
City of Lincoln
League of Municipalities
Omaha-Council Bluffs Metropolitan Area Planning Agency

Information was also supplied by certain federal agencies. The Soil Conservation Service provided detailed data on farm ponds and other structures which may contribute to water-oriented outdoor recreation activities. Their personnel also furnished considerable insight to the use of private lands for outdoor recreation. Data on vacation farms and other outdoor recreation enterprises within the framework of their existing program were made available by the Farmers Home Administration. Published data from other federal agencies, particularly the National Park Service, the U.S. Army Corps of Engineers, U.S. Fish and Wildlife Service, and the Bureau of Reclamation were also utilized. During the planning process, close liaison was maintained with the Bureau of Outdoor Recreation.

Chapter IV

Coordination With

Related Plans And Programs

COORDINATION WITH RELATED PLANS AND PROGRAMS

Several agencies are currently involved in comprehensive planning or resource development programs which are related to outdoor recreation. When possible, other plans and programs and their impact on outdoor recreation have been considered in the Statewide Comprehensive Outdoor Recreation Plan. Future planning efforts will continue to correlate the various programs to realize the maximum benefits.

The 10-Year Park Plan for Nebraska, which was submitted to the Legislature in 1963, outlines in detail a capital improvement program for state parks, state recreation areas, state historical parks and state wayside areas from 1963 to 1973. Basically, this plan provides the guide for acquisition and development of recreation lands in the above categories during the period specified. Needs, priorities for state projects, and action programs identified in the present plan have been coordinated as closely as possible with capital improvement programs for the 10-Year Park Plan.

The State Department of Roads, under existing legislative authority, is responsible for development of access roads to recreation areas. Recreation access roads are an important element of the total outdoor recreation program. Close liaison and coordination between the State Department of Roads and the Nebraska Game and Parks Commission must be maintained to insure the greatest benefits from the program.

Programs of federal agencies have a substantial impact on outdoor recreation within the State. Coordination with these programs has been noted throughout the plan. The following are particularly noteworthy for reiteration.

Lands managed by the Forest Service, Bureau of Sport Fisheries and Wildlife, Corps of Engineers, and National Park Service were identified with an assessment of their contribution to outdoor recreation in Nebraska. These lands and waters were treated as a part of the total complex of outdoor recreation resources within the State.

The inventory of existing and potential outdoor recreation resources has been completed utilizing forms supplied by the Bureau of Outdoor Recreation. These data will also be used in preparation of the Nationwide Outdoor Recreation Plan. When possible, the Nebraska plan will be related to the nationwide plan using comparable data on supply and demand.

The State is participating in development of the Comprehensive Missouri River Basin Plan for the use and development of water and related land resources. Inventory data used in development of the Comprehensive Outdoor Recreation Plan were made available to the recreation and fish and wildlife task forces of the basin planning effort. Key personnel of the Nebraska Game and Parks Commission were represented on these task forces. Thus, concepts and techniques of the two planning efforts were closely aligned.

The small watersheds program under Public Law 566 offers excellent opportunity in Nebraska for development of water-oriented recreation on a regional or local level. Existing and planned small watershed developments have been identified in the plan.

The Nebraska Game and Parks Commission, as the outdoor recreation agency for the State, is participating with the State Soil and Water Conservation Commission in development of comprehensive plans for certain watersheds. It is expected that activity in this area will increase as the Soil and Water Conservation Commission increases the scope of its planning efforts to complete the Comprehensive State Water Plan.

Water resource developments by the Corps of Engineers and Bureau of Reclamation have made significant contributions to outdoor recreation. Existing and potential reservoirs and their contribution to water-oriented activities have been identified. Close coordination between the Nebraska Game and Parks Commission and these agencies is necessary to develop the full outdoor recreation potential of these sites.

An agreement for recreation development has been negotiated between the Commission and the Bureau of Reclamation. Under the agreement, the Commission leases lands and waters developed by the Bureau of Reclamation for a period of 25 years with an option to renew the lease for a single additional period of 25 years provided the agencies agree upon a Reservoir Development Plan. Under terms of the agreement, the Commission is solely responsible for administration, development and maintenance of outdoor recreation facilities. Agreements with the Corps of Engineers have been negotiated on the basis of individual projects. Particularly noteworthy is the close coordination in development of the recreation potential of the Salt-Wahoo sites in Lancaster County.

Data on private recreation resources and programs have been obtained from the Farm Home Administration and from the Soil Conservation Service. Programs of these two agencies will continue to be an important element in outdoor recreation. Close liaison and coordination of programs will be maintained. Nebraska Game and Parks Commission personnel are participating in county by county appraisals of outdoor recreation potential surveys in cooperation with the Soil Conservation Service.

Federal aid programs for fish and wildlife restoration projects (Dingell-Johnson and Pittman-Robertson) have provided financial assistance to the State for acquisition and development of many areas devoted to game or fish production and public hunting or fishing areas. Areas acquired under these programs have also been available for activities other than hunting and fishing so long as other uses were compatible with the primary use. These programs which offer 75 per cent grants-in-aid to the State for approvable projects, will continue to provide much of the needed assistance for acquisition and development of public hunting and fishing areas. However, when annual apportionments of these funds have been exhausted, Land and Water Conservation Funds may be utilized, when applicable, to accelerate acquisition and development of lands and waters for these and related activities.

The value of maintaining the Niobrara River in its present free-flowing state from the mouth of Antelope Creek to the headwaters of the proposed Norden Reservoir was pointed out. The possibility of including this section within a wild rivers system was noted as a method of maintaining its free-flowing status and natural environment.

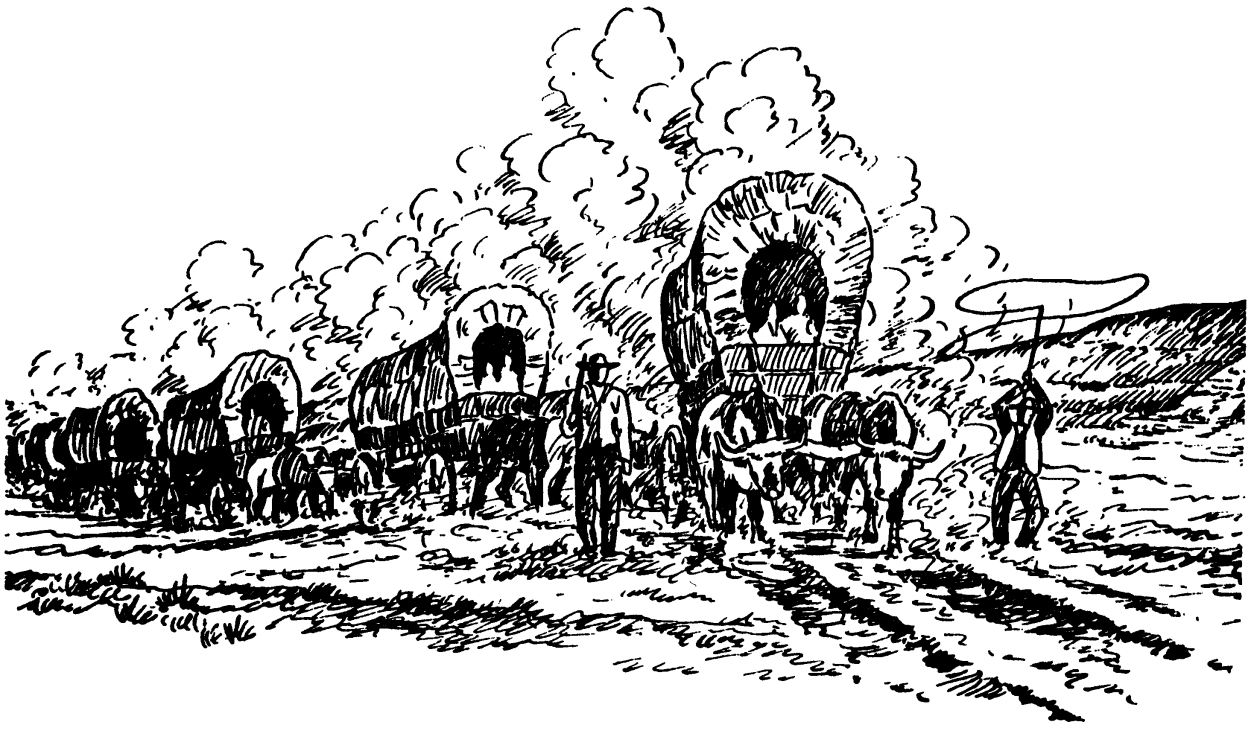
The value of Agate Springs Fossil site as a national recreation and scientific resource was indicated. Development of this site by the National Park Service will make available to the public a rare paleontological resource capable of attracting visitors from all parts of the world. The addition of this site as a national monument will enhance the total outdoor recreation complex of western Nebraska.

Where possible, comprehensive city plans developed with an urban planning grant from the Housing and Home Finance agency under the provisions of Section 701 of the Housing Act of 1954, or by the city planning departments, have been taken into consideration.

Coordination is maintained with the Nebraska State Historical Society in the development of the State Historical Plan.

Chapter V

Description Of State



DESCRIPTION OF STATE

GENERAL DESCRIPTION

Contrary to the long cherished belief of the harried tourist dashing across the State along the same water level route followed by the great wagon trains of more than a century ago, Nebraska is a land of infinite variety and interest.

Varying in altitude from a little over 800 feet in the east to well over a mile in the west, the State presents startling differences and an endless repertoire of landscapes including metropolitan areas, intensified farming, vast ranch and wheat lands on the prairies, broadleaf woodlands, mid-altitude coniferous, semi-desert, the unique Sandhills, and the arid Badlands, Figure 5.1.

Straddling the 100th Meridian between the 40th and 43rd parallels, Nebraska is situated only a few miles north of the geographic center of the 48 continuous states and typifies the climatic conditions identified with the center of large land masses at this latitude, namely vigorous summers and winters, spiked with short periods of intense heat and cold, but separated by the long and stimulating spring and fall seasons found only in the Great Plains.

With over 77,000 square miles of area, Nebraska ranks 15th in size of the contiguous states, and exceeds the combined area of eight smaller eastern states. One county alone is larger than Delaware and Rhode Island, combined. As a matter of fact, some Nebraska residents live nearer Illinois Beach State Park on the shores of Lake Michigan than to some Nebraska park areas.

Far from being the dryland often pictured, Nebraska has some forty thousand bodies of water, the combined surface acreage of which would exceed that of Lake Champlain. More than one-half of the State receives annual precipitation in excess of 20 inches, and as much as 54 inches has been recorded, Figure 5.2.

One of the state's great resources, its vast underground water supply, if pooled on the surface, would form a lake 34 feet in depth with twice the surface of Lake Superior.

Nebraska experiences the same phenomenon of having the majority of her population concentrated on a small per cent of her land surface that marks many of the western states. In Nebraska, as in the case of other Missouri Basin states, much of the outdoor recreational potential in Classes II, III and IV (Appendix, B.3.) is beyond day-use range of the principal population, Figure 5.3.

Nebraska's average population density is approximately 19 people per square mile. Four contiguous counties in eastern Nebraska have average densities exceeding 340 people per square mile which is roughly the average of New York. These counties, together with several other contiguous and adjacent, comprise

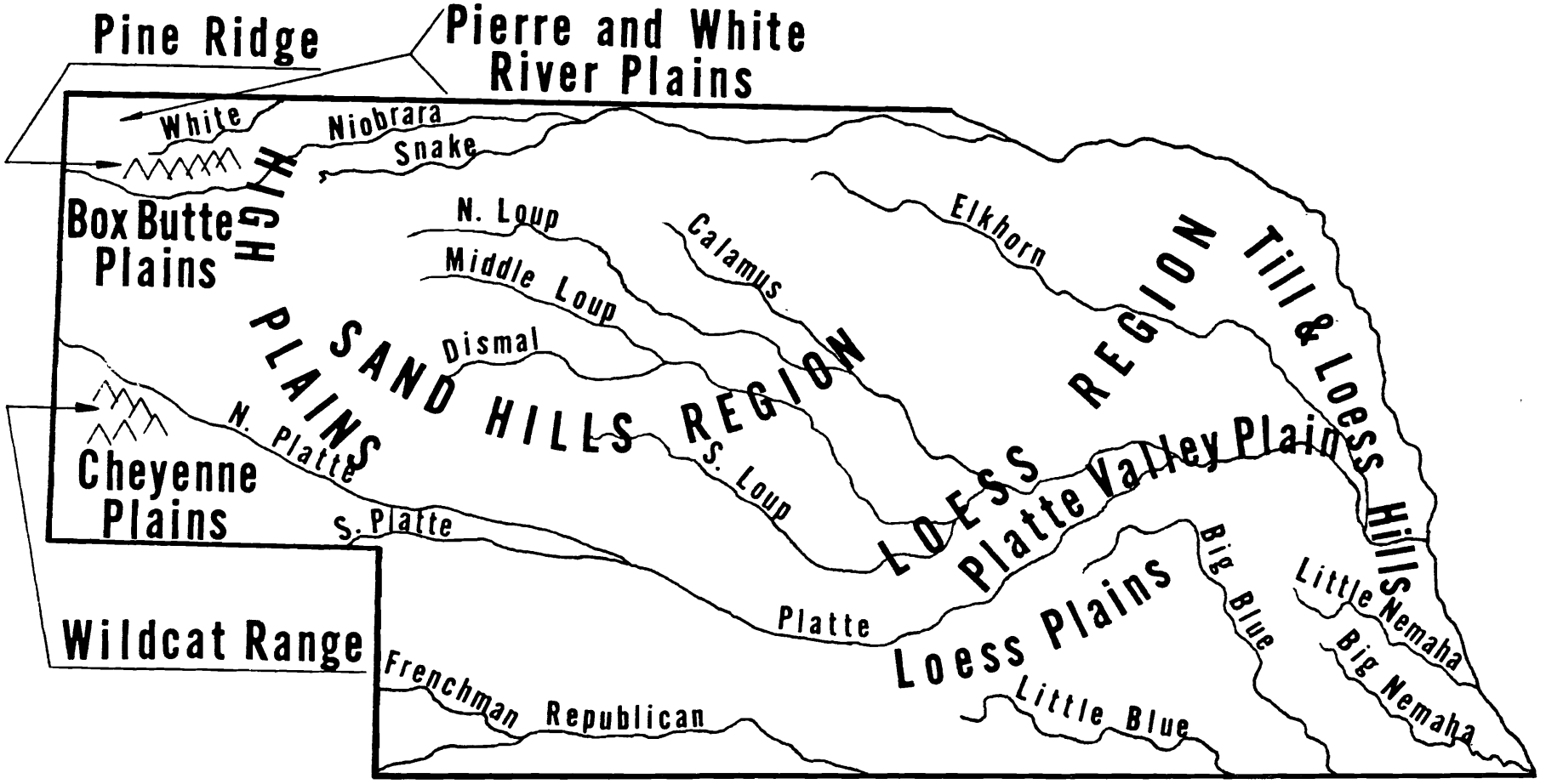
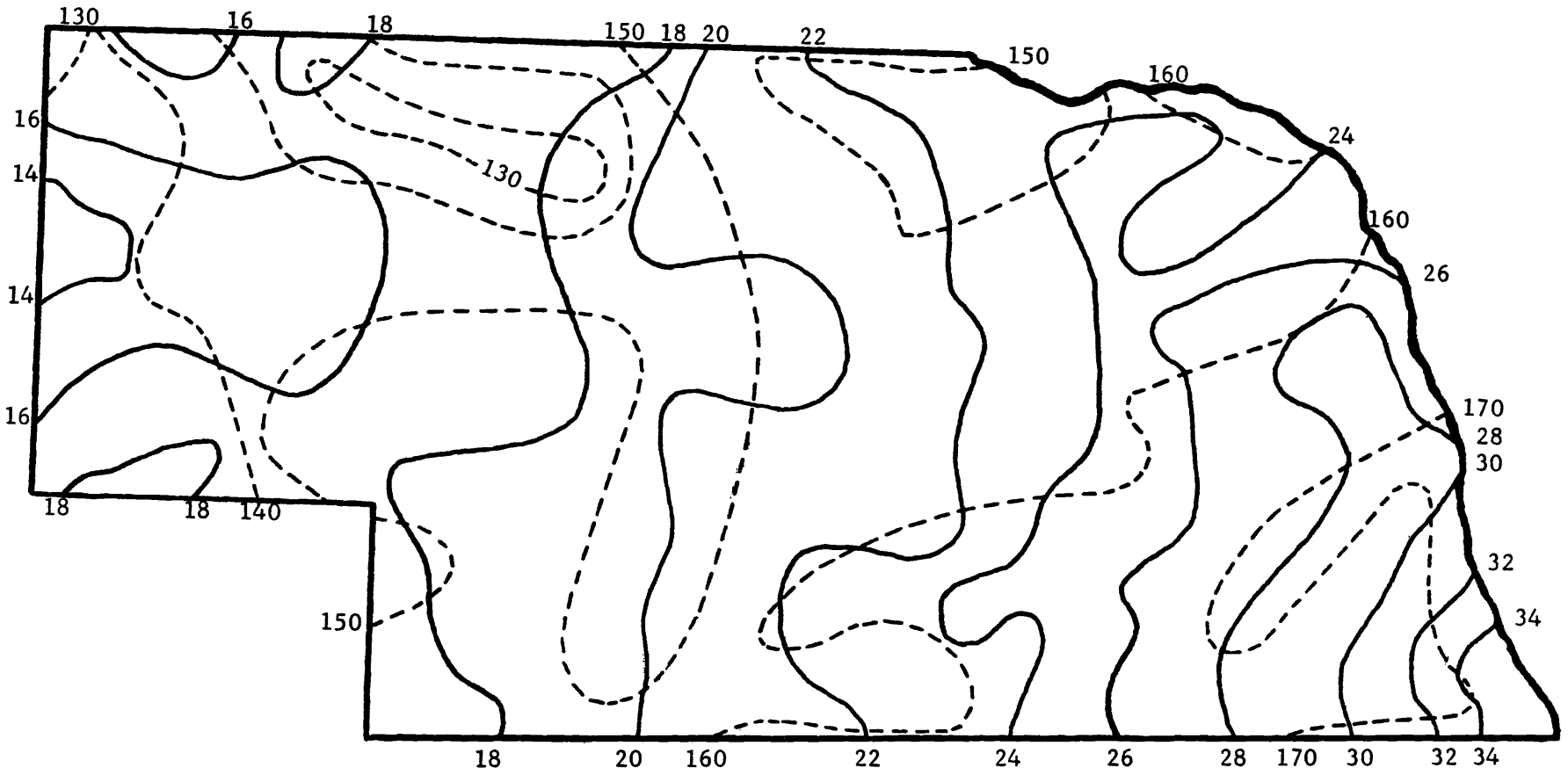


Figure 5.1. Physical features of Nebraska.



——————— Average annual precipitation in inches.

- - - - - - - Average number of days between killing frosts.

Figure 5.2. Average annual precipitation and days between killing frosts.

Figure 5.3. Population distribution in Nebraska.

Population of Area "B" exceeds that of Area "A"

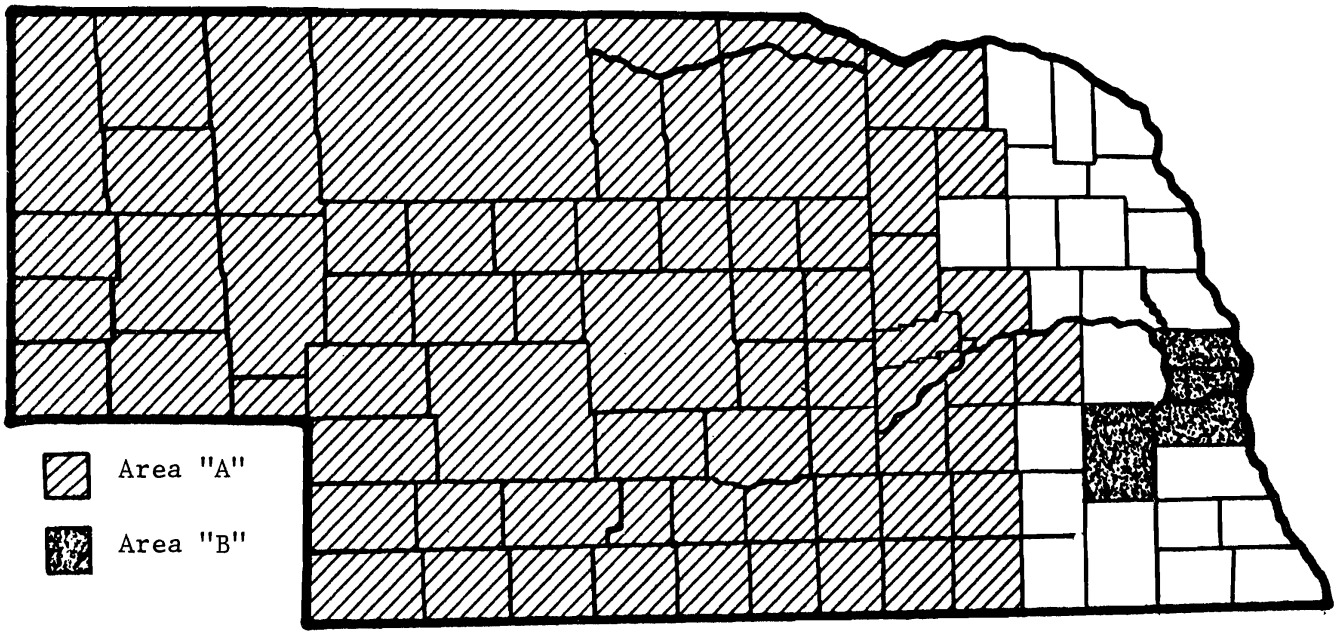
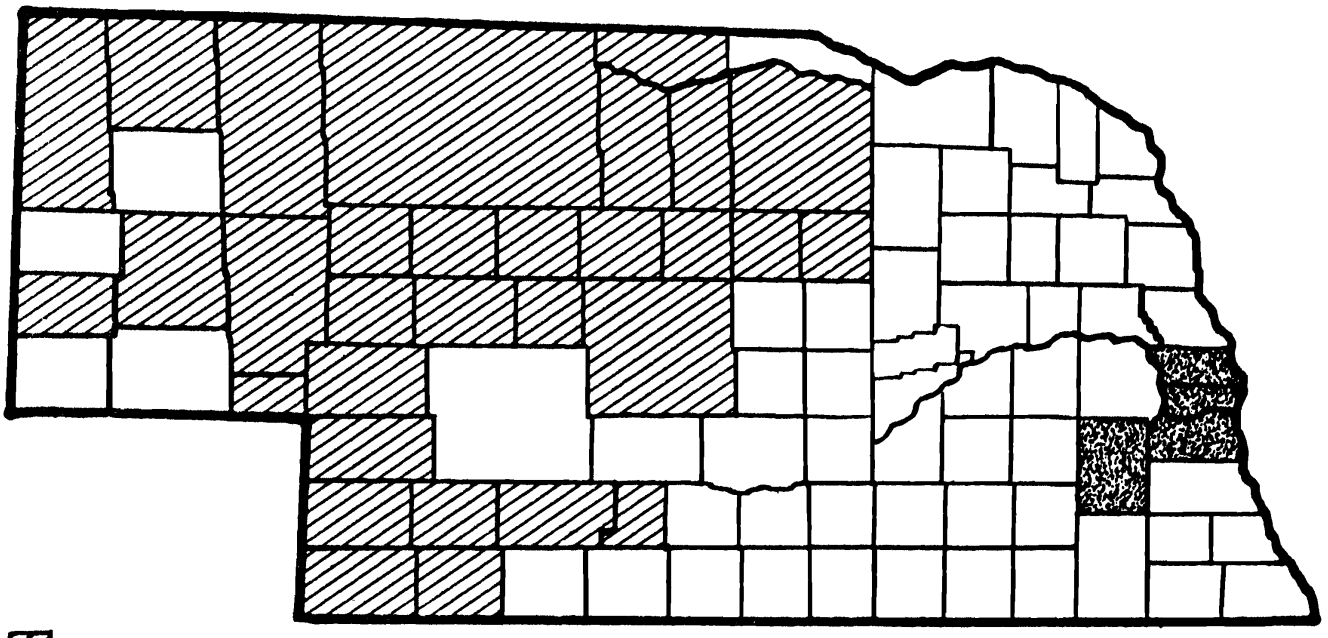


Figure 5.4. Population distribution in Nebraska.

Bloc B has more than four times greater population than Bloc A.



Bloc A: 31 contiguous counties with less than 8 persons per square mile.

Bloc B: 4 contiguous counties with more than 340 persons per squre mile.

about 12 per cent of Nebraska's area, but contribute over one-half of the total state population.

At the other end of the spectrum, Nebraska has 11 counties with less than two persons per square mile, and 20 more with less than eight persons. These 31 counties contain much of Nebraska's Class II, III, IV and VI potential and are generally distant from the high population density bloc, Figure 5.4.

The state's reputation for monotony has largely been gained from years of public travel on Nebraska's major east-west highways which, while straight, level and sound mechanically, fail to touch some of the more imaginative areas in the State, which do, indeed exist.

For example, neither routes U.S. 20 nor State 2, traversing the Sandhills, give the traveler any concept of the multitude of fresh water lakes and marshes which characterize the Sandhills. Only once on each route is the visitor given a glimpse of the Niobrara River Valley and in each instance he is afforded only a brief right angle approach and departure.

Nebraska's Pine Ridge, where the valley floors are a thousand feet above the peaks on the Ozark Plateau, has received similar neglect.

As the home and hunting ground of such widely famous Indians as the Sioux, Cheyenne and Pawnee, and as the route of the Lewis and Clark Expedition, the Oregon and Mormon Trails, the Pony Express and the first transcontinental railroad, Nebraska has a rich heritage of western history.

Some sites of historical interest, such as Forts Atkinson, Kearny, Hartsuff and Robinson; William F. Cody's Scouts Rest Ranch; and Arbor Lodge are already in state ownership. Many others are not, including areas of prehistoric and historic interest and value. Nebraska is only on the edge of understanding and developing her historic past and sharing this heritage with her visitors, Figure 5.5.

CHARACTERISTICS

Physical

As noted in the foregoing, Nebraska is one of the larger states, occupying some eight and one-half degrees of longitude and three degrees of latitude. It is approximately 450 miles across Nebraska at 41 degrees north latitude, and slightly more than 200 miles between the north and south boundaries.

The longitudinal distance has figured in a most interesting geological history. For a long period in prehistory, Nebraska was the bed of a sea. Many evidences of this period still exist in the form of limestone from minute shelled marine forms, sand shale and other sedimentary deposits.

After these depositions, the land north and east of Nebraska was elevated exposing what is now Iowa and eastern Nebraska. This resulted in a westward drainage toward what is best described as a vast inland sea.

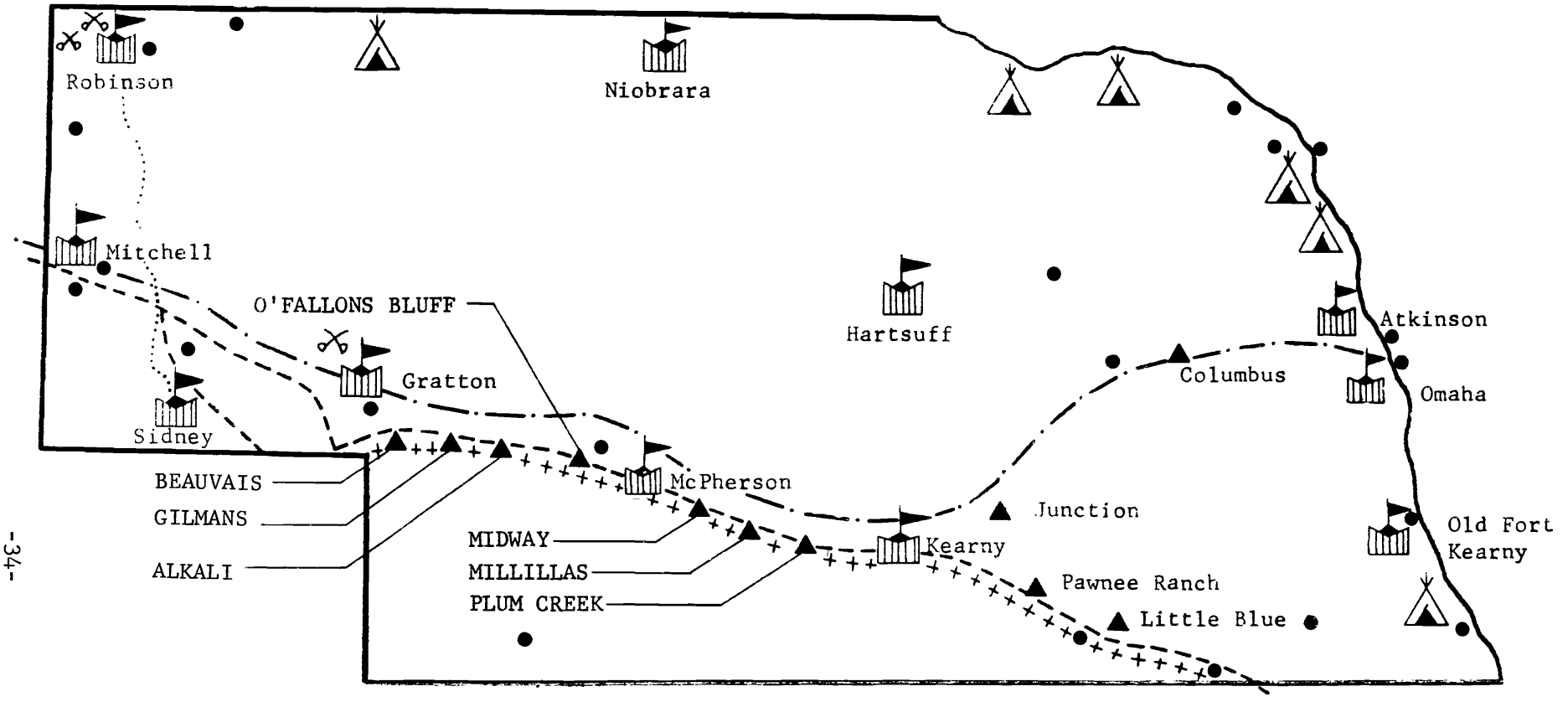


Figure 5.5. Historical sites.

KEY

·····	Sidney-Black Hills Trail
—·—·—·	Mormon Trail
– – – – – – –	Oregon Trail
+ + + + + +	Pony Express Trail
	Military Fort
	Indian Reservation
	U.S. - Indian Engagements
▲	Military Station
●	Other Sites

Sediments drifted into this body of water, were deposited, and now lie far beneath the surface. Depositions and build-ups continued for eons of time, eventually filling the sea. During this time, the Dakota sandstone formation gained wide distribution over the State; limestone, chalk rock, and shales developed, and large marine animals lived, the fossil remains of which are still found today.

When the sea had thus largely disappeared, an even greater elevation of lands to the west occurred, forming the Rocky Mountains and reversing the earlier east-to-west drainage pattern.

As these sharp up-thrusts eroded, the sands, gravels, and sediments flowed eastward. The last remnants of the inland sea, which were great lakes in northwest and western Nebraska, filled with sediments washing in from all directions, and formed the clay beds which, in eroded form, constitute the Badlands we see today.

Somewhat later in geologic time, a glacier advanced southward across the State, covering the eastern one-third from north to south, then melted back only to move down a second time.

These great ice sheets brought major changes; first, they tended to fill the deep gorges brought about by erosion of the earlier alluvial deposits and, secondly, they brought down vast quantities of soil-making materials from the north, called glacial drift or till.

After the last glacier retreated northward, it brought yet another change as water from the melting ice spread slowly south and eastward, filling the valleys and overflowing the drift with sediments. The comparatively smooth area thus formed, exists today broken only by the erosive processes of time, and these final depositions are the Loess Hills and Plains which provide Nebraska's richest farm lands, Figure 5.1.

Distribution

If Nebraska's outdoor recreational problems had to be summed up in one word, that word would have to be "distribution", as applied to population versus existing outdoor recreation. "Distribution" also has important physical and socio-economic connotations which enter into recreational problems.

The problem, then, is one of either bringing people to recreation, or recreation to people; or a combination of both.

Figures 5.3 and 5.4 illustrate the predicament. Area "B" in each figure is a four-county complex containing the two most highly populated counties (Douglas and Lancaster), and two small, densely populated counties (Sarpy and Cass).

In these four counties, 36 per cent of the state population resides on 2.5 per cent of the area and, indeed, as shown by Figure 5.3, the population of this small tract actually exceeds that of 67 other counties to the west.

With the exception of the Missouri River and its bluffs, and a few other sites, the vast majority of outdoor recreation potential is situated in Area "A", Figure 5.3, with much of it well to the west. Of this latter, some of the best is situated in the northwest corner of the State, as far from population centers as the state boundaries permit.

The situation with respect to existing areas is similar to that of the potential, with a vastly disproportionate percentage of parks and other recreational lands located in the areas of low populations.

This problem is particularly acute in the case of water surface available for multi-recreational use which, with the exception of the Missouri River, has been nearly non-existent in eastern Nebraska.

The popularity of multi-use water surface on today's outdoor recreational scene hardly needs description here, but the critical shortage in eastern Nebraska can, perhaps, be attested by the following illustrations:

Calendar 1964 was the first full year that two of the Salt-Creek project reservoirs were open to public use in the immediate vicinity of Lincoln. These impoundments, combined, contain 640 surface acres at conservation pool elevation.

By the end of August, 1964 these two areas with only nominal development of basic facilities had experienced over 300,000 visits -- more than double the entire population of Lancaster County in which the Capitol City is located; and by the end of the season, this had climbed to nearly 350,000.

In that same year, 538 new motorboat registrations were recorded in Lancaster County, a phenomenal gain of one new registration for each 288 county residents, or approximately one new motorboat registration for every 82 families.

These pressures are not new or unusual. A well developed water area, without boating, located within 30 minutes of residential Omaha, annually receives around a quarter of a million visits, and state park personnel have counted over 4,000 people in one afternoon entering the beach configuration of another state park area located about one hour from major population centers.

In the preparation of Nebraska's Ten Year Park Program in 1960, the matter of distribution was given considerable attention. Outdoor recreational capability in a circle of 100-mile radius drawn with Omaha and McCook as centers was studied. In the Omaha circle, there were 898,000 people, and 12 state areas with a total of 4,891 acres, 800 of which were water surface. In the McCook example, there were 173,000 people, and 23 areas with 31,000 acres, 8,000 of which were water surface.

At this same time, it was suggested that Nebraska should own or control recreation land in the proportion of some three acres to 100 residents, but in some areas, the ratio is as high as 1,200 people to three acres.

In the last few years, major steps have been taken toward solution of these problems, but much more must be done before equitable distribution can be obtained.

Climatic

Climate has been concisely defined as generalized weather, and weather as the climate at a given time and place.

Perhaps no other natural phenomena influences outdoor recreation as much as weather and, in the larger sense, climate.

With Nebraska's location in the center of a large land mass at the latitude it occupies, a variety of weather exists and, as a directly related consequence, almost the entire gamut of outdoor recreational activities are evidenced at one time of the year or another.

Away from the direct influences of large water masses, Nebraska's weather is principally cyclonic in the technical meaning of that word.

Simply stated, cyclones are large circling masses of air, perhaps several hundred miles in diameter, with low pressure centers, moving along a directional course. In Nebraska, this route is generally a southerly arc from northwest to northeast.

As this great circle passes a given point, winds change velocity and direction; moisture may be accumulated, elevated and precipitated, and calms may exist, all in a comparatively short time and depending on the quadrant of the cyclone in which the observer is located. These characteristics give rise to the jocular statement that "if you don't like the weather in Nebraska, wait a minute, and it will change."

The cyclonic masses move across the State on the average of one every three or four days at speeds of 20 to 30 miles per hour setting up the typical pattern of clear skies, increasing cloudiness, precipitation, followed again by clearing.

The presence or absence of precipitation in these cyclonic movements is largely predicated upon whether or not the cooler air flowing in from the northwest collides with warm moist air currents moving up from the Gulf of Mexico.

Variables, of course, do occur in the form of drouths, cloudbursts, hail, tornados, dust storms and other phenomena. Ordinarily, but with some notable exceptions, these occurrences are brief and confined to comparatively small areas of the State, but effects can be locally severe.

As noted earlier, Nebraska's weather provides for nearly all forms of outdoor recreation, although not necessarily in equal proportion.

The average number of consecutive days without frost varies from 170 in the southeast to 130 in the northwest. These periods provide adequately for summer activities and bracket the traditional school and family vacation period.

The long spring and fall periods make for ideal fishing and hunting weather and these seasons are also conducive to pleasure driving, picnicking, camping, hiking and similar family activities.

Unfortunately, the remaining 195 to 235 days during which freezing conditions may prevail do not provide as nicely for winter sports. Although ice becomes dependable for such things as winter fishing, skating and ice boating, snow is not dependable either in quantity, duration or quality, particularly as related to skiing.

For example, the average annual snowfall is approximately 30 inches. This, in a state where the average maximum daily temperature during the winter months exceeds 32 degrees Fahrenheit, can at best mean alternate "heavy" and crusted snow, and at worst no snow at all, perhaps for long periods.

Occasionally, good "powder" snows occur, and persist during cold periods. Again, unfortunately, when these conditions do develop, the snowfall is often accompanied by strong winds, particularly in the west where the best potential slopes are located, resulting in drifts and bare spots, neither benefiting the skier.

Although June, July and August are traditionally the vacation months, because this period coincides with the summer closure of public schools, those who do not have school age children and who travel the Great Plains would do well to consider the months immediately preceding and succeeding this period.

At Scottsbluff in the Panhandle, for example, the daily mean maximum temperature in May is 70.1 degrees and the minimum 42.3 degrees. During September, the mean daily high is 78.2 degrees and the low 46.1 degrees.

At Valentine, in northwest Nebraska, the May high mean is 70.1 degrees, the low 43.8 degrees. In September, Valentine records daily variations from a maximum of 76.3 degrees to a minimum of 46.8 degrees.

Valentine gets one-tenth of an inch of precipitation or more on 12 days in May, and three in September. Scottsbluff averages the same number of rainy days in May as Valentine, but has four more in September.

More average monthly rainfall occurs in June, July and August at both cities than during May and September, creating an even more convincing argument for spring and fall vacations in Nebraska.

History

The formative geology of Nebraska has been briefly touched upon elsewhere and will not be repeated except to re-emphasize that through the ages, the physical features, vegetation and climate have varied to such extremes as to bring about great and astounding changes.

Nebraska's internationally renowned fossil beds and the regular occurrence of the remains of great animals, together with much geologic evidence, give mute testimony of nature's struggle to determine whether Nebraska would be a sea, a desert, a jungle or a tundra.

To the best of today's knowledge, the first evidence of man in Nebraska dates back some 10,000 years.

The artifacts of Stone Age man and his successors lie in Nebraska soil and on the soil surface in such quantity as to stagger the imagination. Hundreds of these artifacts are recovered annually by amateur and professional alike.

The first appearance of modern white man in Nebraska is a matter of debate. Some contend that Coronado, during his northward cast in search of Quivera in 1541, crossed Nebraska's southern boundary. They support this view with Coronado's record that he located Quivera "on the 40th degree."

Detractors of this contention point to the two degree error prevailing in the computation of latitude in the 16th Century, and insist that Coronado's northward penetration did not go beyond 38 degrees. Latitude errors by the Lewis and Clark expedition of almost three centuries later, compounded with somewhat more sophisticated navigational instruments, would seem to lend credence to the "negative" position.

Be that as it may, Villasur very likely crossed the 40th parallel in 1720 and there can be no question but that the Mallet Brothers, and several other Frenchmen, traveled extensively in eastern Nebraska in 1739, possibly spending the winter of 1738-39 at the mouth of the Niobrara River.

The well-deserved fame of Lewis and Clark, for their expedition up the Missouri River and ultimate penetration to the West Coast, has unfortunately dimmed the feats of others who preceded them over a portion of their route.

As previously referenced, the Mallet Brothers probably went up the Missouri River as far as the Niobrara in 1738, long before either Lewis or Clark were born, and there can be no question that James McKay, a Scot trader, operated along the Missouri and tributaries in the latter part of the century.

McKay established a fortified post called Fort Charles on the Missouri near what is now Homer, Nebraska, in 1795 and the journals of the Lewis and Clark expedition for 13 August 1804 record passing the abandoned site.

Fort Lisa, another trading post was established above Omaha in 1812; Fort Atkinson, a military post in 1820, to be closely followed by other traders and the free trappers using the "highways" of the Missouri and the Platte.

Nebraska was secured from France in 1803, via the Louisiana Purchase, which prompted the Lewis and Clark Expedition. In 1820, following Missouri's entry into the Union, the unorganized territory situated north and west of that state was designated as "Indian Country" and not until 1854, was the Nebraska Territory set aside from Indian lands, with boundaries extending from the Rocky Mountains to Canada.

This area was whittled down by Congress by the creation of new territories until the State was admitted in 1867 in approximately its present configuration. For fifteen years, however, the land situated between the Keya Paha and Niobrara River and the present northern boundary remained a part of Dakota.

Settlement continued for virtually the remainder of the century. The first agrarian settler is believed to have been a squatter on Indian lands in southeast Nebraska in 1844. The first free homestead was filed in 1863 near Beatrice.

While the great fertile prairies beckoned the settler, the broad Platte Valley, running the entire length of the State, provided the most accessible route west for emigrants to the gold fields and to the cheap lands of the northwest.

The principal overland route was the Oregon Trail, which one author (Morton) describes as "the most notable route of its kind in the country . . . a social institution . . . its growth was simply the result of human movements along the lines of least resistance."

Although the Oregon Trail had become well established by 1843, its actual beginning, particularly on the east end, is less well defined. However, Bonneville, in 1832, is generally credited with taking the first wagon over the cutoff from Independence to Grand Island.

During its active life, thousands of people moved over the trail by every conveyance known. Starting in 1860, the Pony Express followed the route for 18 months, then gave way to the telegraph.

This also presaged the end of the Oregon Trail, with use tapering off in the 1860's. By 1865, the Union Pacific was hauling freight and passengers across Nebraska and, by 1869, this railroad had spanned the continent.

Although the Oregon Trail passed out of existence a hundred years ago, its evidences and influences still remain. Prominent among these are the site of Fort Kearny, and the deep ruts of the trail which exist at numerous sites yet today. Chimney Rock, Court House Rock and Scotts Bluff have been noted by millions. Soon travelers on the Interstate will cross Nebraska, tracing the steps of their pioneer forbears, and traveling as far in an hour as their predecessors did in a week.

As the frontier pushed westward, a number of military forts were established to cope with rising Indian unrest and resistance. Notable among these, in addition to Fort Kearny, were Forts McPherson, Sidney, Mitchell, Hartsuff and Robinson; this latter playing a dramatic role in the closing chapters of the Plains Indian Wars.

The opportunity for interpretation of Nebraska's history is almost limitless. The museums of the University of Nebraska, and State Historical Society at Lincoln and at Fort Robinson, fill some of the void, but a great deal remains to be done by on-site interpretation.

A start has been made in the state park program by interpretive development of a military fort at Fort Kearny; a military-settler fort at Fort Hartsuff; and Western Americana at Scouts Rest Ranch. Fort Atkinson, the manifestation of federal control over the Louisiana Purchase has been acquired and will be developed, as will the long and varied history of Ash Hollow. Research

is being conducted on the location of Fort Charles, a civilian but fortified trading post.

On-site interpretation of early man, prehistoric animals, and significant geological sites has not been touched, although the acquisition of the Agate Springs fossil beds by the National Park Service and the proposed development there is a major step in that direction.

Chapter VI

Demand For

Outdoor Recreation

DEMAND FOR OUTDOOR RECREATION

Demand for recreation takes into account the quantity and quality of recreation desired by potential users at various prices and times. Studies such as the ORRRC (Outdoor Recreation Resources Review Commission) Report of 1962 have shown that an increased desire for outdoor recreation is being evidenced throughout the Nation. In traditionally work-minded Nebraska this realization has only recently come into sharp focus. Factors such as growing population, higher population concentration in urban areas, added recreational opportunities, new attitudes more favorable toward outdoor recreation, higher family incomes, increased amounts of leisure time and the added mobility of a larger portion of the population have all contributed to a marked increase in demand for outdoor recreation in Nebraska.

Special surveys, visitation data, population shifts, income trends and many other pertinent sources of information can give added insight into the probable demand for outdoor recreation within the next few years. The limitations of these data along with those of the underlying assumptions inherent in present projection methods must be recognized, especially with reference to using quantified demand projections. The factors comprising demand for outdoor recreation are too numerous and the interactions of these variables are too complex to allow completely reliable predictions with presently available methods and information.

The primary purpose of this chapter is to point out significant trends and based upon these trends and other available relevant information to analyze as thoroughly as possible the nature and magnitude of outdoor recreation demand at present and for the foreseeable future. Some quantified demand forecasts will also be provided to illustrate graphically the probable trends and the magnitude of demand for outdoor recreation in Nebraska.

PROCEDURE

Population analysis will be made on a statewide basis, and also by hypothetical "socio-economic areas." Economic growth, leisure time, mobility and people's interests will be treated briefly on a statewide basis.

The concept of "socio-economic areas" is based on the idea that there are various regions in the State which include a central city, and a large enough natural economic area surrounding it to support an acceptable level of facilities, goods and services.[1] Conversely, the central city must be large enough and diverse enough to provide the people of the given area all that they require in the course of daily living.

---

[1] Ottoson, Howard W., Eleanor Birch, and Phillip A. Henderson; Land and People in the Northern Plains Transition Area, University of Nebraska Press, 1965.

Identification of the socio-economic areas used here was generally based upon the following criteria:

(1) the central city should have a population of 12,000 or more;

(2) the area should have a population of 50,000 or more; and

(3) the area should not exceed 10,000 square miles in size.

Actual delineation was made by use of a ratio of persons who had always lived in their given residence to the total number of persons in each county, as provided by the 1960 census of population. In almost every case the ratio was lowest in counties containing the central cities, and progressively increased as border counties were approached. This would seem to indicate that long run population shifts occurred within the approximate pattern of the delineated areas. Such shifts were primarily motivated by economic and social forces. Hence the term "socio-economic area."

Fourteen areas were delineated as shown in Figure 6.1. Data listed in Table 6.1 show that they range in area from 1,123 to 19,024 square miles, and contain from three to 14 counties. They meet the given criteria with the following exceptions. South Sioux City Socio-Economic Area, appears to be deficient in both central city and area population. Yet, it is evident that South Sioux City is closely integrated with the larger city of Sioux City, Iowa located just across the state line and a part of the total metropolitan complex. The socio-economic functions of this region are oriented toward the Sioux City Metropolitan Area and not just to South Sioux City, Nebraska, alone. If Woodbury County, Iowa were added to this area, it would result in four counties with a population of 135,360 and an area of 1,994 square miles. Comprehensive planning must take this into consideration. The demand for recreation in this area is considerably greater than that reflected by Nebraska residents alone.

McCook SEA is slightly deficient in population, both in the city and the region. However, this deficiency is not enough to cause concern. It should also be noted that this eight-county area contains four large reservoirs which have considerable potential for regional recreational use. It has been established by a previous study, that people from four counties in Kansas and three counties in Colorado use these lakes for recreation.[2]

Ogallala SEA is also lacking in population. However, Lake McConaughy is the largest lake in Nebraska and is heavily used by non-residents, especially those who live in northeastern Colorado. The growth potential of Ogallala as a recreation and tourism center is substantial due to its favorable location in relation to Lake McConaughy and Interstate "80".

The only other area that appears to be out of line is the Valentine SEA. Actually this is not an economic area in its true sense, but rather the Sandhills Region of Nebraska where people are few and cattle is "king". Not even

---

[2]Palmer, Edgar Z. 1960. Recreational Aspects of Three Nebraska Lakes. Bureau of Business Research, University of Nebraska, Community Study Number Three.

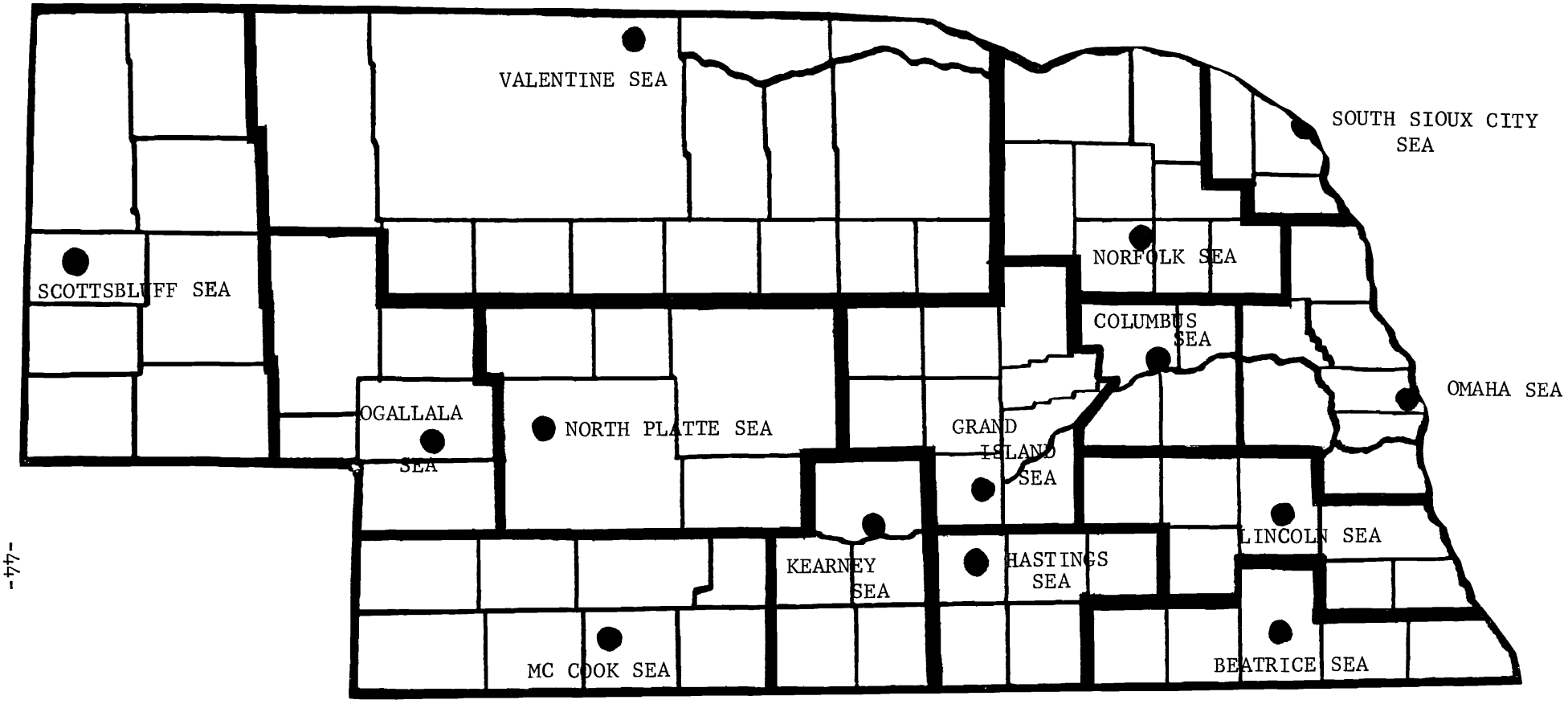


Figure 6.1. Estimated socio-economic regions of Nebraska with their central cities, 1960.

Source: Howard W. Ottoson, Eleanor Birch, and Phillip A. Henderson. Land and People in the Northern Plains Transition Area, University of Nebraska Press, 1965, page 342.

one city within this region of 19,000 square miles contains as many as 3,500 people. Any current planning necessitates setting this area apart from the remainder of the State.

The actual delineation of workable socio-economic areas to have legal status and social acceptance as well as economic feasibility, would no doubt result in the selection of different boundaries than those used. It seems logical, however, that state and federal aids to economic and social development should be directed as much as possible toward such economic areas rather than to smaller planning units of less efficient size. These areas would contain enough people and resources to get a job done adequately, and to respond to the changing needs of their citizens.

Many and varied public entities throughout the State are considering combination of functions on some type of area or regional basis. School districts continue to consolidate; power districts talk of merging; county extension agents may very well become area agents, serving groups of counties; and even some towns and counties are banding together in associations to accomplish regional planning, development and promotion. The need in the State is for comprehensive planning on a multi-county or area basis. The trend appears to be in this direction.

The Department of Economic Development has been assigned the responsibility for coordination of planning activities for the State of Nebraska. One of their functions will be to conduct an economic base study of the State and to propose standard geographic subregions to be used by all state agencies for planning purposes. Thus, future revisions of this plan may use slightly altered geographic areas.

POPULATION ANALYSIS

Density and Distribution

Nebraska had an overall population density of about 19 people per square mile in 1960. This average figure does not tell the entire story, since the population density of the State is highly irregular. The greatest concentration occurs in the eastern part of the State; Douglas County (Omaha) contains 1,031 people per square mile while McPherson County in west central Nebraska has less than one person per square mile for the state low.

The same disparity by socio-economic areas is apparent in Table 6.1. The Omaha socio-economic area has 36.16 per cent of the state's population located on approximately 4.28 per cent of the state's land area. The fourteen counties included in the Lincoln and Omaha SEA's account for 52.5 per cent of the estimated 1966 state population, but only 9.45 per cent of the total land area. The lowest density occurs in the Valentine SEA, or the Sandhills area, where only 3.39 per cent of the state's population occupies 24.83 per cent of the state's land area.

Figure 6.2 graphically illustrates population density and distribution in the State in 1960. It is evident that the major portion of Nebraska's population

Table 6.1. Socio-economic areas of Nebraska, showing land areas and population -- present and projected.

Area	Central City	No. Counties	Total[1] (Sq. Miles)	Area % of Total	Population Total[2]	1966 %	1985 Total	%	% Change
1	South Sioux City	3	1,123	1.46	28,056	1.85	29,345	1.5	+ 4.6
2	Omaha	7	3,279	4.28	548,225	36.16	829,727	43.2	+ 51.3
3	Lincoln	7	3,962	5.17	247,308	16.31	343,897	17.9	+ 39.1
4	Beatrice	5	2,993	3.91	63,296	4.18	48,525	2.5	- 23.3
5	Norfolk	8	5,291	6.91	101,158	6.67	105,490	5.5	+ 4.3
6	Columbus	4	2,092	2.73	53,286	3.51	60,800	3.2	+ 14.1
7	Grand Island	9	4,945	6.45	93,325	6.16	101,078	5.3	+ 8.3
8	Hastings	5	2,863	3.74	62,631	4.13	67,897	3.5	+ 8.4
9	Kearney	5	3,141	4.10	53,800	3.55	60,225	3.1	+ 11.9
10	McCook	8	6,103	7.97	40,284	2.66	38,360	2.0	- 4.8
11	North Platte	5	7,489	9.78	66,636	4.40	72,309	3.8	+ 8.5
12	Ogallala	5	4,783	6.24	18,861	1.24	17,262	0.9	- 8.5
13	Valentine	14	19,024	24.83	51,399	3.39	40,278	2.1	- 21.6
14	Scottsbluff	8	9,524	12.43	87,809	5.79	103,380	5.4	+ 17.7
	TOTAL	93	76,612	100.00	1,516,074	100.00	1,918,573	99.9	+ 26.5

(1) Source: The World Almanac 1967: Newspaper Enterprise Assn., Inc. 1966, page 371. Other sources give Nebraska's total areas as 77,227 sq. miles, a difference of 615 sq. miles is not accounted for.

(2) Source: Nebraska Bureau of Business Research Bulletin, April 1967.

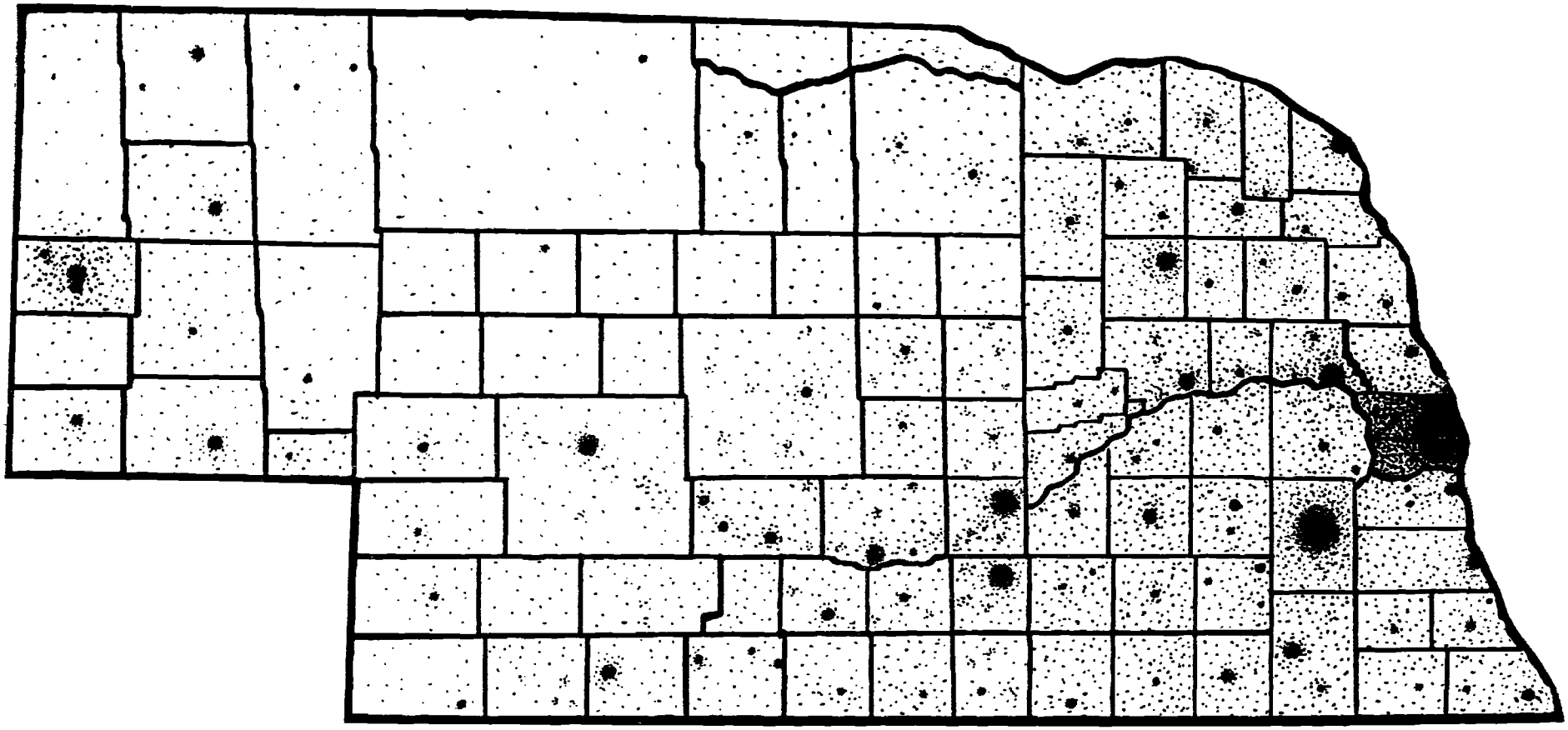


Figure 6.2: Geographical population distribution for Nebraska, 1960. (1 dot = 100 people)

is concentrated in the eastern one-third of the State and along the Platte Valley. The high density of the Omaha area is evident. It is interesting to note that the larger river courses in the State are easily identified by population concentrations.

Trends and Projections

Projected population trends of the State were based on estimates of the U.S. Bureau of Census under Series III for each target year used in projections.[3] Assumptions made with this method are a moderate decline in fertility, uniform mortality rates from the National Life Table, and that the net interstate migration patterns would be zero throughout the projection period. The trend in urban population was projected on the basis of mean increase in percentage or urban population from 1940 to 1960 and assuming that this trend would continue to 1980.

Since 1890, populations of Nebraska show an extremely slow rate of growth compared to the national growth rate. Figure 6.3 shows that during the period 1890 to 1930 the population increased from 1,062,565 to 1,377,963. With the drouth and depression of the 1930's, the population declined slightly to 1,315,834 as residents migrated to other states. From 1940 to 1960, the population increased from 1,315,834 to 1,411,330 or approximately 7.25 per cent. Most of this growth occurred in the decade from 1950 to 1960. As shown in Figure 6.5, population trends have been characterized by a steadily increasing urban population, and a steady and substantial loss in rural population. The number of places classed as urban by the Bureau of Census increased from 31 in 1920, to 43 in 1960.

Population forecasts shown in Table 6.3 indicate that a substantially greater rate of growth can be expected during the period 1966 to 1985. It is estimated that the population will increase to about 1,638,000 by 1975, and to 1,918,000 by 1985, or approximately a 36 per cent increase from 1960 to 1985.

The expected rate of increase for Nebraska's population from 1960 to 1985 is less than that expected for the Nation, but is comparable to that of the West North Central Census Region.

If the same trends in the state's urban and rural population segments are obtained for the period 1966 to 1985 as from 1940 to 1966, approximately 62 per cent and 70 per cent of the 1970 and 1980 populations respectively will be urban, Figure 6.4. This compares with an estimated 54 per cent of the population which was urban in 1960.

Population trends of the various socio-economic areas were analyzed and projected using the assumption that the trend in relationship of the area population to the state population which occurred in the period 1940 to 1966 will continue from 1966 to 1985. The technique is not entirely acceptable as a projection method, but it should serve to reflect trends and approximate

---

[3] U.S. Department of Commerce, Bureau of Census. 1967. Illustrative Projections of the Populations of States: 1970 to 1985. Revised current population reports, Population Estimates, Series P-25, No. 362.

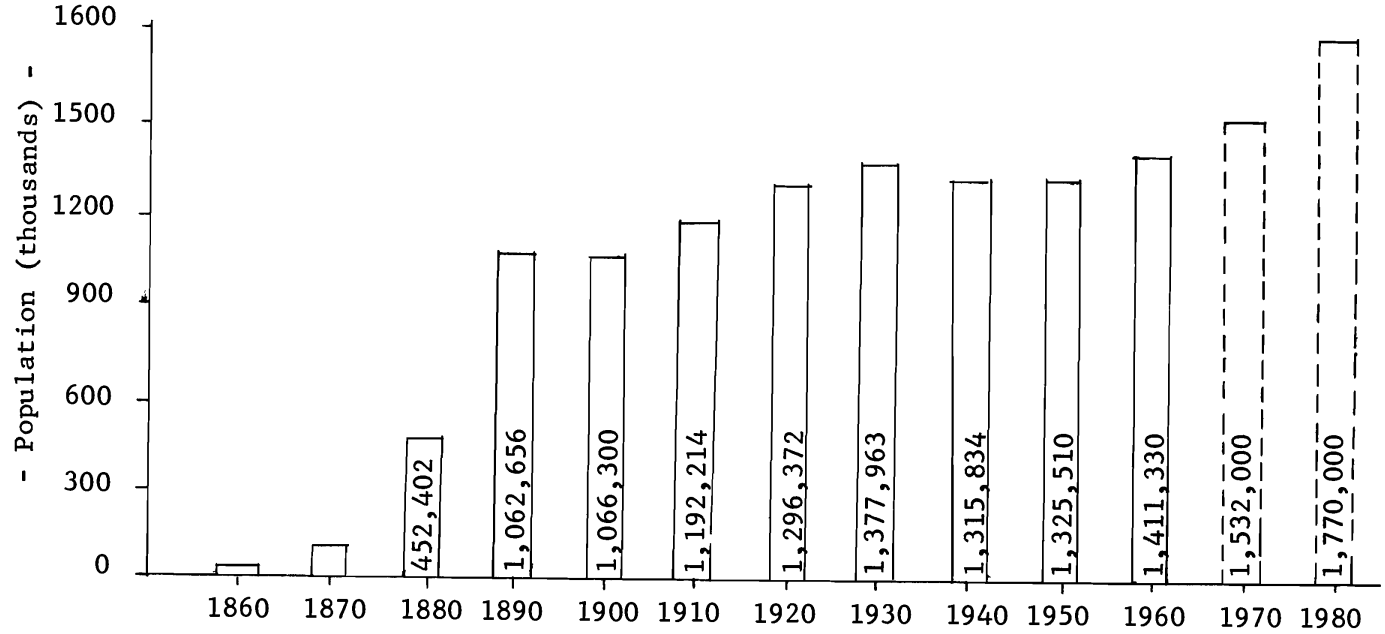


Figure 6.3: Population trends and projected populations for 1970 and 1980 in Nebraska.

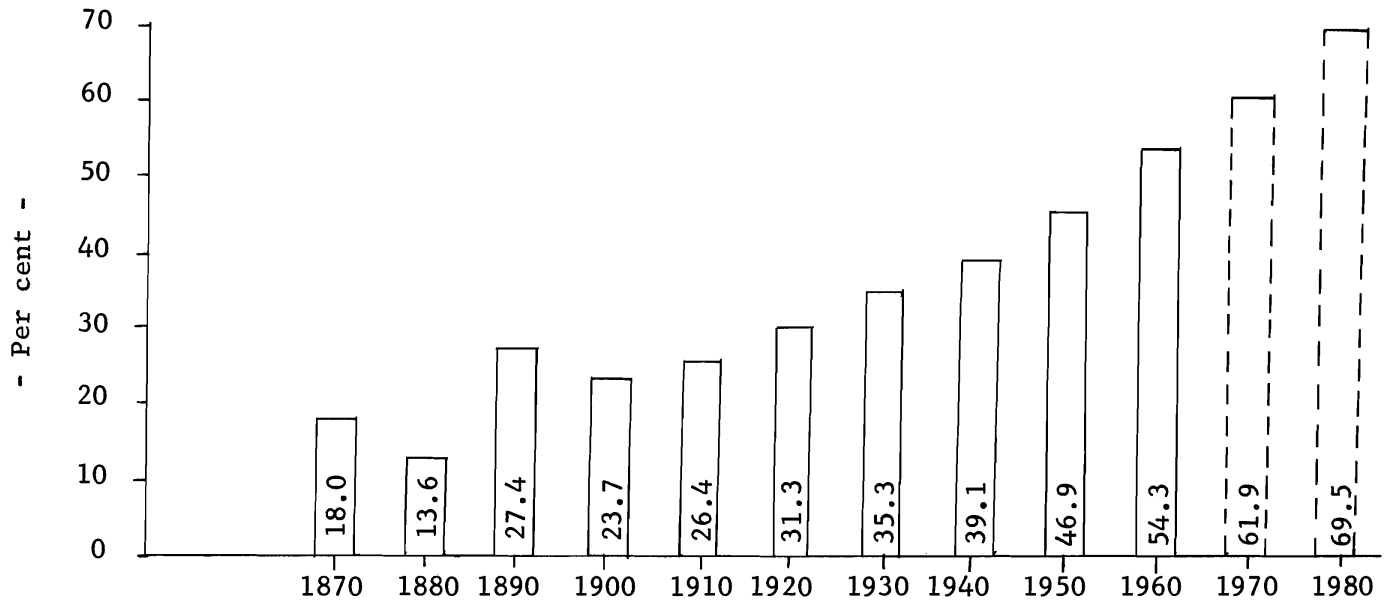


Figure 6.4: Trends and projected trends of per cent of Nebraska's population which is urban. Projections based on increase shown in 1940-1960 period, 1950 and 1960 percentages are based upon Bureau of Census' new definition of urban areas, see Table 6.2.

Table 6.2. Rural-urban residents, 1860-1960

	Urban Territory			Rural Territory			Per Cent of Total	
		Change			Change			
Year	Population	Number	Per Cent	Population	Number	Per Cent	Rural	Urban
1960	733,595	127,065	20.9	677,735	-41,245	- 5.7	48.0	52.0
1950	606,530	92,382	18.0	718,980	-82,706	-10.3	54.2	45.8
1940	514,148	28,041	5.8	801,686	-90,170	-10.1	60.9	39.1
1930	486,107	80,814	19.9	891,856	777	0.1	64.7	35.3
1920	405,293	94,441	30.4	891,079	9,717	1.1	68.7	31.3
1910	310,852	58,150	23.0	881,362	67,764	8.3	73.9	26.1
1900	252,702	-38,939	-13.4	813,598	43,583	5.5	76.3	23.7
1890	291,641	230,334	375.7	771,015	379,920	97.1	72.6	27.4
1880	61,307	39,174	177.0	391,095	290,235	287.8	86.4	13.6
1870	22,133	22,133	-----	100,860	72,019	249.7	82.0	18.0
1860	none	none	none	28,841	-------	-----	100.0	----

Note: These data are all taken from Bureau of Census reports. The Bureau considers all incorporated areas of less than 2,500 population as Rural Territory but non-farm. Under the Bureau's new definition of urban areas (which also includes urban fringe areas) the following estimates are given:

	Urban Territory			Rural Territory			Per Cent of Total	
		Change			Change			
Year	Population	Number	Per Cent	Population	Number	Per Cent	Rural	Urban
1960	766,053	144,148	23.2	645,277	-58,328	- 8.3	45.7	54.3
1950	621,905			703,605			53.1	46.9

Source: U.S. Bureau of Census, U.S. Census of Population: 1960. Number of Inhabitants, Nebraska Final Report PC (1) - 29A, U.S. Government Printing Office, Washington, D. C. 1960.

Figure 6.5: Past trends of rural and urban populations of Nebraska.

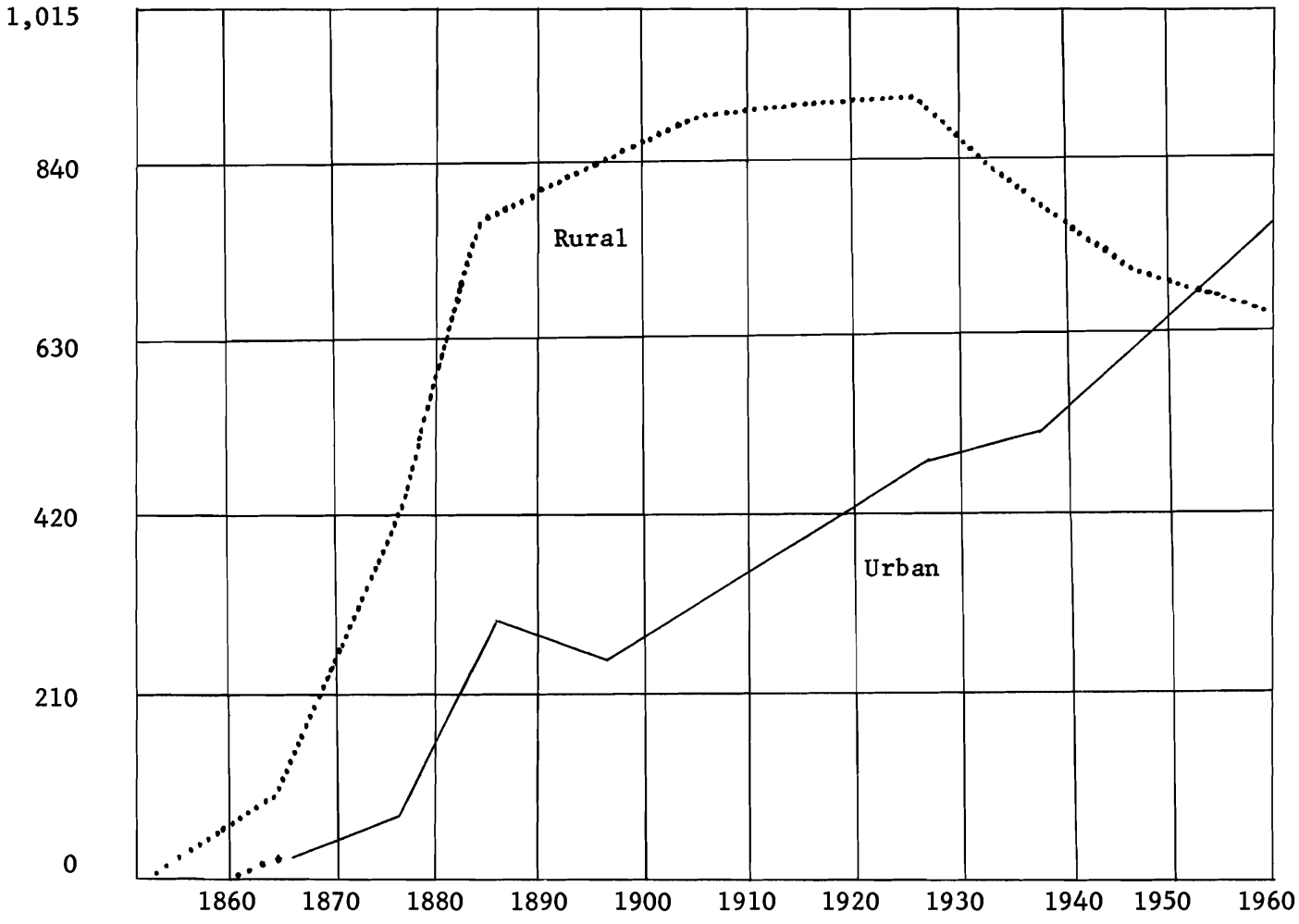


Table 6.3. Estimated populations and per cent changes for various census areas (1960 to 1985).[1]

Census Area	Item	1960	1966	1975	1985	Expected Change 1960-85
United States	Population (thousands)	179,323	193,795	222,805	263,627	
	% of change	---	8.07	14.97	18.30	+ 47.02%
West North Central	Population (thousands)	15,394	15,858	17,800	20,815	
	% of change	---	3.01	12.24	16.94	+ 35.21%
Nebraska	Population (thousands)	1,411	1,516[2]	1,638	1,918	
	% of change		7.44	8.05	17.09	+ 35.93%

[1] U.S. Bureau of Census

[2] Nebraska Bureau of Business Research

populations, and show regions of the State where demand for outdoor recreation can be expected to increase at the greatest rate, (See Appendix A-1.1 for example of computation).

Analysis of the 14 socio-economic areas shows that only three SEA's, Omaha, Lincoln and Scottsbluff, have shown a total increase in population for the period 1920 to 1966. Total populations of all other areas decreased or remained relatively stable, Figure 6.6 through 6.19. Based on the previously described projection method, these three SEA's will account for most of the net increase in population by 1985, with the Omaha SEA showing a 51 per cent increase, Lincoln SEA a 39 per cent increase, and Scottsbluff SEA an 18 per cent increase.

A decrease in rural population as opposed to an increase in urban populations was shown by all 14 areas.* In five SEA's the decrease in rural population is exceeding the increase in urban population, resulting in out-migration and a net deficit in those areas.

Although general population trends of the various socio-economic areas have been fairly consistent, certain existing conditions or anticipated changes that might affect future trends of individual SEA's should be mentioned.

South Sioux City SEA has been characterized by steadily declining populations since 1930 with some stabilization indicated in the past few years. Considering Nebraska residents only, the projected population trends would indicate a relatively stable demand for outdoor recreation in this area. Actually, the demand can be expected to increase substantially as a result of expected population growth of Sioux City metropolitan area. Future planning should consider this in any projections of demand. On a statewide basis, however, it is assumed that demand from outstate border areas such as Sioux City will be counter balanced by those Nebraskans living near the border who go to nearby states to satisfy some of their demand for outdoor recreation. This is especially true of Omaha residents who travel into nearby Iowa for recreational purposes.

Declining population trends of the Grand Island, Hastings, Kearney and North Platte SEA's might very well be stabilizing or reversing during the 60's. Due to favorable location in relation to Interstate "80", such Platte Valley cities as Grand Island, Kearney, North Platte, Lexington and others could attract additional industry. Tourism opportunities are also present. Considerable growth could easily result.

It is quite possible that the population of the Valentine SEA will decrease at a lesser rate and eventually stabilize during the projection period, since farm and ranch consolidation is at an advanced stage in many of the counties included.

---

*Omaha and Lincoln SEA's showed an increase in rural population from 1950 to 1966. However, this is the result of population increases in communities less than 2,500 and unincorporated suburban areas which are near Omaha and Lincoln. These communities are, in effect, suburbs of Omaha and Lincoln.

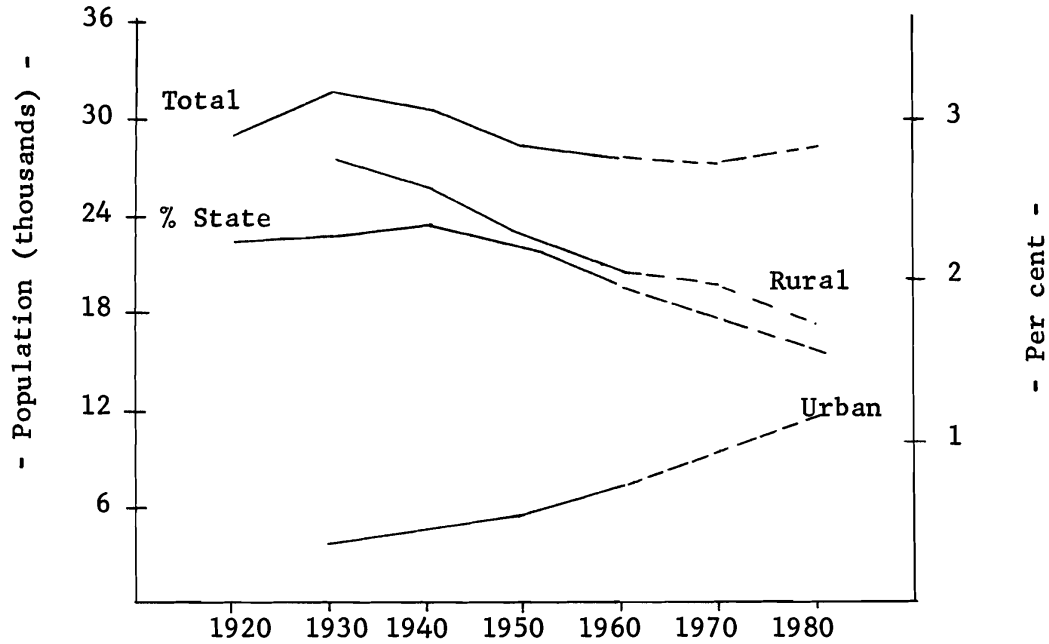


Figure 6.6: Past and projected population trends for the South Sioux City SEA. (Dixon, Dakota and Thurston Counties)

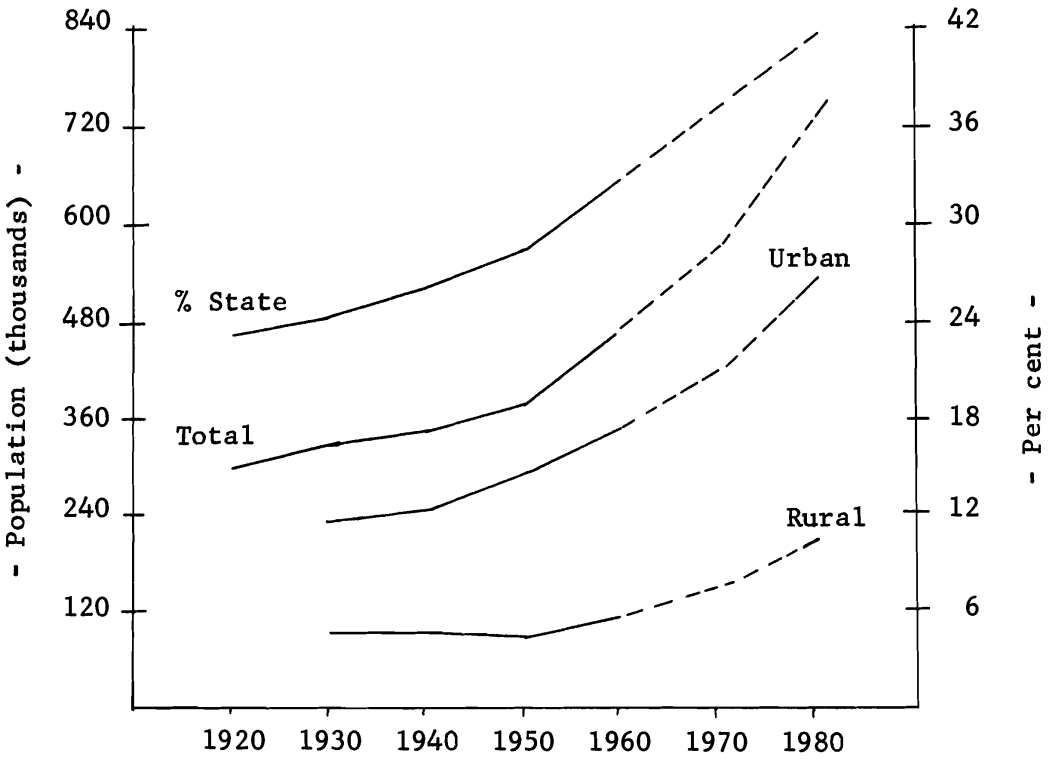


Figure 6.7: Past and projected population trends for the Omaha SEA. (Burt, Cass, Dodge, Douglas, Sarpy, Saunders and Washington Counties)

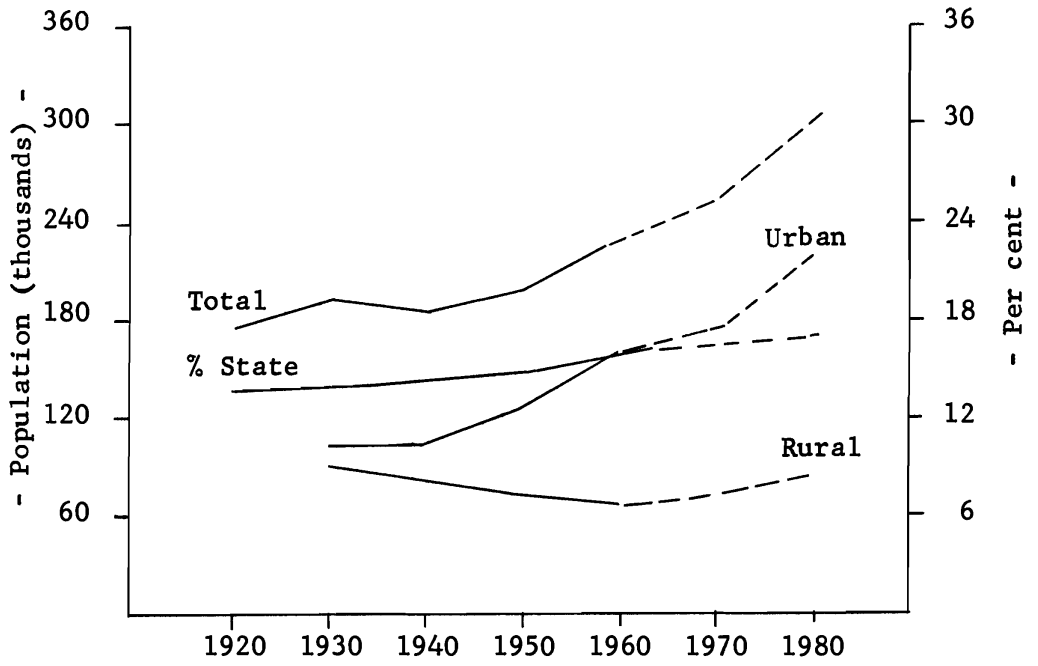


Figure 6.8: Past and projected population trends for the Lincoln SEA. (Johnson, Lancaster, Nemaha, Otoe, Saline, Seward and York Counties)

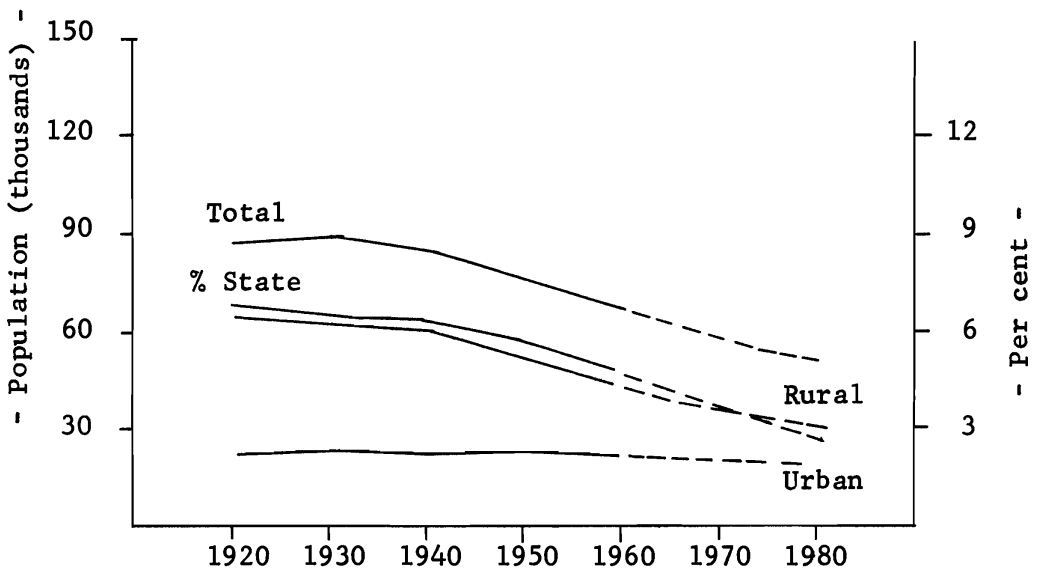


Figure 6.9: Past and projected population trends for the Beatrice SEA. (Gage, Jefferson, Pawnee, Richardson and Thayer Counties)

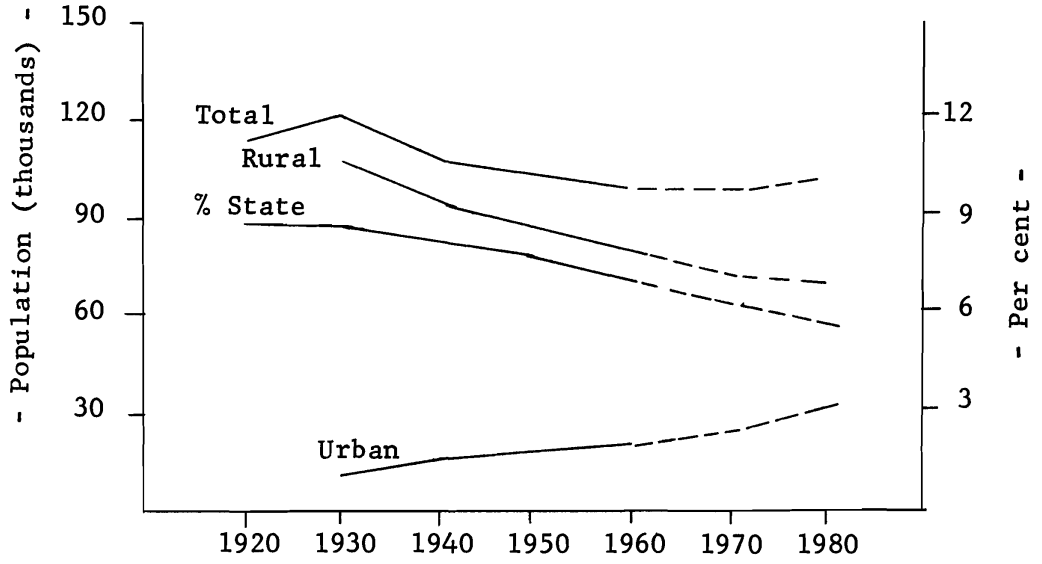


Figure 6.10: Past and projected population trends for the Norfolk SEA. (Antelope, Cedar, Cuming, Knox, Madison, Pierce, Stanton and Wayne Counties)

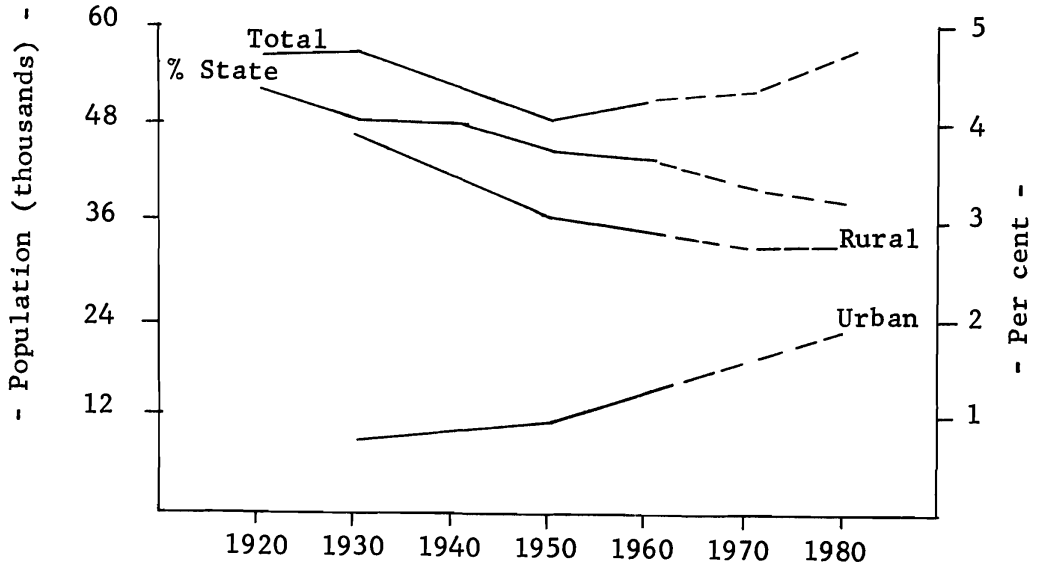


Figure 6.11: Past and projected population trends for the Columbus SEA. (Butler, Colfax, Platte and Polk Counties)

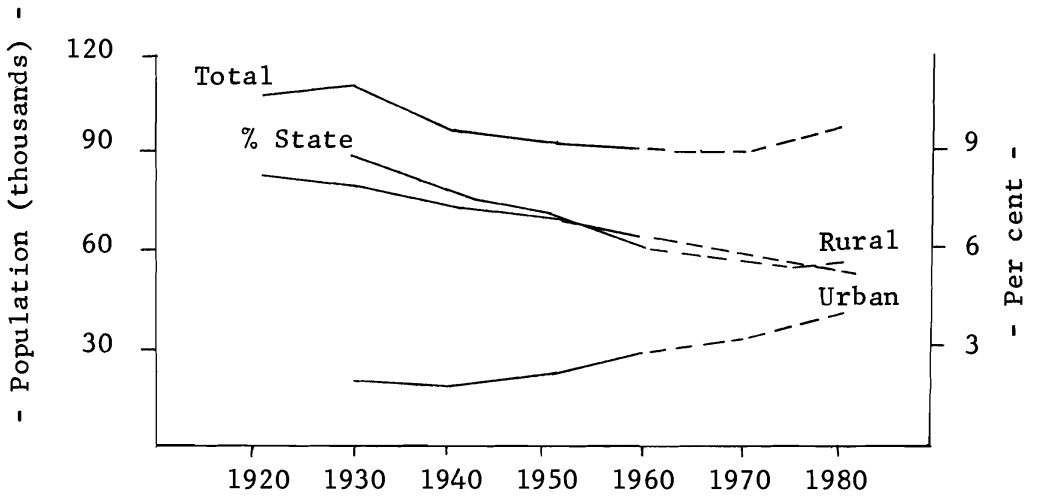


Figure 6.12: Past and projected population trends for the Grand Island SEA. (Boone, Greeley, Hall, Hamilton, Howard, Merrick, Nance, Sherman and Valley Counties)

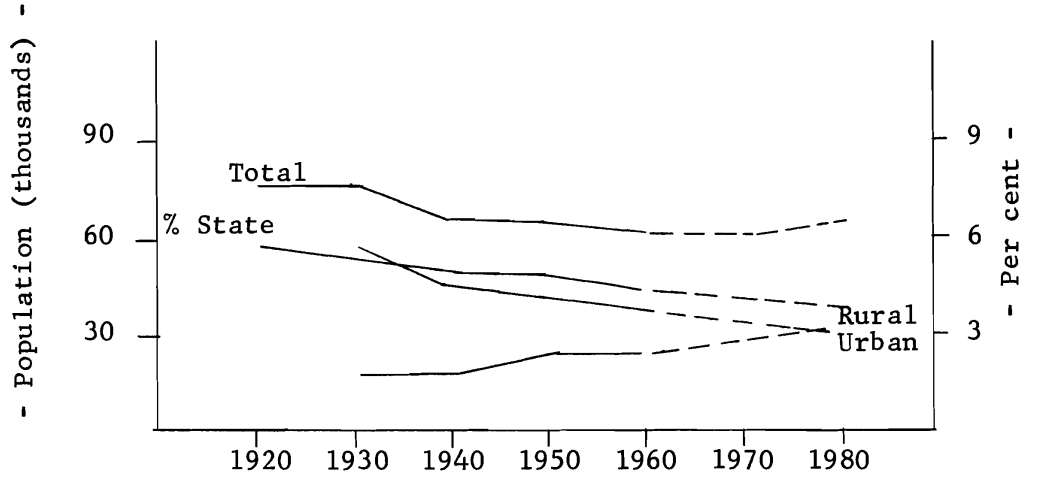


Figure 6.13: Past and projected population trends for the Hastings SEA. (Adams, Clay, Fillmore, Nuckolls and Webster Counties)

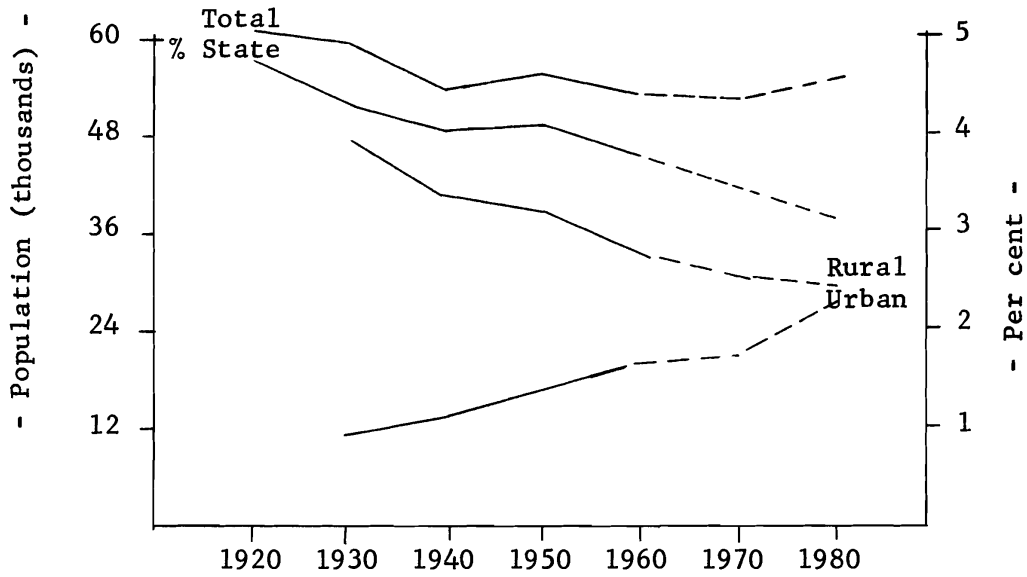


Figure 6.14: Past and projected population trends for the Kearney SEA. (Buffalo, Franklin, Harlan, Kearney and Phelps Counties)

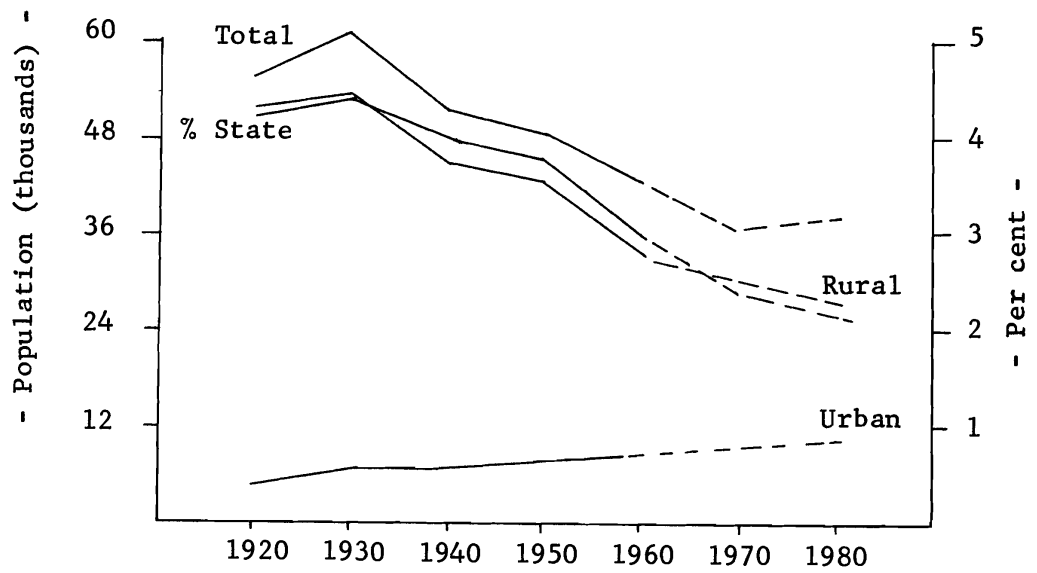


Figure 6.15: Past and projected population trends for the McCook SEA. (Chase, Dundy, Frontier, Furnas, Hayes, Hitchcock, Gosper, and Red Willow Counties)

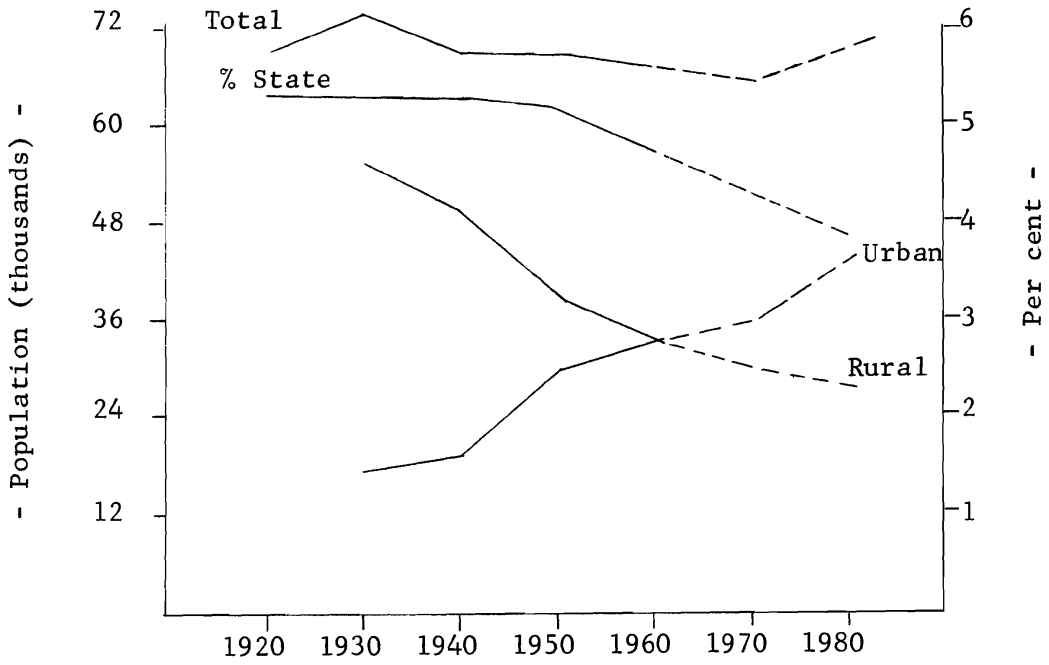


Figure 6.16: Past and projected population trends for the North Plate SEA. (Custer, Dawson, Lincoln, Logan and McPherson Counties)

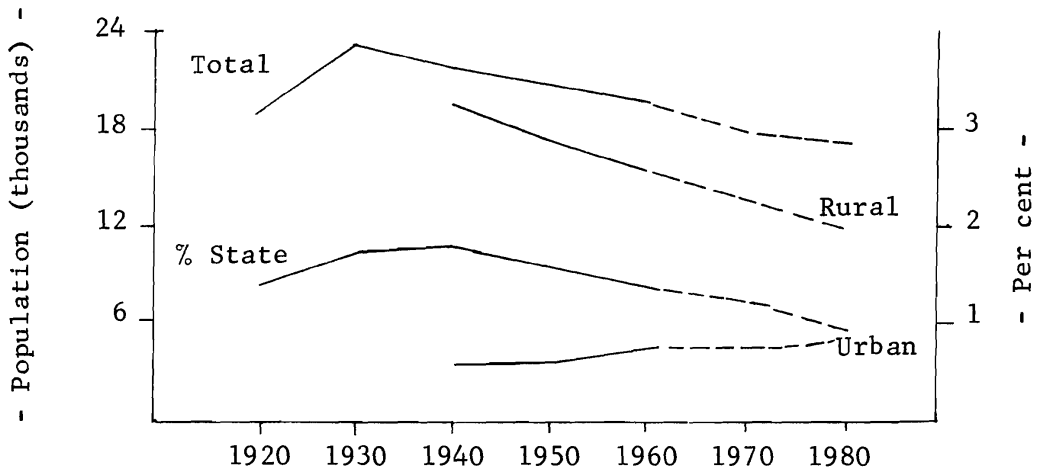


Figure 6.17: Past and projected population trends for the Ogallala SEA. (Arthur, Deuel, Garden, Keith and Perkins Counties)

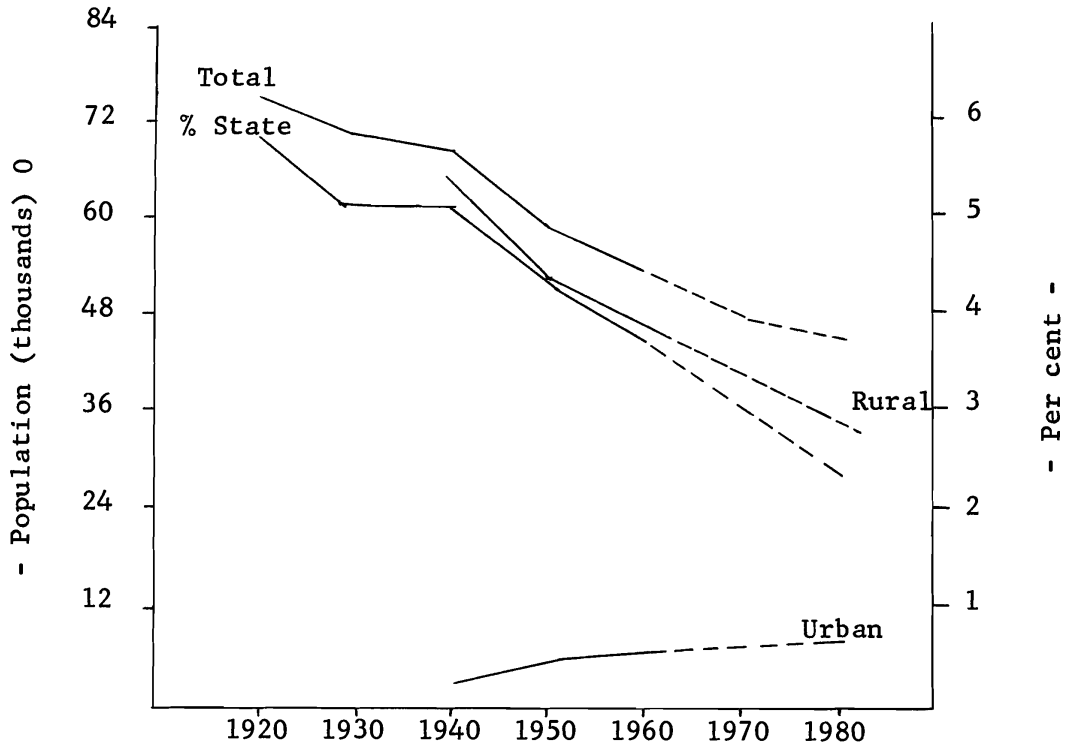


Figure 6.18: Past and projected population trends for the Valentine SEA. (Blaine, Boyd, Brown, Cherry, Garfield, Grant, Holt, Hooker Keya Paha, Loup, Rock Sheridan, Thomas and Wheeler Counties)

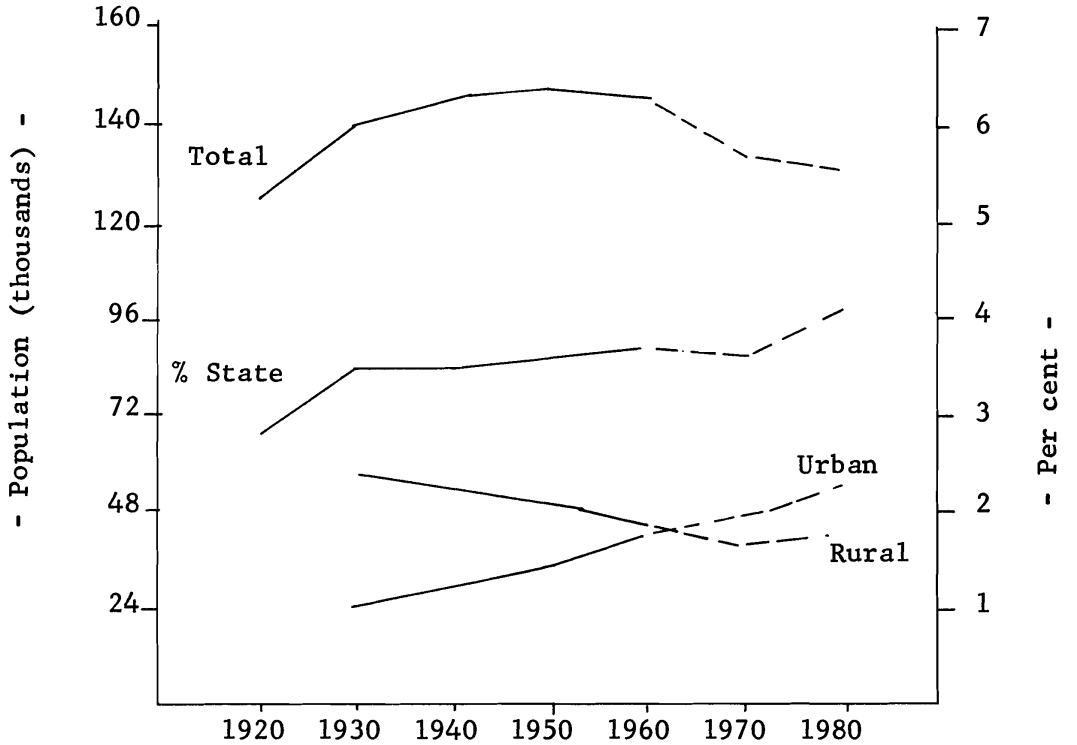


Figure 6.19: Past and projected population trends for the Scottsbluff SEA. (Banner, Box Butte, Cheyenne, Dawes, Kimball, Morrill, Scotts Bluff and Sioux Counties)

Scottsbluff SEA showed considerable urban growth in the recent past, due in part to the development of an oil industry in Cheyenne, Kimball and Banner Counties. However, population growth rates have slowed down recently as development of the oil industry has stabilized.

The fact that 11 of 14 socio-economic areas decreased or remained relatively stable should not be construed to mean that individual cities and towns or specific rural areas, located within the various regions, did not increase in population. Thirty-five of the 43 urban cities in the State showed population increases from 1960 to 1966. Certain rural communities have also shown a modest increase. The 1966 populations and the per cent changes from 1960 to 1966 are shown for urban places of the respective areas in Table 6.4.

Some additional patterns of population growth can be noticed by comparing the growth rates in each county, Figure 6.20. The fastest growing areas in addition to Douglas, Sarpy and Lancaster Counties are Madison and Platte Counties where Norfolk and Columbus are located, Dakota County with its county seat of South Sioux City, Dodge County (Fremont) and Hall County where Grand Island is located. Each of these counties has grown by more than an estimated 10 per cent in the 1960 to 1966 period.[4]

Although the cities of Omaha and Lincoln and their suburbs will probably account for the largest growth in population during the next few years, it appears that some other cities will also experience rapid growth, although of a lesser magnitude. Norfolk, Columbus, South Sioux City and Grand Island will probably be the fastest growing areas. Fremont, Hastings, Kearney and Scottsbluff are also expected to grow substantially. It is interesting to note a narrow belt of counties across the State, roughly straddling the Interstate "80" which have all shown population gains, while most of the counties on the north and south of that line have decreased in population. The completion of Interstate "80" will accentuate the growth of the Platte Valley, especially that of the larger cities along this route.

Certain population trends are consistently exhibited. The state population will continue to increase, but at a rate less than the national average. Practically all of the increase will be in urban populations, with the rural farm segment continuing to decrease in numbers. More established farmers are selling out and moving to town while fewer young people are entering the farming profession.

The analysis does show that the greatest demand for recreation in the State, based on population growth, will come from the metropolitan areas of Omaha and Lincoln. In years to come growth potentials of the various SEA's or cities may change, depending upon such things as location of new highways (e.g., a north-south interstate route), abilities to plan and implement needed improvements, tourism development, industrial development, and other factors. In the meantime, potential population growth must be estimated primarily from past population trends.

---

[4] U.S. Bureau of Census Reports, 1960.

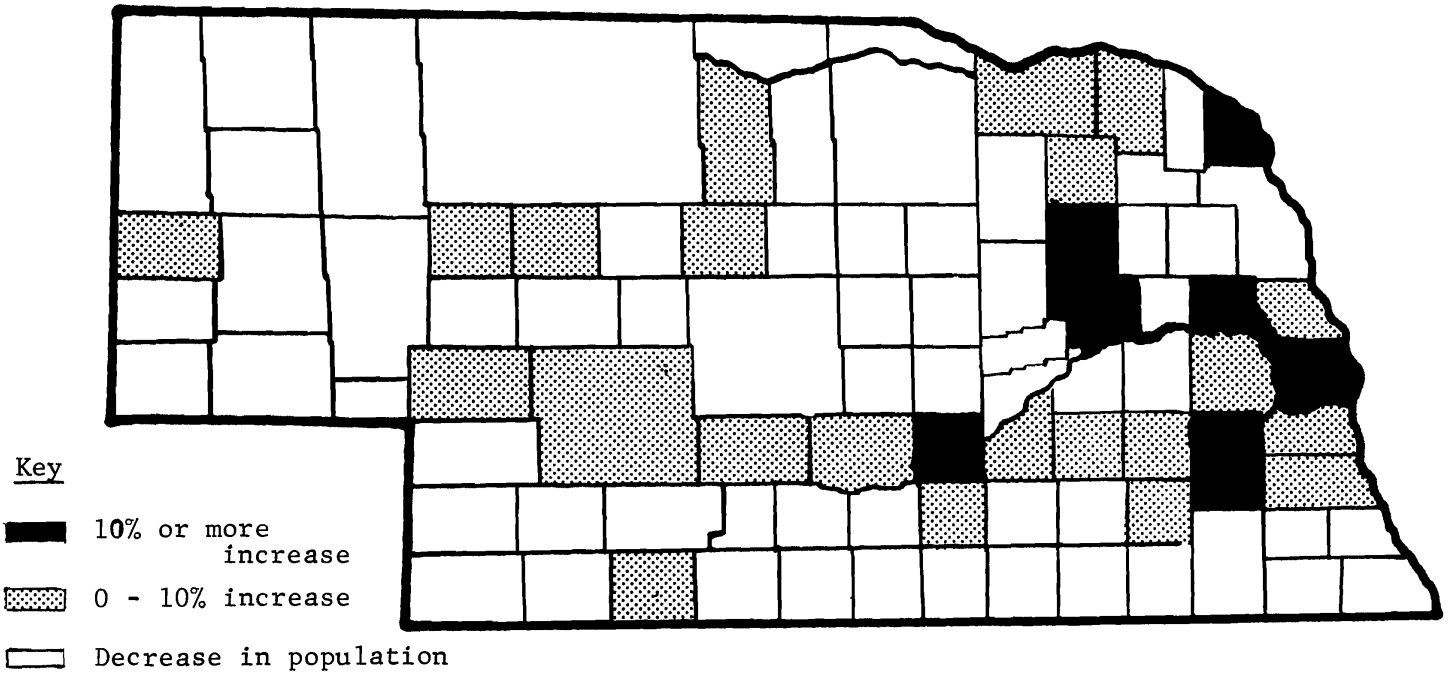
Table 6.4. 1966 populations and per cent change from 1960 for urban places of 14 socio-economic areas.

Area	City	1966[1] Population	1960-1966 % Change
1	South Sioux City	8,949	+ 24.3
2	Bellevue	20,029	+ 126.8
	Blair	5,556	+ 12.7
	Fremont	22,856	+ 16.0
	Omaha	339,494	+ 12.6
	Plattsmouth	6,643	+ 6.4
	Ralston	3,927	+ 31.9
	Wahoo	3,534	- 2.1
3	Auburn	3,336	+ 3.3
	Crete	4,334	+ 22.2
	Lincoln	155,000[2]	+ 20.6
	Nebraska City	7,686	+ 6.0
	Seward	4,611	+ 9.6
	York	6,435	+ 4.2
4	Beatrice	12,465	+ 2.8
	Fairbury	5,491	- 1.5
	Falls City	5,174	- 7.6
5	Norfolk	15,176	+ 11.3
	Wayne	4,652	+ 10.3
	West Point	3,931	+ 34.6
6	Columbus	14,857	+ 19.1
	Schuyler	3,185	+ 2.9
7	Grand Island	29,283	+ 13.8
	Aurora	2,824	+ 9.6
8	Hastings	23,515	+ 9.8
	Superior	2,864	- 2.4
9	Kearney	16,051	+ 13.0
	Holdrege	5,424	+ 3.8
10	McCook	8,719	+ 5.0
11	Cozad	3,662	+ 15.0
	Gothenburg	2,810	- 7.9
	Lexington	6,343	+ 13.8
	North Platte	17,901	+ 4.2
	Broken Bow	3,853	+ 10.6
12	Ogallala	8,719	+ 5.0
13	Valentine	2,966	+ 3.2
	O'Neill	3,433	+ 7.9
14	Alliance	7,497	- 4.4
	Chadron	5,287	+ 4.1
	Gering	5,818	+ 26.9
	Kimball	4,131	- 5.8
	Scottsbluff	14,390	+ 7.6
	Sidney	7,995	- 0.1

[1] Nebraska Bureau of Business Research Bulletin, April, 1967.

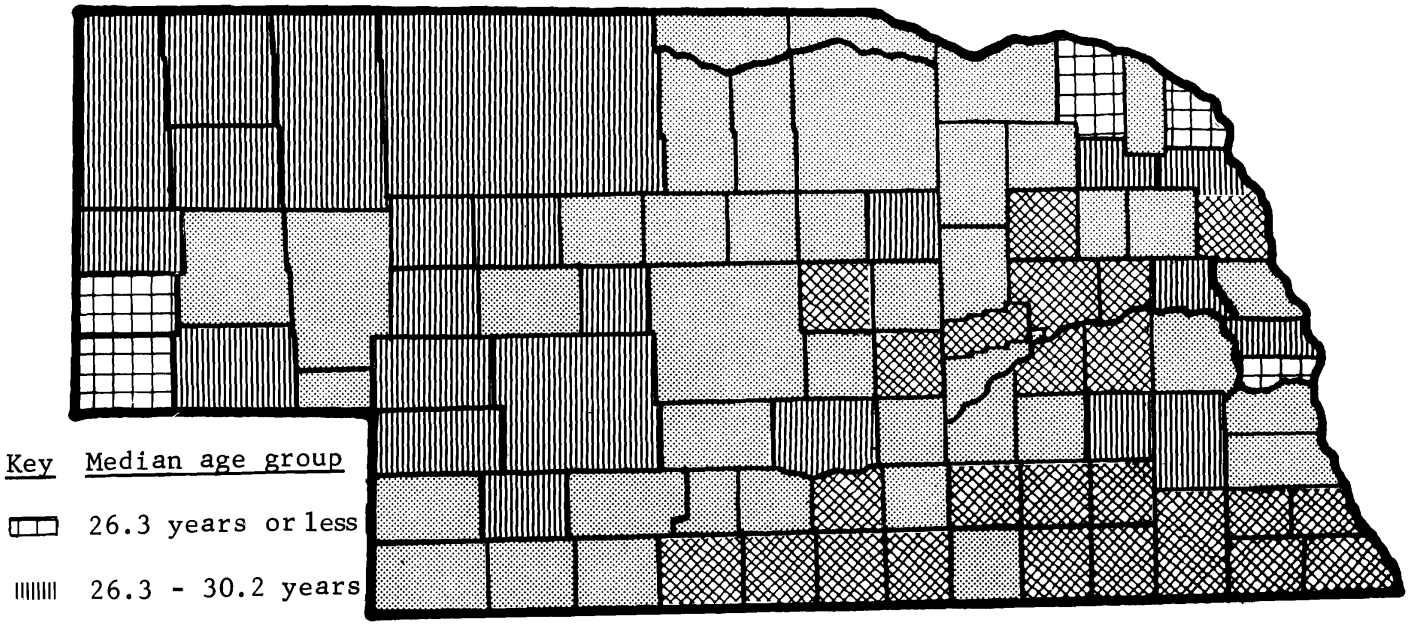
[2] Lincoln City-County Planning Department Estimate.

Figure 6.20. Population growth rates by county (1960-1966).



Source: 1960 U. S. Bureau of Census and Nebraska Bureau of Business Research (1966 data).

Figure 6.21. Population by median age group by county (1960).



Source: U. S. Census Reports, 1960

Population Characteristics

Age

Based on the 1960 census, the population of Nebraska possesses a median age of 30.2 years. Almost 31 per cent of the population is 14 years of age or less, 25.1 per cent is 15 to 34 years old, 32.5 per cent is in the 35 to 64 age bracket and 11.6 per cent of the population is 65 or older, Figure 6.22.

The four age groupings used here were selected according to estimated differences in recreational needs and interests. The age 14 and under category contains a large percentage of children requiring specialized facilities and relatively close supervision. The age 15 to 34 category consists of adults or near adults that are physically active and need a minimum of supervision. People in the age 35 to 64 category are less active physically, and probably have less available leisure time for certain regular recreational activities. The age 65 and over category contains retired people who have considerable leisure time but are not physically active. As in the youngest age bracket, special provisions may be necessary for this older group.

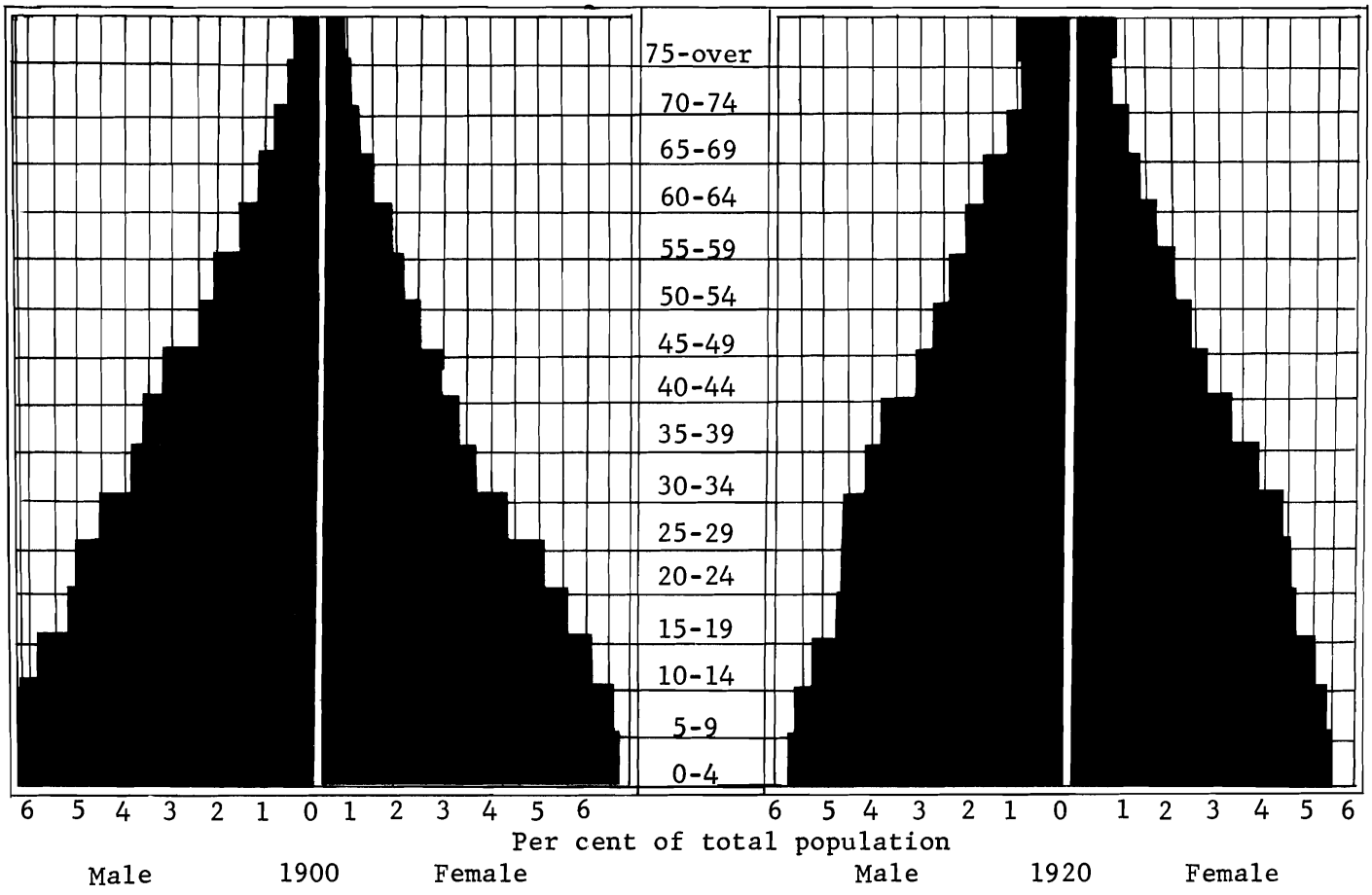
Age trends in the State have been relatively consistent. Median Age rose constantly from 20.9 in 1890 to 31.0 in 1950, then began dropping off to 30.2 in 1960. The age 14 and under group, which comprised 38.2 per cent of the population in 1890, dropped for five consecutive decades to a low of 25.1 per cent in 1940. In the last 20 years, however, this group increased to 30.9 per cent of the population. The age 15 to 34 group increased from 21.8 per cent of the population in 1890 to 34.6 per cent in 1950, dropping off in 1960 to 32.5 per cent of the population. The trend is opposite to that shown by the age 14 and under group. The age 65 and older group has increased in per cent of population throughout the entire 70-year census period, from 2.1 per cent in 1890 to 11.6 per cent in 1960. This trend is roughly inverse to that of people in the age 15 to 34 bracket who are leaving the State to take jobs elsewhere. The impact is even greater in the 20 to 29 category, which dropped in numbers by 29 per cent since 1920. The State has had a net loss of approximately 65,000 people in this age bracket since 1920. It is possible that the out-migration of these young people will slack off, if the agricultural economy stabilizes or if substantial industrial growth should occur.

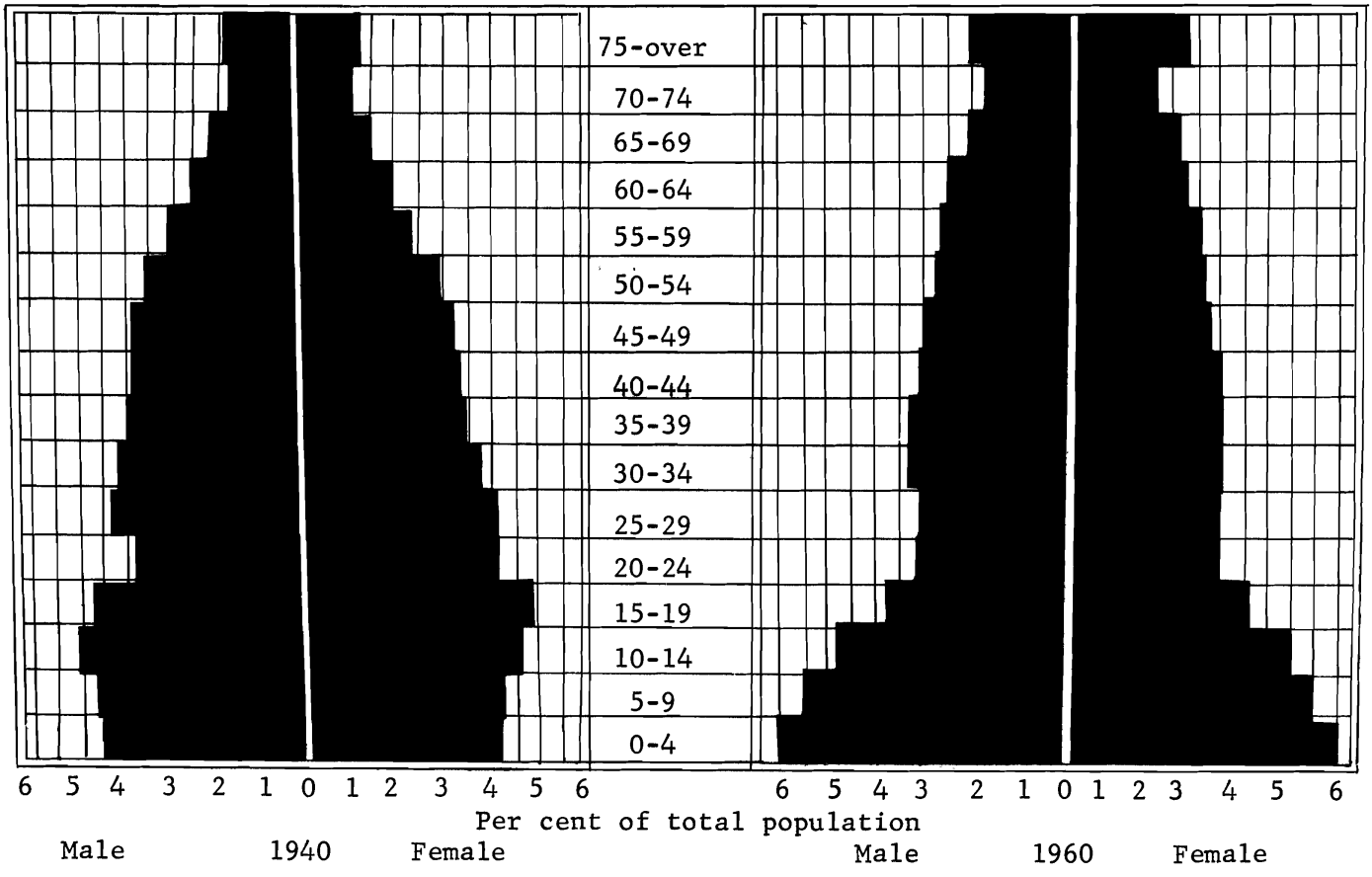
On the other hand, people in the age 65 and older category are making up a larger portion of our population. This increase is primarily due to longer life spans and the reluctance of older people to change their residence.

Before concluding that Nebraska is becoming a State composed of elderly citizens, it should be noted that since 1940 we have also experienced an increase in young people of 14 years of age or less. These are the ones looking for work in 10 to 15 years, and who will remain in the State if opportunities are available.

The relative ages of Nebraska's population may also give some additional clues concerning the pattern of future growth in the state's population. Figure 6.21 shows relatively younger age groups in the metropolitan areas of Lincoln and Omaha and in the counties along the Platte Valley as would be

Figure 6.22: Distirbution of Nebraska population by age group.





expected since this is a normal characteristic of rapid growth areas. This map also shows that one of the slowest growing areas in the State, the southeastern part, has a relatively high per cent of older citizens. The most interesting aspect illustrated in this figure is the relatively young median age throughout western and northeastern Nebraska. Whether this is an indication that relatively more rapid growth in population will occur in these areas is not known; however, it would appear to be a plausible possibility.

In relation to recreation demand, studies by ORRRC found that young people in the bracket 12 to 17 engaged in recreation more than any other group, and that certain activities such as swimming and bicycling were primarily activities of this group alone. In Nebraska this recreationally active segment of the population is on the increase. The age bracket 10 to 19 (closest corresponding data available) increased from 14.7 per cent of the population in 1950 to 16.2 per cent of the population in 1960.

It appears that at least for a time, Nebraska will contain a relatively large proportion of the very young and the very old. Together they make up 42.5 per cent of the state's population. Both of these groups have considerable leisure time available. The first group is active; the latter more or less passive. The needs of these two groups warrant special consideration.

Sex

In 1960 women outnumbered men by 711,304 to 700,026 for a ratio of 98.4 males to 100 females. This was the first time in census history that females outnumbered males, although the trend has been in this direction. In 1890, 1910, 1930 and 1950 respectively, there were 117.8, 111.2, 105.2 and 101.4 males to 100 females in the State.

More recent estimates indicate that this trend may be leveling off and may even reverse itself again in the next few years. January, 1966 estimates show that females outnumber males by 724,000 to 718,000 for a ratio of 99.2 males to 100 females.

Although total participation does not vary much by sex, there is a wide variation by activities. Men are principal participants in sports such as baseball and hunting, while women prefer to participate in activities such as sightseeing and picnicking.

Present trends indicate that women will have a larger role in the future. Provision for additional family-type activities will be required; demand for more convenient facilities will grow. Recreational needs of the growing segment of the population that is composed of elderly women is specialized and deserves consideration. Gardens, footpaths, hobby facilities, shuffleboard courts and similar facilities will be needed.

Race and Origin

Nebraska's population is predominately white. In 1960, 1,374,764 or 97.4 per cent of the population was white. Of the 36,568 non-white composing the remaining 2.6 per cent of the population, 29,262 or 2.1 per cent of the total

population was Negro, 5,545 or 0.4 per cent was Indian, and only 905 or 0.1 per cent was Japanese. All other races in total composed less than 0.1 per cent.

Racial population composition has changed very little over the years. The percentage of whites has varied only from a high of 99.1 per cent in 1900 to the 1960 low of 97.4 per cent. Negroes, the largest group in the non-white segment, have shown the greatest increase. Most of this occurred from 1950 to 1960 when this portion of the population increased from 19,234 to 29,262, or an increase of 52 per cent. The small Indian population has remained relatively stable through the years, although it did show the fastest rate of growth of any segment from 1950 to 1960 by registering a 71 per cent increase. Approximately 86 per cent of the Negro population is located in Omaha. Approximately 88 per cent of the Indian population is in nine counties with the greatest concentration in Thurston County of northeast Nebraska.

In any instance the non-white portion of the population is substantial only in certain localized areas. While non-white rate of participation is lower in water sports, camping and hiking, it is higher than the rates for whites in playing games and walking. It is probable that such differences are the result of low incomes plus lack of opportunity.

The population of Nebraska contains a relatively large percentage of foreign stock. In 1960 there were over 258,000 people or 18 per cent of the population so classified. Over nine-tenths of the foreign stock in Nebraska are of European origin, with the German population being much greater than any of the others. There are 24 counties in the State in which over 20 per cent of the population is foreign stock.[5] In rural communities especially, old world customs and philosophies have carried over for several generations. One of the beliefs of many such groups has been that work is the only worthwhile activity. Any recreational activity condoned, quite probably was oriented to the customs and beliefs of the nationality involved. In recent years this work ethic has been replaced with an attitude more tolerant of recreation. This trend will continue. New generations have and will continue to demand recreation.

Occupational Composition

The three broad occupational categories used by the Nebraska Department of Labor in compiling statistical information on the state's labor force are: Agricultural, which includes all hired agricultural workers, farm owners, operators and unpaid family workers; Non-Agricultural Wage and Salary, including all full and part-time workers in non-farm business that are paid a salary or wage; and Other Non-Agricultural, including proprietors, self-employed and domestic workers in private households.

The main change in the composition of Nebraska's labor force in the last ten years has been the continuation of the shift out of agricultural employment and into the non-agricultural wage and salary category, Table 6.5.

---

[5]Searcy, N.D., and A.R. Longwell. 1964. Nebraska Atlas. Nebraska Atlas Publishing Company, Kearney.

Table 6.5. Nebraska labor force breakdown.*

	Total 1956	% of Labor Force 1956	Total 1966	% of Labor Force 1966	% Total Change 1956 to 1966
Total Labor Force	611,000	--	641,100	--	+ 4.9
Agricultural	160,750	26.3	121,000	18.9	- 24.8
Non-agricultural Wage and Salary	356,650	58.4	431,900	67.4	+ 21.1
Other Non-agricultural	74,900	12.2	71,500	11.1	- 4.5
Unemployed	18,500	3.0	16,600	2.6	- 9.0

*Source: Nebraska Department of Labor.

The significant factor to be noted is that farm workers, who exert relatively low demand for outdoor recreation, are being replaced in the work force by non-agricultural wage and salary earners, a high demand group. As the trend continues, demand for outdoor recreation will increase.

Another thought to be considered is that people remaining in the farming business will be a different type of farmer than previously known. They will be of a higher educational level, will have higher income, and will have sound financial backing. Mechanization and improved technology will provide the farm manager with more leisure time that can be spent on recreational pursuits. Thus, the rate of participation and relative demand of the rural segment for outdoor recreation will probably increase.

Education

Nebraskans have received more education than the average U.S. citizen. Only 35 per cent of the state's population have less than a ninth grade education as opposed to 37 per cent for the U.S.[6] Only 3.6 per cent of Nebraska's adult population are illiterate as compared to 8.3 per cent for the Nation. Only five states possess lower illiteracy percentages. Median school years completed for Nebraska's population is 11.6 compared to 10.8 for the Nation. Figure 6.23 shows counties which have the largest proportion of high school graduates and Figure 6.24 shows the distribution of median years of schooling by counties.

All evidence points toward even higher educational levels in the State in the future. Considerable emphasis has been placed on the upgrading and expansion of educational facilities in recent years. Since people of higher education tend to participate more in outdoor recreation, it appears that demand will be further intensified.

---

[6] Ibid.

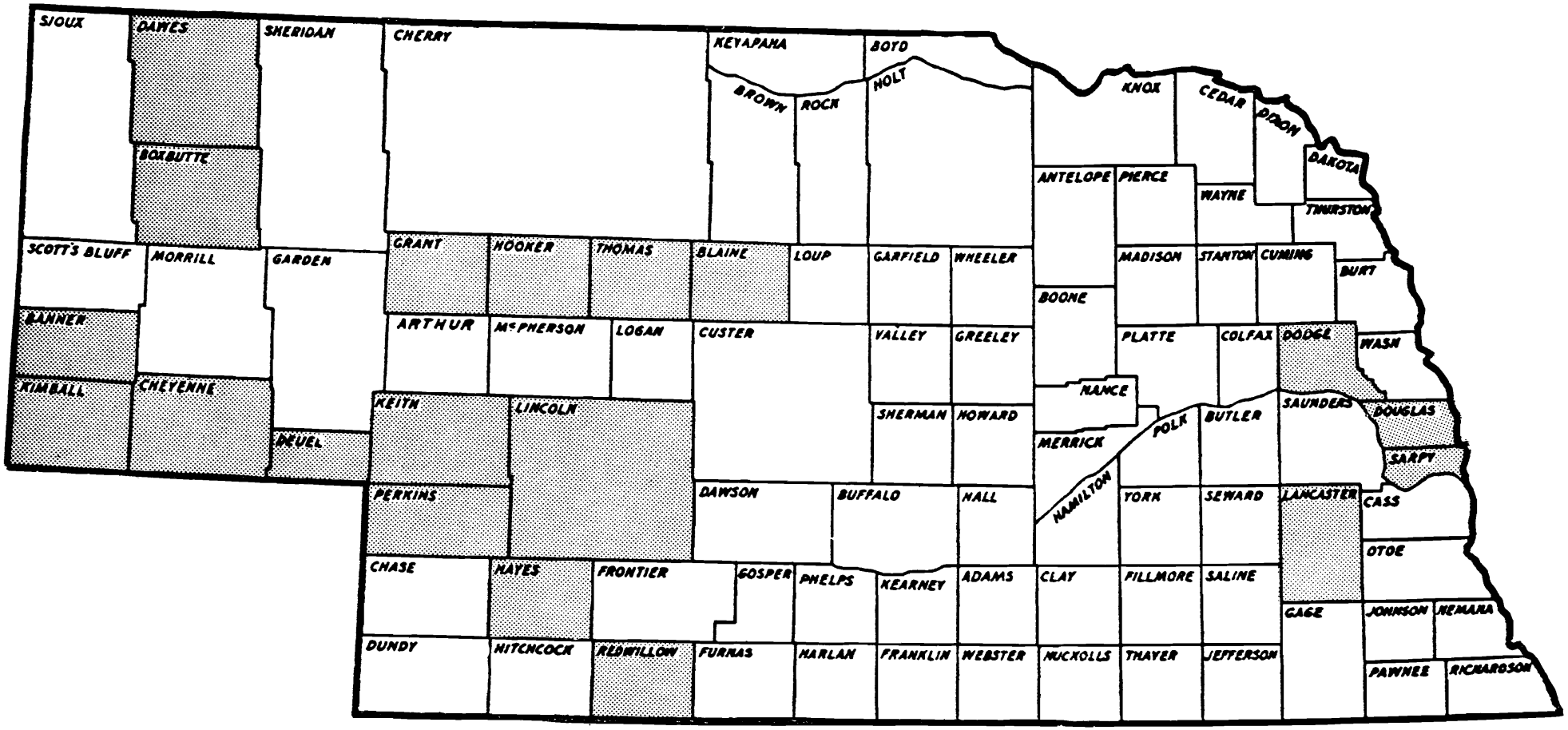


Figure 6.23. Counties with largest proportion of high school graduates. In 1960 47 per cent of Nebraska residents had completed High School or more.

indicates the 19 counties having the largest proportion of high school graduates. This applies to persons 25 years of age or older.

Source: Preliminary Report - State Planning Inventory, prepared by the Division of Nebraska Resources, Dec., 1966.

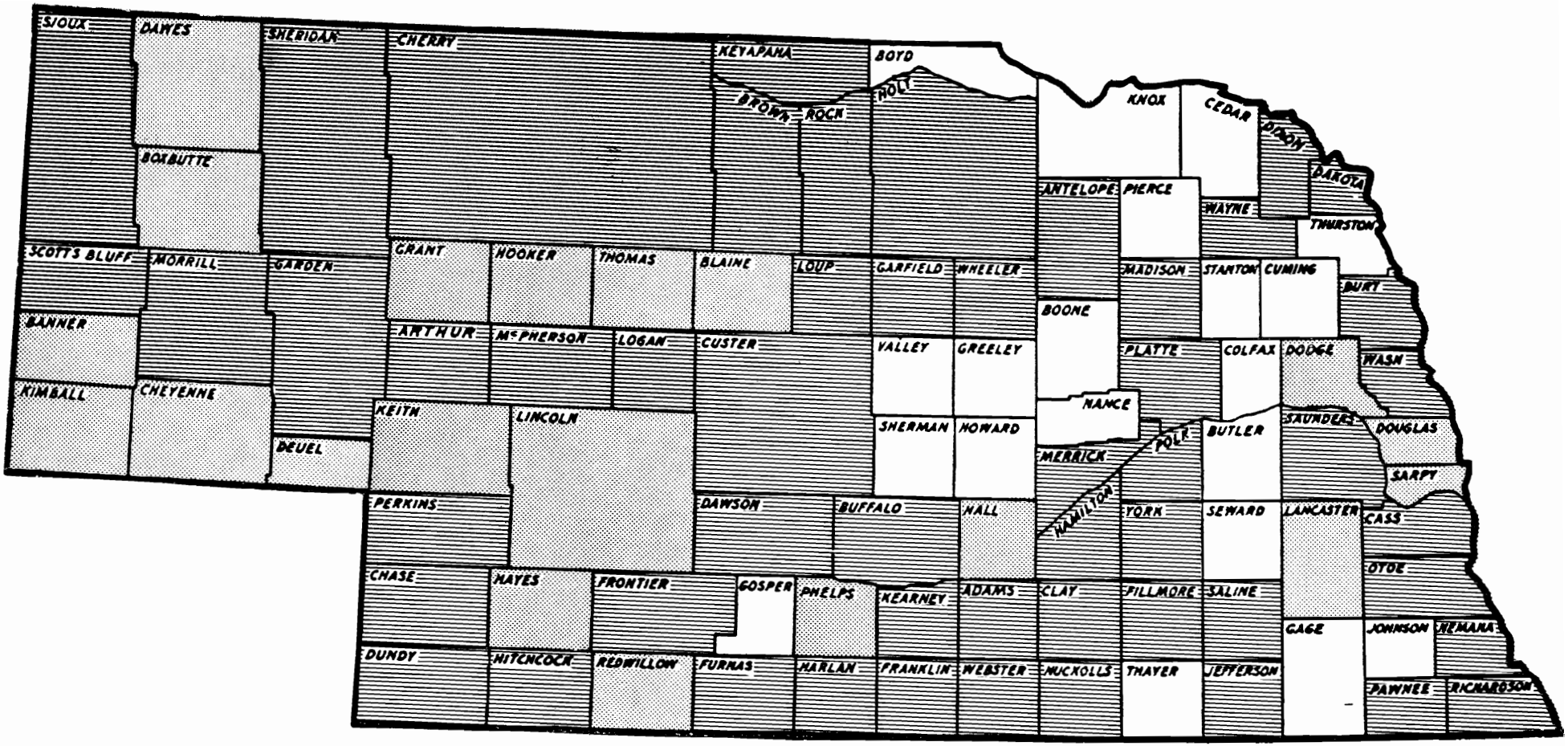


Figure 6.24. Median schooling completed by county.

- 20 counties with median schooling of more than 11.6 years
- 53 counties with median schooling of 10 to 11.6 years
- 20 counties with median schooling of less than 10 years

Note: The median years of schooling for Nebraskans is 11.6 years.

Source: Preliminary Report - State Planning Inventory, prepared by the Division of Nebraska Resources, Dec., 1966.

Marital Status

Families prefer to enjoy outdoor recreation together, but tend to engage in different types of recreational activities. In 1960, 69.8 per cent of the state's males and 67.4 per cent of the females over 14 years were married. This compares with the 59.9 per cent of the males and 60.8 per cent of females that were married in 1940. Although family sizes are not increasing; the percentage of our population that is married certainly is. Over 48 per cent of Nebraska's 1960 population was married as opposed to 46 per cent in 1940. We will have smaller families but more of them.

In view of this trend, special consideration should be given to the development of "family-type" outdoor recreation. Families with youth take part in one and one-half times as many kinds of outdoor recreation activities as do adults without children. It is apparent that joint family play activities are fast substituting for joint family work activities.[7] "Family" recreationists demand developments and facilities that the predominately male participant of the past did not require.

Place of Residence

Suburbanites are more active than city residents in outdoor recreation participation. In activities such as swimming, driving for pleasure and picnicking, they participate more than any other group. Rural people are the most active group in such sports as hunting, fishing and camping, undoubtedly because of greater opportunity.[8]

At the present time rural people constitute about 40 per cent of the state population, while suburban people make up only five per cent. However, suburbanites are the fastest growing segment of the population. From 1960 to 1966 the number of people residing in suburban areas (urban fringe) increased by over 180 per cent. At the same time rural residents decreased by about 3.5 per cent.[9]

Lincoln and Omaha will increase greatly by 1975, according to the July, 1967 monthly report of the National Planning Association. By 1975 populations in these cities are expected to reach 240,000 and 610,000 respectively. These estimates indicate that Lincoln's population will grow at an annual rate of 2.9 per cent and that Omaha's will grow at an annual rate of 1.8 per cent between now and 1975. It was also estimated that personal income will grow by 5.1 per cent and 4.4 per cent in these cities, respectively, for the same period. It should be noted that these population growth estimates are substantially higher than those developed in other parts of this plan.

---

[7]Walsh, Richard G. 1960. Changing Our Minds About Recreational Use of Rural Land and Water Resources. Nebraska Farm and Ranch Economics No. 152. Extension Service, University of Nebraska.

[8]Outdoor Recreation Resources Review Commission. 1962. Outdoor Recreation for America. U.S. Government Printing Office. Washington, D.C.

[9]1960 U.S. Census Reports and Nebraska Bureau of Business Research data.

As the highly active suburban segment continues to constitute a greater proportion of the population, demand for outdoor recreation will experience an increase. The present high demand for swimming, picnicking and other day-use facilities in or near the suburban areas of the state's larger cities will be greatly accelerated.

Non-resident Population

Very little is known about the characteristics of Nebraska's non-resident or tourist population. Tourism in the State was practically non-existent eight years ago, and recent development of the state's many potential tourist attractions has not yet progressed to the point that it can test the full extent of potential non-resident demand.

After its completion, the major United States transcontinental highway, Interstate "80", will extend across the length of Nebraska through the Platte Valley. One-half of the nation's population lives in the area east of Omaha. Interstate "80" and its connecting highways will serve as the best and most direct route from the populous east to the vacation lands in the west.

Nebraska is the first western state on this transcontinental highway with ample space, scenery, wildlife, and western life and history to attract and hold the eastern tourist. Recreational water is a vacationland essential (witness Minnesota, Wisconsin, Michigan, Florida, etc.). Nebraska has the greatest water resource on this transcontinental highway and development of this water resource is now beginning. During the next ten years about 30 major reservoirs, as well as a much larger number of smaller impoundments, will have been completed or development begun.

The effect of these non-residents traveling on Interstate "80" is already being felt throughout the Platte River Valley. Traffic flow data from the Nebraska highway department suggest that in addition to much heavier overall traffic on Interstate "80", the proportion of out-of-state travelers is also higher along this route. For example, car counts at Elm Creek Station near Lexington, for 1965 and 1966 showed that over 30 per cent of the traffic was non-resident while a similar car count at a station on U.S. 20 (east-west) near O'Neill showed that less than 25 per cent of the vehicles were from out-of-state. Car counts at a station in Webster County along one of the main north-south routes (U.S. 81) showed only 17 per cent of the traffic was by out-of-state cars.

Based on the 1966 average daily traffic flow of 4,210 cars per day on Interstate "80" at the Elm Creek Station, it is estimated that approximately 1,265 non-resident vehicles carrying over 4,000 passengers pass through this area daily on Interstate "80". Traffic will undoubtedly be greater when construction of this highway has been completed.

The primary attraction that Nebraska has held for non-residents in the past has been its topnotch hunting and fishing. This is reflected in the license sales over the past 24 years, Figures 6.25 and 6.26. Number of non-resident hunters, from a low of 1,355 in 1943, increased sharply to almost 12,900 in 1946 and dropped even more sharply to 1,578 in 1947. From 1947 to 1957 minor

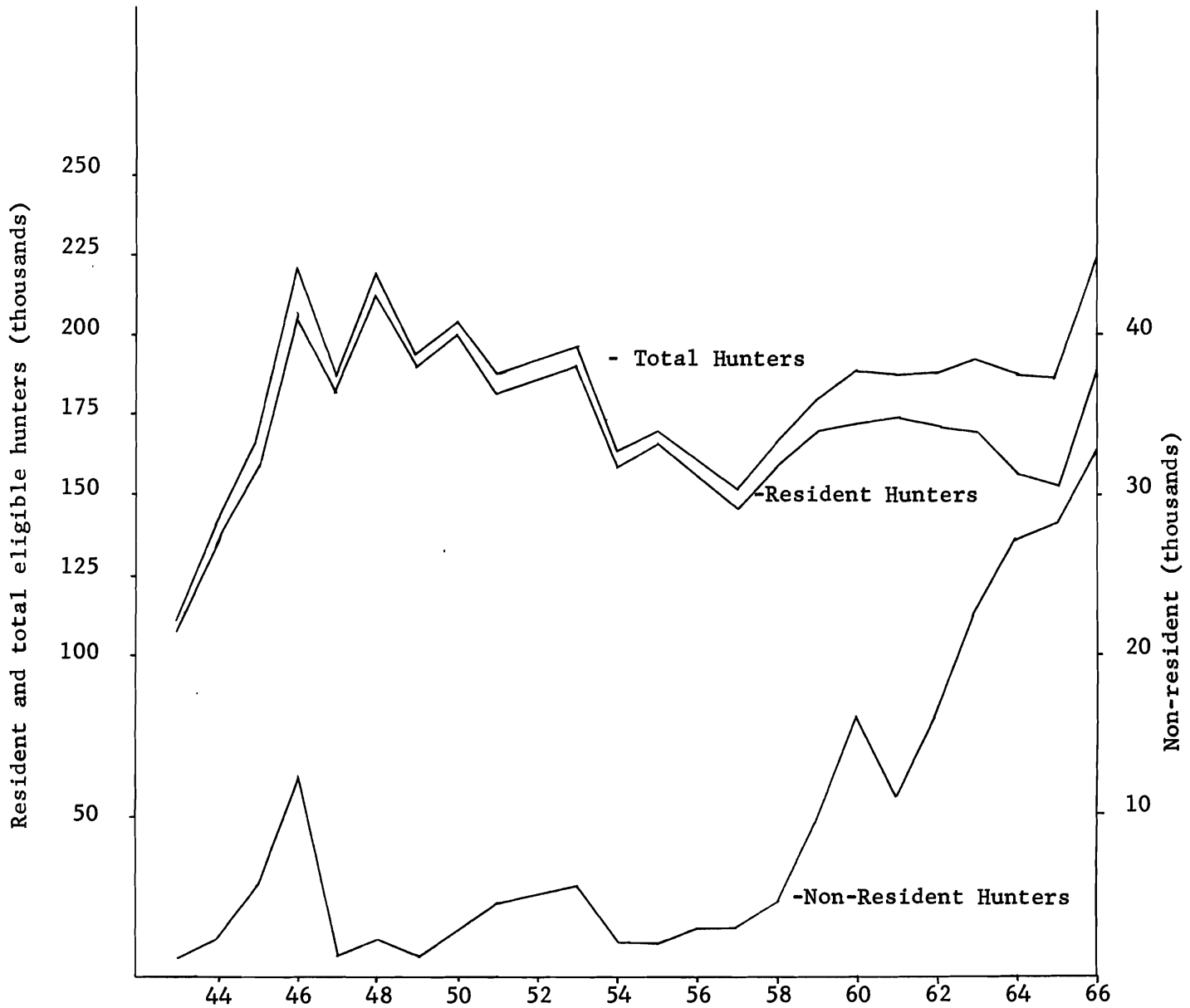


Figure 6.25. Trends in numbers of hunters based on annual license sales, 1943-1966.

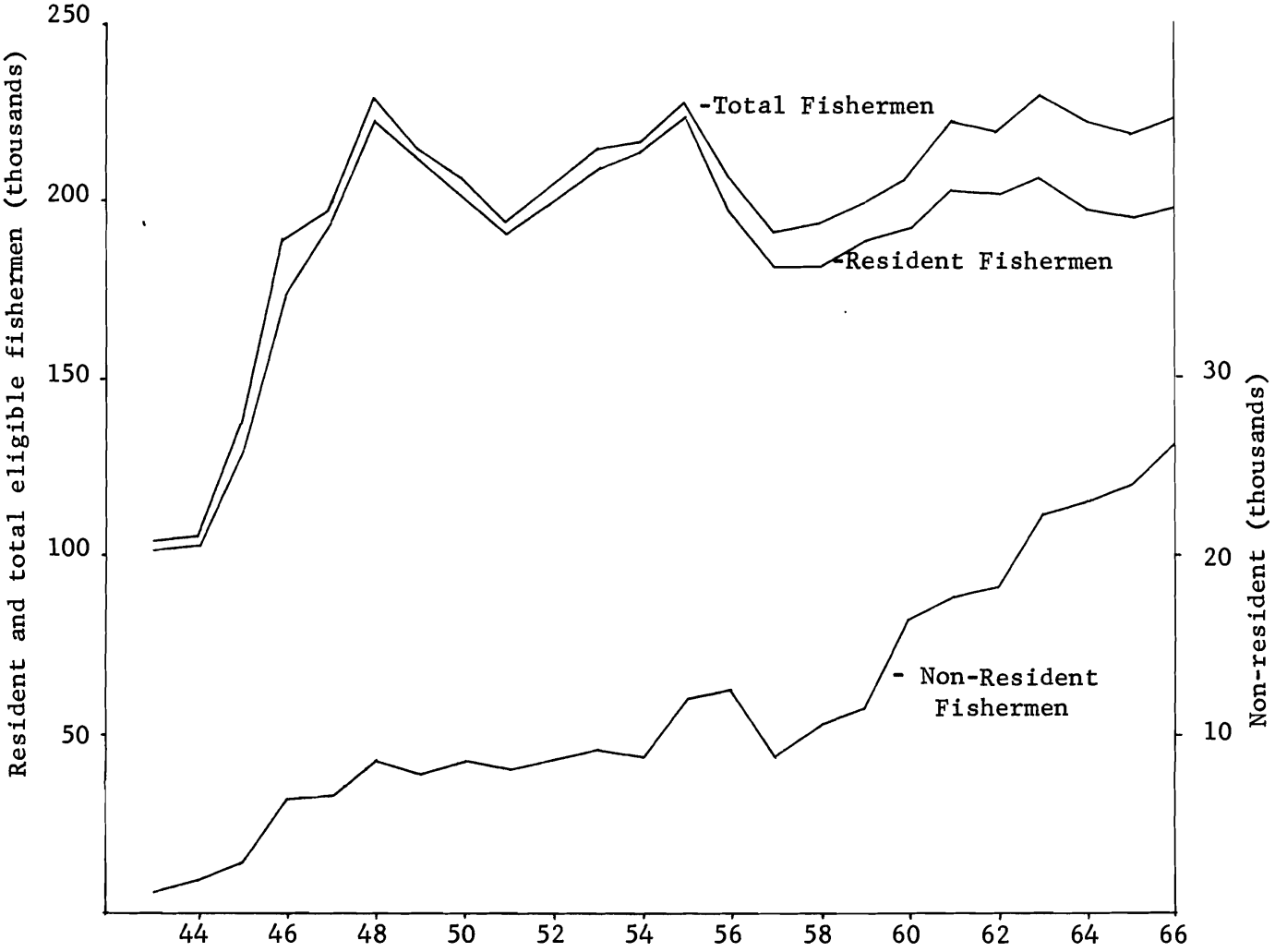


Figure 6.26. Trends in number of fishermen based on annual license sales, 1943-1966.

variations occurred. From 1958 to 1966 non-resident hunters increased by six-fold to an all time high of 33,660 in 1966. Non-resident fishermen have closely paralleled the hunters in numbers, but the trend has been more stable. Non-resident fishermen steadily increased from 1,507 in 1943 to 26,233 in 1966. Based on license sales, non-resident hunters increased from 1.1 per cent of the total hunter population in 1943 to 15.1 per cent in 1966. During the same period, non-resident fishermen increased from 1.4 per cent of total licensed fishermen in 1943, to 11.7 per cent in 1966. Much of the non-resident fishing pressure is probably coming from residents of neighboring states who are closer to reservoirs and rivers located in Nebraska than they are to waters in their own state. Non-resident hunters come from states all over the Nation to hunt the ring-necked pheasant.

There are also indications that tourism attractions other than hunting and fishing are becoming more popular. Recent state park developments have drawn the interest of non-residents. Those planned in the future will attract many more.

Visitation data from an on-site survey conducted during the summer of 1967 by the Nebraska Game and Parks Commission indicate that about 17 per cent of the visitors at the 15 state parks and reservoirs studied were non-residents.

Although the future extent of non-resident demand and use is not fully measurable, it is evident that non-residents will play a much larger role in the utilization of Nebraska's recreational resources in the decades ahead. Burgeoning eastern populations will continue to force people westward, seeking room in which to play, things to see and do, and places to spend vacations. Interstate "80" will carry them. Development of historical and recreational assets throughout Nebraska will entice and hold them.

ECONOMIC GROWTH

Economic growth is generally measured in terms of jobs, money and people. The total population of the State is increasing, but at a rate less than the national average. Total employment is also increasing, but at a lesser rate than the national average. Total employment in Nebraska increased only five per cent from 1957 to 1967.[10]

While the economy of the State is growing, it has been a slow growth. A discussion of trends and income levels in various segments of the economy follows.

Business Indicators

In the period 1957 to 1967 retail trade increased from $1.7 billion to approximately $2.5 billion, or an increase of 47 per cent. At the same time wholesale trade in the State increased 91 per cent, from $2.1 billion to $4.0 billion.[11]

---

[10] Nebraska Almanac. Lincoln Sunday Journal and Star. January 28, 1968. Lincoln, Nebraska.

[11] *Ibid.*

Bank deposits in Nebraska have registered a 51 per cent increase from 1957 to 1967, while bank loans have increased 162 per cent from $572 million to $1.5 billion. Assets of savings and loan companies have increased 172 per cent and assets of Nebraska insurance companies have increased 162 per cent.[12] Lending policies have become more liberal with great strides being made in the area of agricultural loans. A large insurance industry is developing in the State.

Oil and gas production has decreased by 32 per cent from 1957 to 1967. The total number of wells decreased from 2,221 to 1,500 or 32 per cent in the five year period, 1962 to 1967.[13] The boom in the oil industry in western Nebraska contributed greatly to the growth of the economy of that region during the 1950's, however, the boom seems to be over. Future dependence upon this industry to provide further economic growth for this area may only reflect wishful thinking.

Agriculture, Nebraska's largest business, is growing in strength as well as volume. Although the portion of the population involved in farming is decreasing, complex shifts within this field are developing a more vital and sophisticated agri-business industry. While the number of farms is declining, the capital investment per acre is increasing. Improved technology will greatly increase production. Consolidation of smaller farms into larger operations will result in increased income per farm. The increase in irrigation in the State has had a healthy impact. Population losses have been interrupted in irrigated areas in recent years. Net income per farm increased by 173 per cent, from $2,144 per farm in 1957 to $5,850 per farm in 1967.[14]

The sale of all farm products increased from $0.9 billion in 1957 to $1.7 billion in 1967.[15] Dominant land use of rural areas according to type of farm income is shown in Figure 6.27.

Nebraska's gross product has increased from $2.66 billion in 1947 to $3.48 billion in 1957.[16] It is estimated that gross product in 1976 will be $6.46 billion.

Gross product trends, however, are analagous to the state's population trends, in that the increase has been at a rate less than the national average. In 1947 Nebraska's gross product was 0.9 per cent of the United States gross national product. It dropped to 0.8 per cent of the total in 1957, and will only constitute an estimated 0.6 per cent of the total in 1976.[17]

---

[12] Ibid.

[13] Ibid.

[14] Ibid.

[15] Ibid.

[16] Outdoor Recreation Resources Review Commission. 1962. Projections to the Years 1976 and 2000: Economic Growth, Population, Labor Force and Leisure, and Transportation. U.S. Government Printing Office, Washington, D.C. Report No. 23. Pages 419-421.

[17] Ibid.

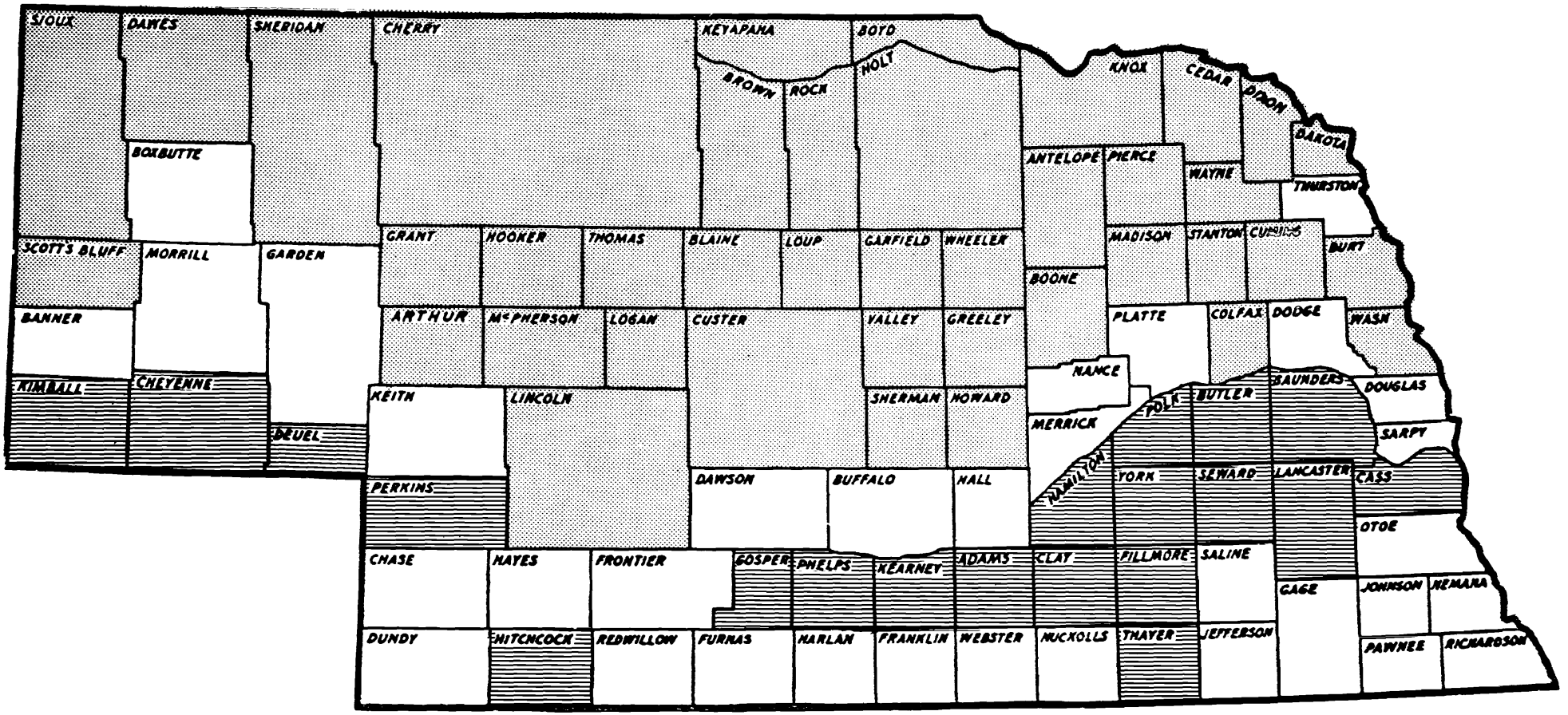


Figure 6.27. Dominant land use of rural areas according to type of farm income.

Livestock
Cash Grain
Mixed

Source: Nebraska Atlas by N. D. Searly and A. R. Longwell and supplemental data from annual reports of Nebraska Agricultural Statistics.

Income Levels

Income levels are increasing in the State. Per capita income increased from $1,818 to $3,073 or an increase of 69 per cent from 1957 to 1967. Gross income per farm increased by 135 per cent and net income per farm increased by 173 per cent during the same period.[18] It is estimated that Nebraska's disposable personal income will grow from the $2.48 billion recorded in 1957 to $4.58 billion by 1976, an increase of 85 per cent.[19] Again, as in other trends, the rate of increase will probably be slightly less than the national average.

Family income is the most meaningful measure to use when discussing recreational demand. As of the last census, median family income in Nebraska was $4,862.[20] Income varied considerably from county to county, with a range of over $3,700. The highest income counties were the urban counties of Douglas, Sarpy and Lancaster, and the oil industry counties of Kimball and Cheyenne. The counties with lowest family incomes were predominately rural.

The number of families with incomes under $3,000 per year is getting smaller. In 1960 only one-half as many families made less than $3,000 as in 1950. Studies show that participation in outdoor recreation goes up as income does, and that the jump is sharpest at about the $3,000 per year mark.[21] As annual family income increases from $3,000 to $4,500, participation in outdoor recreation increases by 80 per cent.[22] On a straight line basis this would be a five per cent increase in recreational demand for each $100 increment in income over the magic $3,000 per year figure.

It is recognized that over-all buying power does not increase in proportion to income, because of inflationary trends. However, the price of basic items of need such as food and clothing has not increased as rapidly as the luxury items. The additional "cost of living" quite often is the result of new family expenditures on luxuries such as T.V. set, eating out, or outdoor recreation; things that were not considered essential 10 years ago. Food, clothing and shelter are absolutely necessary. People have more of a choice in other expenditures. It appears that outdoor recreation fares well in the selection process.

Taking known trends into consideration, the demand for outdoor recreation by Nebraska residents will increase sharply with higher income.

In the final analysis the realization must be faced that the economy of Nebraska is still "agri-business" and will remain one for some time. Nebraska,

---

[18]Lincoln Sunday Journal and Star, loc. cit.

[19]Outdoor Recreation Resources Review Commission, loc. cit.

[20]Searcy and Longwell, loc. cit., page 33.

[21]Outdoor Recreation Resources Review Commission. 1962. Outdoor Recreation for America. U.S. Government Printing Office. Washington, D.C.

[22]Ibid., p. 215. Computed from data obtained from Appendix Table 7.

especially in the rural communities, faces an uphill struggle in attempts to attract new business based on industrial manufacturing. Recent studies on industrial expansion show that new industry develops in those areas that are already heavily industrialized.[23]

Manufacturing that uses raw agricultural products, industries supplying agricultural inputs, industries producing for local consumption and non-agricultural service industries such as medicine, education, finance, printing and publishing and insurance have the greatest potential for future growth in this state.

Last but certainly not least comes recreation, a booming industry, which is uniquely complementary to other forms of economic growth. In urban areas, developers will find recreational facilities a profitable use for both money and land -- increasing the value of and income from adjacent tracts by far more than its cost. There are areas in the State that have their greatest potential for economic growth and stability in the promotion and development of outdoor recreation and tourism. Farmers can capitalize on the recreational potential of their land to gain added income. Adequate outdoor recreational facilities are needed, not only to attract new industry and new people, but to hold our own.

LEISURE TIME

People continue to have more free time for recreation and the population of Nebraska is no exception. This trend is due to shorter work weeks, more paid vacation time, and earlier retirement ages.

In the North Central Census Region, which includes Nebraska, people worked an average of 39 hours per week in 1960. Estimates by ORRRC were that the average work week in this region will decrease to 36 hours by 1976 and to 31 hours by the year 2000. Average paid vacation will increase from 1.6 weeks in 1960 to 2.4 weeks in 1976 and 3.3 weeks in the year 2000. From 1960 to the year 2000, the average work week will decrease by one-fifth and paid vacation will double.[24] Table 6.6 shows that proprietors and farmers have the longest work weeks, while wage earners have the shortest. Farmers also obtain fewer paid vacations, and observe fewer holidays.

The fact that farmers, who presently comprise about 19 per cent of Nebraska's work force, are rapidly declining in numbers, while wage earners are increasing, further intensifies recreational demand in the State. (This realignment of occupation and the consequent shift in place of residence may also result in some shifts in demand between various activities, i.e. a shift away from hunting and fishing to water-skiing, etc.)

People are also retiring at younger ages. Again, the decrease in number of farmers will result in a magnified effect on demand for outdoor recreation

---

[23]Wallace, L.T., and V.W. Ruttan. 1962. Area Development and Industrial Decentralization Proceedings of a Conference on Area Development. University of Georgia. page 194

[24]Outdoor Recreation Resources Review Commission. Report No. 23. loc. cit., Table B-20, page 68.

Table 6.6. Average work week, paid vacation and number of holidays by major occupational groups.

Major Occupational Group	Work Week Paid 1960[1] (in hours)	Work Week Paid 1976[2] (in hours)	Work Week Worked 1960 (in hours)	Work Week Worked 1976 (in hours)	Average Paid Vacation 1960 (in weeks)	Average Paid Vacation 1976 (in weeks)	Average No. Holidays 1960 (in days)	Average No. Holidays 1976 (in days)
Total all groups	41.5	39.4	38.5	35.4	2.0	2.8	6.3	8.5
Professional	43.0	40.4	38.5	35.5	2.8	3.8	8.4	11.2
Managerial	52.2	49.1	47.4	43.8	2.9	3.2	7.6	8.3
Clerical workers	39.1	36.7	36.0	33.0	2.0	3.0	7.0	10.0
Sales workers	38.8	36.5	36.6	33.6	1.7	2.5	5.3	7.5
Craftsmen	42.0	39.5	38.9	35.9	2.1	2.8	6.3	8.3
Operatives	40.6	38.2	38.2	35.0	1.9	2.7	6.0	8.1
Service workers	35.4	33.3	35.0	31.0	1.3	2.4	4.2	7.3
Farmers	47.0	43.8	44.5	41.0	.7	.8	3.9	4.5
Laborers	35.1	33.0	34.2	31.4	1.4	2.2	5.3	8.0

[1] From table B-28 ORRRC Report #23

[2] From table B-15 ORRRC Report #23

(1976 estimate is a mechanical projection from past records).

since farmers tend to have high retirement ages.

Commuting time is not as significant in Nebraska as in more populous states. Even in the larger cities of Omaha and Lincoln the average commuter spends less than one hour per day in travel to and from work. As populations of cities and towns increase and new labor markets are created, more people will commute. However, increased commuting distances will probably be offset considerably by improved highway systems.

The trends shown point toward a considerable increase in leisure time for the people of the State, which will contribute greatly toward growth in outdoor recreational demand. The rural to urban shift will add to the impact.

MOBILITY

Travel capabilities in the State are at an all time high and are rapidly improving.

Transportation Picture

Nebraska contains over 103,300 miles of roads, of which five per cent are municipal, 60 per cent are surfaced and 35 per cent are non-surfaced. At present, 334 miles of the 480-mile Nebraska segment of Interstate "80" have been completed.[25]

Although five railroads with total mileage of 5,600[26] miles are located in Nebraska, only two companies are major passenger carriers (Chicago, Burlington and Quincy; and Union Pacific). Travel connections are generally good east and west, but north and south passenger service is lacking. Much of the northern one-half of the State is not served by a passenger-carrying railroad. Rail service in Nebraska is decreasing and is likely to decrease even more during the next five to ten years.

Commercial airlines are assuming a more important role in Nebraska's transportation picture. Six airlines serve Nebraska, with Frontier serving seven cities within the State. From 1957 to 1967 airline route mileage increased by 277 per cent, from 777 miles to 2,931 miles.[27] Commercial passengers transported increased from 392,000 in 1962 to over 662,000 in 1966. Airlines are helping to bring eastern and western Nebraska closer together. Private planes are also contributing to increased mobility in the State. In 1966 there were 1,222 private aircraft and 4,821 registered pilots in the State.[28]

---

[25]Data obtained from the Nebraska Department of Roads.

[26]Nebraska Almanac, loc. cit.

[27]Nebraska Almanac, loc. cit.

[28]Data obtained from the Nebraska Department of Aeronautics.

Mobility Trends

Automobile transportation is by far the most important mode of travel, especially for outdoor recreational purposes. Therefore, trends in mobility as discussed here will center around number of vehicles and automobile traffic flows.

Passenger car registration for the period 1957 to 1967 increased from 503,281 to 641,000 or by 27 per cent. Total vehicle registration during this same period increased from 734,000 to 995,000 or an increase of 36 per cent. Passenger cars per 1,000 people increased from 350 in 1957 to 447 in 1967, indicating improved mobility for a larger portion of the state's population.[29]

Traffic flow varies considerably in Nebraska, but over-all flow has been increasing greatly. In 1967 traffic varied from an average of about 60 vehicles per 24 hours on some sandhill roads of north central Nebraska to nearly 40,000 vehicles per 24 hours in some areas around Omaha. Traffic flow on Interstate "80", Nebraska's major highway, varied from an average of about 4,000 vehicles per 24 hours near North Platte to about 40,000 vehicles per 24 hours near Omaha.[30]

Interstate "80" when completed, will considerably reduce traffic on all parallel routes such as U.S. 30. Completed segments have already had an effect. For example, the stretch of U.S. 30 between Kearney and Lexington averaged about 5,400 vehicles per 24 hours in 1962 as compared to about 1,400 in 1966.

Traffic flow data for the years 1956 through 1966, obtained from the Nebraska State Highway Department, point out some interesting trends. Data collected from representative stations on Nebraska highways showed an over-all increase of almost 33 per cent in traffic flow during this period. Local traffic increased by 45 per cent, out-of-county traffic increased by 24 per cent and non-resident traffic increased by 19.5 per cent.

Check stations located on major north-south highways showed a total increase of 15 per cent in non-resident traffic flow. Similar check stations on east-west highways showed an increase in non-resident traffic flow of 21 per cent, primarily from increased non-resident traffic flow on Interstate "80".

The full impact of this increased mobility has not yet been felt. The populous eastern portion of the State will be drawn closer to the spacious land areas of the north and west. Completion of Interstate "80" will help to accomplish this. East-west travel time will be reduced as much as three-quarters of an hour per hundred miles. In the process the great recreational potential of central and western Nebraska will be revealed to residents and tourists alike. Other areas of the State, relatively unknown but possessing considerable quality of recreation and history, will be "discovered" by the public. The patterns and intensities of outdoor recreational demand will be modified accordingly.

---

[29]Nebraska Almanac, loc. cit.

[30]Data obtained from the Nebraska Department of Roads.

PEOPLE'S INTERESTS

Although there is an increase in over-all desire for outdoor recreation in Nebraska just as there is in the rest of the Nation, the recreational habits and wants of the state's residents and visitors are somewhat different. Much of this is probably due to a variance in population characteristics as compared to those of other states. As previously mentioned, differences in such characteristics as age, sex, occupation, education and income affect demand. However, availability of a given type of recreation also has a great effect. Participation cannot occur unless there is opportunity. If urban people do not engage in hunting and fishing as much as rural people, this does not necessarily mean that they wouldn't do so if they had the same opportunities. Likewise, rural people might swim more if facilities were available.

This interaction of supply and demand has been dramatically illustrated on several occasions in recent years. The Two Rivers State Recreation Area near Omaha has received intensive use for fishing, as well as other activities, most of which has been by people from Omaha who previously did not have ready opportunity to participate prior to the development. Construction of the several Salt Creek Reservoirs near Lincoln has resulted in a big increase in boating activity by area residents. Sail boating, practically unheard of in past years, is gaining impetus.

On the other hand, expressions of interest in given activities do not necessarily mean that these "interests" will be converted into participation. Certain types of adventuresome activities catch the imagination of persons who may have engaged in them only a few times or not at all. Even though opportunity might be provided, some of these people may not participate or would not continue to participate, after having experienced the activity and found it not to their liking. Habit is another factor which strongly affects choices of recreational activities. If people have fished and picnicked in their spare time for years, they will probably continue to do so, despite the construction of a new tennis court or golf course in their community.

The reservations outlined above should not be construed as a rejection of the concept for estimating recreational demand which is outlined in the ORRRC Reports and as used in this plan, since that concept appears to be the best available means by which quantitative demand estimates can be made. However, since the limitations of such estimates cannot be completely ignored, additional information must be sought to learn as much as possible about potential demand. The following discussion of activity participation and expressed preferences of Nebraskans should give added insight into the nature and magnitude of demand for various recreational activities in the State.

Activity Participation

Hunting and fishing are historically popular activities with Nebraskans. In 1966, 188,493 resident hunters, or 18 per cent of the population over 16 years of age were licensed. The same year licenses were sold to 198,606 resident fishermen or 19 per cent of the state's population over 16. Since hunters are predominately male, it would be safe to say that over 35 per cent of Nebraska's male population over 16 purchased a hunting and/or fishing license in 1966. Most

of these used it at least once. Although most anglers are male, fishing demonstrates a considerable trend toward family participation. During the past 20 years resident hunting and fishing license sales have shown a slight downward trend. However, since 1956 sales in both categories have shown a slightly upward but erratic trend.

Precise records on resident hunters and fishermen are not available since persons under 16 years of age, World War I veterans, and farmers hunting on their own lands are no longer required to purchase license. Thus, a substantial increase in hunting and fishing occasions may have occurred during the past 10 years after these exemptions on license requirements were made without being recorded.

Non-resident hunting and fishing has increased significantly during the past 10 years. License sales to out-state hunters have increased sharply since 1958. License sales to visiting fishermen have also shown an upward trend, although at a less dramatic pace.

In any event hunting and fishing is an integral part of Nebraska's recreational picture for residents and non-residents alike. They are high quality activities, for which opportunities are being steadily improved, although not always for the same species of fish and game. Changing land use and new impoundments create modified or new environments and hence, change fish and game populations.

Boating has grown by leaps and bounds in Nebraska. In 1960, the first year for which data became available, 14,800 motorboats were registered in the State. By 1966, the number of motorboats registered had grown to 22,400, an increase of 51 per cent in six years, Figure 6.28. Counties near reservoirs also have more boat owners per capita than other counties, again illustrating the interaction of opportunity and demand expressed as participation. Lancaster and Gage Counties registered the greatest increase in boat owners during 1964 as a direct result of the increased boating opportunity offered by the Salt Creek Reservoirs completed at that time.

Visitation data provides additional insight into many aspects of outdoor recreational demand. As part of an on-going program to increase the available supply of relevant information needed for outdoor recreation planning, the Nebraska Game and Parks Commission conducted an on-site visitor survey at 15 selected recreational areas during the summer of 1967. The purpose of this survey was to determine: Which primary activities draw visitors to an area, what supplementary activities these visitors also participate in, the area of influence (distance traveled) for each area, and the general characteristics of visitors to these areas.

Visitors were interviewed as they left the area at three state parks and 12 water-based recreation areas. A total of 7,329 interviews were made, 2,452 at state parks and 4,877 at the reservoirs. These interviews represent a total of 24,613 people surveyed with an average of 3.36 people per group. Fishing, sightseeing, and the water based sports (swimming, boating and water-skiing) were the activities most often mentioned as the primary purpose for the visit to the 12 reservoirs surveyed, Table 6.7. The water sports, picnicking and camping

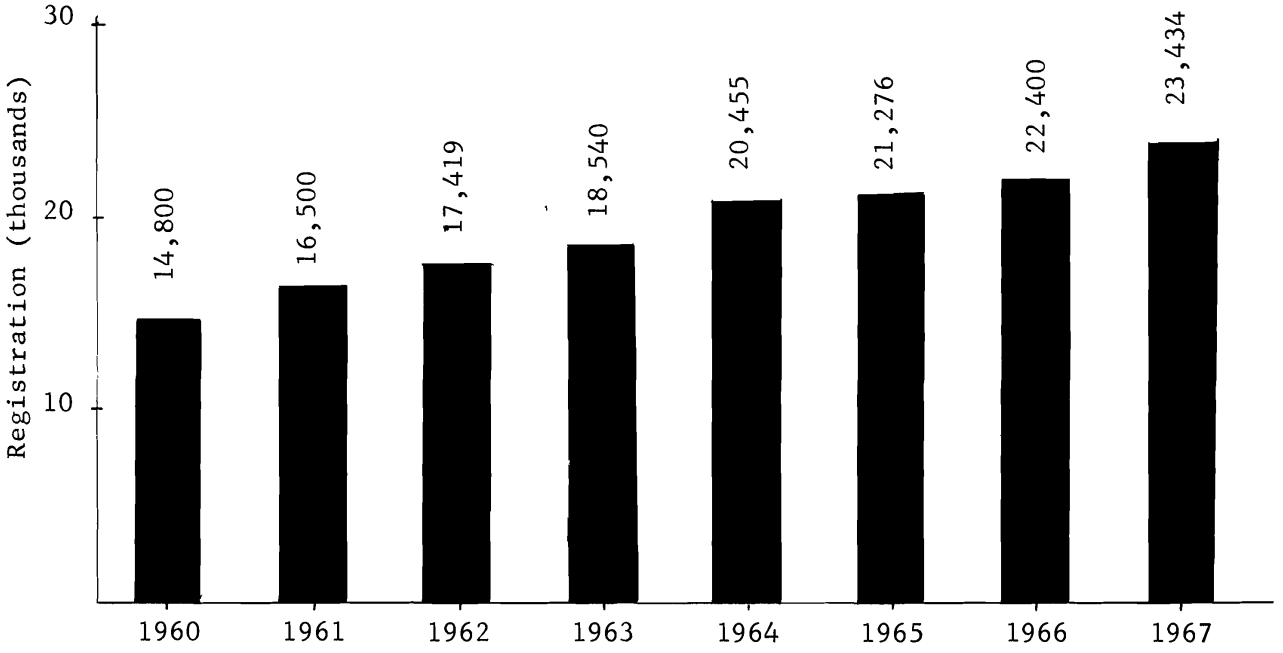


Figure 6.28. Motorboat registrations in Nebraska, 1960-1967.

Table 6.7. Participation in selected activities by parties interviewed at twelve selected Nebraska reservoirs surveyed during the summer of 1967.

Outdoor Recreation Activities	Primary Activity		Secondary Activity		Total	
	Number of Parties	Per cent of respondents indicating each as primary activity	Number of Parties	Per cent of respondents indicating each as secondary activity	Number of Parties	Per cent of respondents indicating each as primary and/or secondary activity
Fishing	1,416	29.0	410	8.4	1,826	37.4
Sightseeing	1,403	28.8	360	7.4	1,763	36.2
Swimming	572	11.7	563	11.6	1,135	23.3
Boating	393	8.1	616	12.6	1,009	20.7
Camping	326	6.7	439	9.0	765	15.7
Picnicking	316	6.5	505	10.4	821	16.8
Water-skiing	217	4.5	277	6.3	494	10.1
Hiking	13	0.3	50	1.0	63	1.3
Nature Study	5	0.1	14	0.3	19	0.4
Horseback Riding	0	0.0	1	*	1	*
Other	208	4.3	80	1.6	288	5.9
Totals	4,869	100.0	-	-	-	-

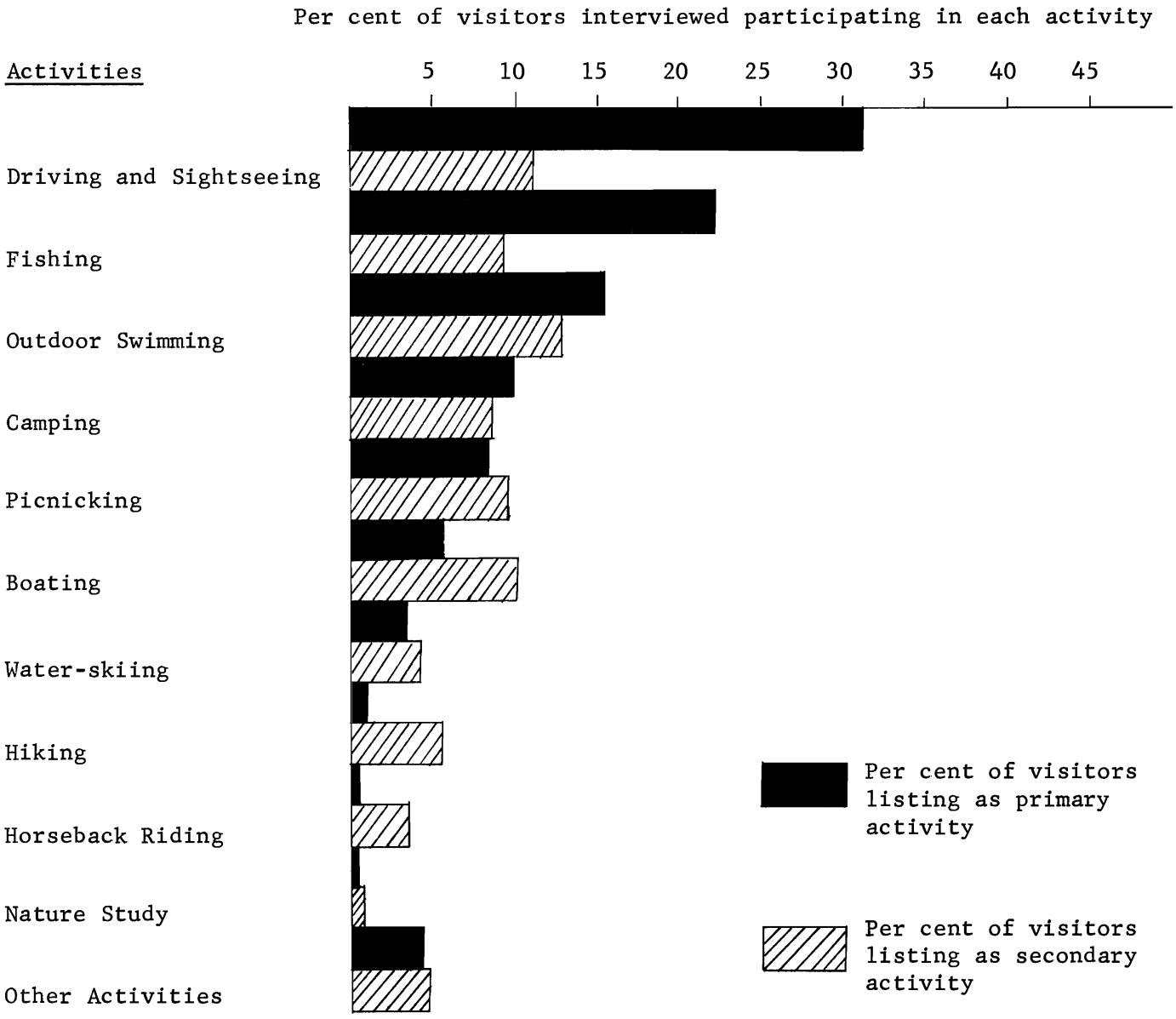


Figure 6.29. Per cent of participation by visitors interviewed at 15 recreational areas in various primary and secondary activities. Data from Nebraska Game and Parks Commission, on-site survey, 1967. Areas surveyed include 15 reservoirs and three major state parks.

Table 6.8. Participation in selected activities by parties interviewed at three Nebraska State Parks surveyed during the summer of 1967.

Outdoor Recreation Activities	Primary Activity		Secondary Activity		Total	
	Number of Parties	Per cent of respondents indicating each as primary activity	Number of Parties	Per cent of respondents indicating each as a secondary activity	Number of Parties	Per Cent of respondents indicating each as primary and/or secondary activity
Sightseeing	873	35.6	420	17.1	1,293	52.7
Swimming	553	22.5	361	14.7	914	37.3
Camping	379	15.5	132	5.4	511	20.8
Picnicking	260	10.6	165	6.7	425	17.3
Fishing	210	8.6	239	9.8	449	18.3
Hiking	49	2.0	327	13.3	376	15.3
Horseback Riding	17	0.7	233	9.5	250	10.2
Boating	14	0.6	101	4.1	115	4.7
Nature Study	5	0.2	31	1.3	36	1.5
Water-skiing	0	-	0	-	0	-
Other	90	3.7	97	4.0	187	7.6
Totals	2,450	100.0	-	-	-	-

were the major secondary activities in which these visitors also participated to supplement the recreation experience of the primary activity.

Visitors to the three state parks ranked primary activities quite differently than visitors to the reservoirs, reflecting the difference in the resources available to them at different areas. Sightseeing and outdoor swimming were ranked very high as primary purposes for visiting the state parks, Table 6.8. Camping and picnicking were also listed as primary activities by a substantial segment of the visitors. The main secondary activities were sightseeing, swimming, hiking, fishing and horseback riding.

A substantial portion of those rating sightseeing as the primary activity in both state parks and reservoir areas were highly casual users who were just passing through the areas as indicated in Table 6.11.

Age data indicates a larger proportion of visitation at state parks is made up of younger families, since the under 12 year old group and the young adult group, 25 to 44 years old, make up a greater percentage of visitors at parks than at the water-based recreational areas, Table 6.10. The median age of visitors to state parks, 19.7 years, is lower than the median age of visitors to the 12 reservoirs, 21.8 years.

Analysis of visitor group characteristics of those surveyed in the on-site survey show a high degree of family participation, and that family participation is greater at state parks than at the water-based recreational areas, Table 6.9.

Table 6.9. Visitor group characteristics at 15 recreational areas surveyed during the summer of 1967.

Type of Group	Per cent in each group at three state parks	Per cent in each group at the 12 reservoirs
Family	67.3	58.5
Friends	22.4	26.8
Individuals	10.3	17.7
Totals	100.0	100.0

A greater per cent of the visitors at state parks stayed on the area one day or more than at the reservoirs, Table 6.11. Twenty-eight per cent of those interviewed at state parks stayed overnight at least once compared to 19.5 per cent of those visitors interviewed at the 12 reservoirs. Over three-fourths of the over-night visitors interviewed at reservoirs camped out while 38 per cent of those at state parks chose to stay in cabins or lodges, Table 6.12.

On-site survey results confirmed the belief that most visitation occurs on weekends and that between 35 and 45 per cent of this visitation occurs on Sundays, the peak days. Relatively more visits occurred on weekends at the

reservoirs while park visitation was more evenly distributed throughout the week, Table 6.13.

Table 6.10. Age grouping of visitors interviewed at 15 recreational areas during the summer of 1967.

Age Group	Per cent in each group at three state parks	Per cent in each group at the 12 reservoirs
Under 12 years	31.7	25.4
12 to 24	26.0	29.3
25 to 44	26.2	23.7
45 to 64	13.1	16.3
65 and over	3.0	5.3
Totals	100.0	100.0

Table 6.11. Character of visit of persons interviewed during on-site survey at 15 recreational areas during the summer of 1967.

Length of Visit	Per cent in each group at three state parks	Per cent in each group at the 12 reservoirs
Just passing through	23.0	12.4
One day visit only	47.8	65.8
More than one day	29.2	21.8
Totals	100.0	100.0

Table 6.12. Type of accommodations used by visitors interviewed who stayed overnight at 15 recreational areas during the summer of 1967.

Type of Accommodations	Per cent in each group at three state parks	Per cent in each group at the 12 reservoirs
Camper or trailer	35.4	55.3
Tent camping	22.8	22.9
Cabin or lodge	27.7	15.3
Other	4.1	6.5
Totals	100.0	100.0

Table 6.13. Distribution of visitation by days in the week at 15 recreational areas surveyed during the summer of 1967.

Time of Visits	Per cent in each group at three state parks	Per cent in each group at the 12 reservoirs
Sundays	34.5	44.2
Saturdays	11.7	15.8
Weekdays	53.8	40.0
Totals	100.0	100.0

Expressed Interests

Some indication of favorite leisure activities of Nebraska's residents was obtained from secondary analysis of data from a study recently undertaken by the University of Nebraska.[31] A representative sample of 1,500 Nebraska adults, age 21 through 69, were asked to designate their one favorite leisure activity within all of the activities they have had opportunity to engage in. In general, adults seem to prefer informal activities with other people (friends and family). Exclusive of reading which was mentioned by 81 adults, 621 adults interviewed preferred informal activities with family and friends, as compared to 358 adults who preferred activities in which they participated alone -- a ratio of 1.7 to 1.

Regarding outdoor recreation, hunting and/or fishing was considered the favorite activity of 206 adults, while other outdoor recreation such as golf, tennis, swimming, boating, etc., were preferred by only 85 persons. Family camping, picnics, and family trips were favorites of 43 adults, and driving and sightseeing were favorite activities of only 29 people.

These data demonstrate the high esteem in which Nebraskans hold hunting and fishing, further emphasizing the high quality of these activities in the State. On the other hand such activities as driving and sightseeing, which are high in participation, were not often rated as favorites by the persons interviewed.

Participation in an activity cannot be viewed as the sole indicator of demand, especially if ample opportunities are not available for participation in this activity. Many forms of recreation are substitutes for each other; therefore, an increase in the supply for one type of activity may result in a decrease in the demand for other activities. On the other hand, some activities,

---

[31] Knox, Alan B., and A.H. Anderson. 1964. Living in Nebraska - A Report on Characteristics and Interests of Nebraska Adults. Adult Education Research, University of Nebraska.

such as picnicking, camping and boating, are often complementary to other activities. For example, an increase in the supply of fishing opportunities often results in an increased demand for camping, boating and picnicking occasions.

Recreational habits of people may be as meaningful in estimating demand as expressed interests. These habits are normally based upon the available supply of recreational facilities which gives added support to the idea that supply has a significant effect upon demand. Thus, the use of quantitative demand projections based upon expressed preferences must be tempered by recognition of the role which the available supply plays in the determination of demand for outdoor recreation.

More refined demand analysis techniques will eventually be developed to increase the accuracy of demand predictions for each of the various outdoor recreational activities. Degrees of substitutibility and complementarity between recreational activities as well as interrelationships between recreational activities and alternative uses of time and money need to be studied more thoroughly to achieve an even better understanding of the nature and magnitude of demand. More accurate information can result in increased efficiency in the allocation of scarce resources.

It may be that an outdoor "laboratory" will be needed to obtain the desired information. An environment could probably be established whereby unlimited opportunity for a wide range of activities and facilities could be provided with other variables held to a minimum. Whether such an intensive "laboratory" is practical or not, a responsibility exists to provide the people with the best possible means of satisfying their various recreational desires and needs. Such activities as trap and skeet shooting, archery, sailboating, etc., should be provided in addition to the more common activities. A better opportunity to study demand can be developed in this way.

A new and dynamic recreational environment must be established in the State. It must be an environment possessing far horizons, and providing a broad array of activities and facilities. Only by enabling all segments of the population ample opportunity to engage in outdoor recreation, can interests be converted into use. Only by providing a choice between the many possibilities of the recreational kaleidoscope, can use pressure provide a true measure of demand.

DEMAND PROJECTIONS

So far demand has been treated primarily on the basis of population trends plus changes in social and economic conditions which will have an impact on demand for outdoor recreation. In this section, demand will be projected in quantitative terms based on data compiled by the Outdoor Recreation Resources Review Commission (ORRRC). Although these data were compiled for the entire North Central Census Region, these studies are the most exhaustive that have been completed and are considered sufficiently reliable for projection of participation rates in Nebraska.

These calculations will be related to capacity of present supply for determination of gross needs by activities.

Resident demand for each of 19 activities was estimated for the years 1967, 1972, 1980 and 2000 on a peak season basis. These estimates were made by relating Nebraska's estimated population 12 years of age and over for the respective years to the participation rates, adjusted to include latent demand, for the North Central Region as presented in ORRRC Study Report 19 and additional adjustments made on the basis of unpublished data from the 1965 study by the Bureau of Outdoor Recreation on participation in outdoor recreational activities. Since Nebraska's economic and population characteristics closely parallel those for the North Central Region in general, it is felt these calculations are a realistic appraisal of future recreational demand for the State.

The population was analyzed by the place of residence for each of the 14 socio-economic areas and these figures were then related to the participation rates for each of the various categories of residence to obtain the demand for each activity in each socio-economic area, Appendix A. The sum of the total demand for each socio-economic area is presented in Table 6.14 for peak season demand. Table 6.15 shows estimated annual demand calculated on a statewide basis using only the data from ORRRC Study Report 19. Demand is expressed in terms of estimated occasions of participation for each activity. Figures 6.30 and 6.31 show this graphically for Nebraska.

Total annual demand for outdoor recreational activity occasions is expected to increase rapidly from 100 million occasions in 1967 to over 261 million by the turn of the century. A 21 per cent increase is estimated for all activities during the next five years, 50 per cent increase by 1980 and nearly 160 per cent increase in total participation before the year 2000. Slightly greater percentage increases are estimated for all activities on a peak season basis, indicating a continued predominance of activity participation within their traditional seasons.

Water-skiing is expected to be the activity which will gain fastest in popularity with demand more than doubling by 1980, although total activity occasions will be much less than many other simple and traditional activities. Other activities which are expected to make the greatest gains in popularity are: ice skating, camping, hiking, boating, swimming, and playing outdoor games and sports. This would indicate a shift in favor of the more active pursuits. Such traditionally popular activities as hunting, fishing, and horseback riding show the lowest growth potential based upon these calculations. However, increased opportunity in these areas would most likely allow greater future participation in these activities.

Non-resident demand has not been included in the projected data outlined in Tables 6.14 and 6.15. As stated previously, demand for outdoor recreation facilities by non-residents has been experienced significantly only during the past few years. Significant changes in the national and state transportation systems preclude use of the past participation data to forecast demand by non-residents. With increased leisure resulting in changing behavior and recreation habits, plus vastly improved transportation facilities, the full impact of future non-resident demand can now only be estimated -- a quantitative analysis would only be conjecture.

Table 6.14. Estimated Nebraska resident demand for outdoor recreation during the peak season expressed as occasions of participation by activities (thousands of occasions).

Activity	1967	1972	% Increase 67-72	1980	% Increase 67-80	2000	% Increase 1967-2000
Driving	8,376	10,146	21	12,113	45	20,557	130
Swimming	6,238	8,255	32	10,573	69	20,217	224
Games or Sports	5,941	7,867	32	10,353	74	20,757	249
Walking	5,084	6,092	20	7,801	53	14,812	191
Picnics	4,150	4,849	17	5,811	40	9,698	134
Fishing	3,431	3,688	7	4,200	22	6,221	81
Bicycling	3,006	3,437	14	3,849	28	5,447	81
Sightseeing	2,848	3,484	22	4,320	52	7,712	171
Boating	2,574	3,576	39	4,580	78	8,881	245
Attending Events	2,389	2,797	17	3,315	39	5,445	128
Hunting**	1,624	1,601	-1	1,653	2	1,872	15
Ice Skating*	1,162	1,674	44	2,241	93	4,608	297
Horseback Riding	892	1,019	14	1,188	33	1,768	98
Camping	797	1,166	46	1,564	96	3,251	308
Water-skiing	725	1,156	59	1,646	127	4,074	462
Nature Walks	699	849	21	1,049	50	1,869	167
Outdoor Concerts	552	714	29	927	68	1,807	227
Sledding*	267	317	19	402	51	728	173
Hiking	257	369	44	463	80	803	212
Total Demand	51,012	63,056	24	78,048	53	140,527	175

Note 1:

**Fall season, *winter season; rest of activities are for summer season.

Note 2:

Based upon per capita participation rates for the west north central region as prepared by the Bureau of Outdoor Recreation and ORRRC Study Report #19.

Table 6.15. Nebraska's estimated annual resident demand for outdoor recreation expressed as occasions of participation by activities (thousands of occasions). Based upon per capita participation rates of west north central region as given in ORRRC Study Report #19.

Activity	1967	1972	% Increase 67-72	1980	% Increase 67-80	2000	% Increase 1967-2000
Driving	25,853	30,539	18	37,712	46	61,389	137
Walking	16,547	19,355	17	23,952	43	42,967	160
Outdoor Sports	13,791	18,115	31	23,596	71	44,952	226
Sightseeing	7,356	9,195	25	11,626	58	20,444	178
Swimming	6,017	7,981	33	10,426	73	19,507	224
Bicycling	5,380	6,007	12	7,068	31	11,110	106
Fishing	5,080	5,383	6	6,112	20	8,660	61
Attending Events	4,532	5,481	21	6,688	48	11,166	146
Picnicking	4,347	5,058	16	6,160	42	10,015	130
Nature Walks	2,694	3,126	16	3,796	41	6,141	128
Boating	2,398	3,235	35	4,267	78	8,051	236
Hunting	2,318	2,189	-6	2,222	-4	2,504	8
Horseback Riding	1,276	1,352	6	1,441	13	1,711	34
Ice Skating	1,185	1,702	44	2,329	97	4,643	292
Camping	774	1,105	43	1,499	94	2,976	284
Outdoor Concerts	420	540	29	689	64	1,290	207
Hiking	370	528	43	704	90	1,276	245
Sledding	328	382	16	461	41	840	156
Water-skiing	317	502	58	722	128	1,647	420
Total Demand	100,983	121,775		151,470	50	261,289	159

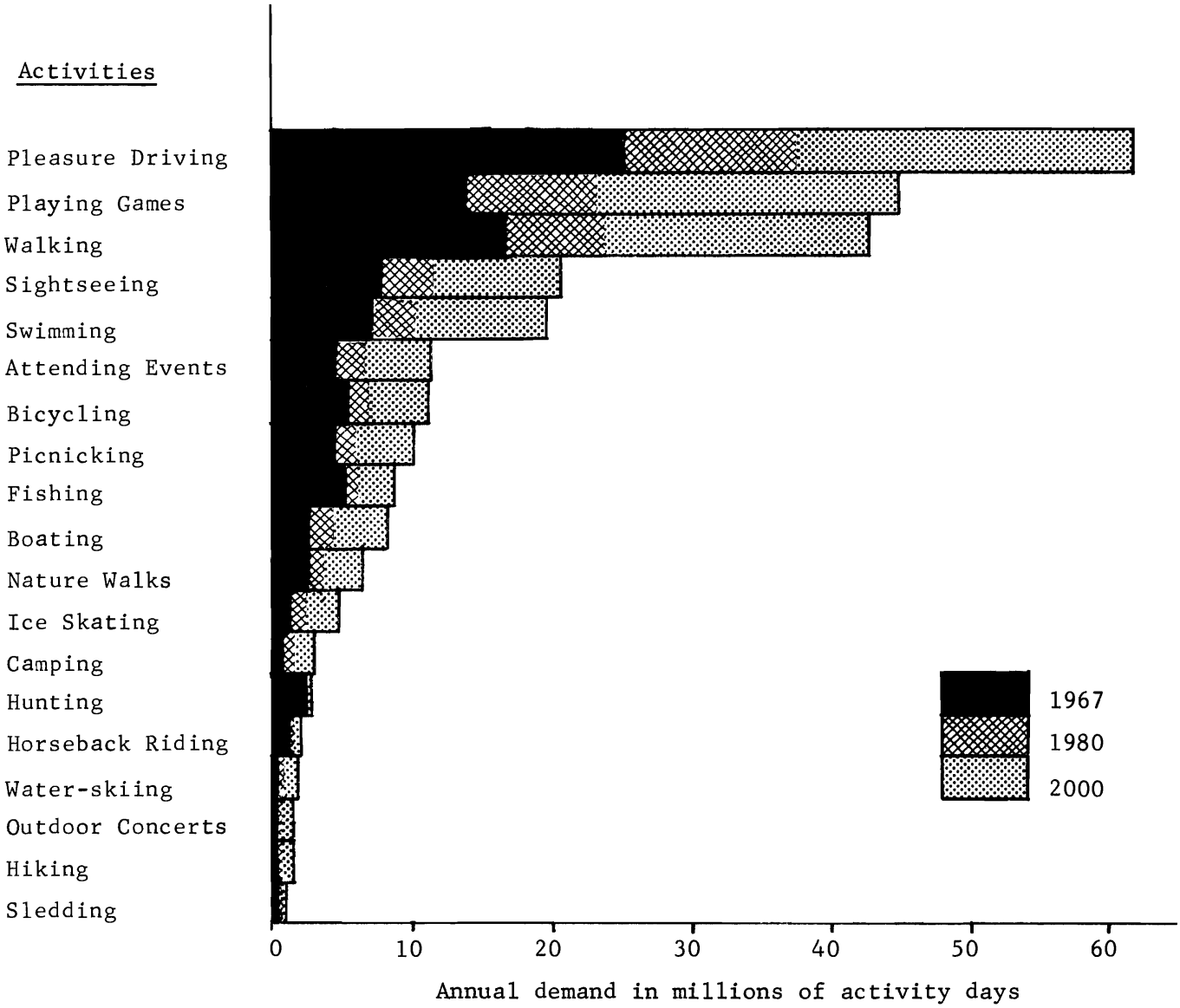


Figure 6.30. Annual demand for outdoor recreation in Nebraska, residents 12 years old and older.

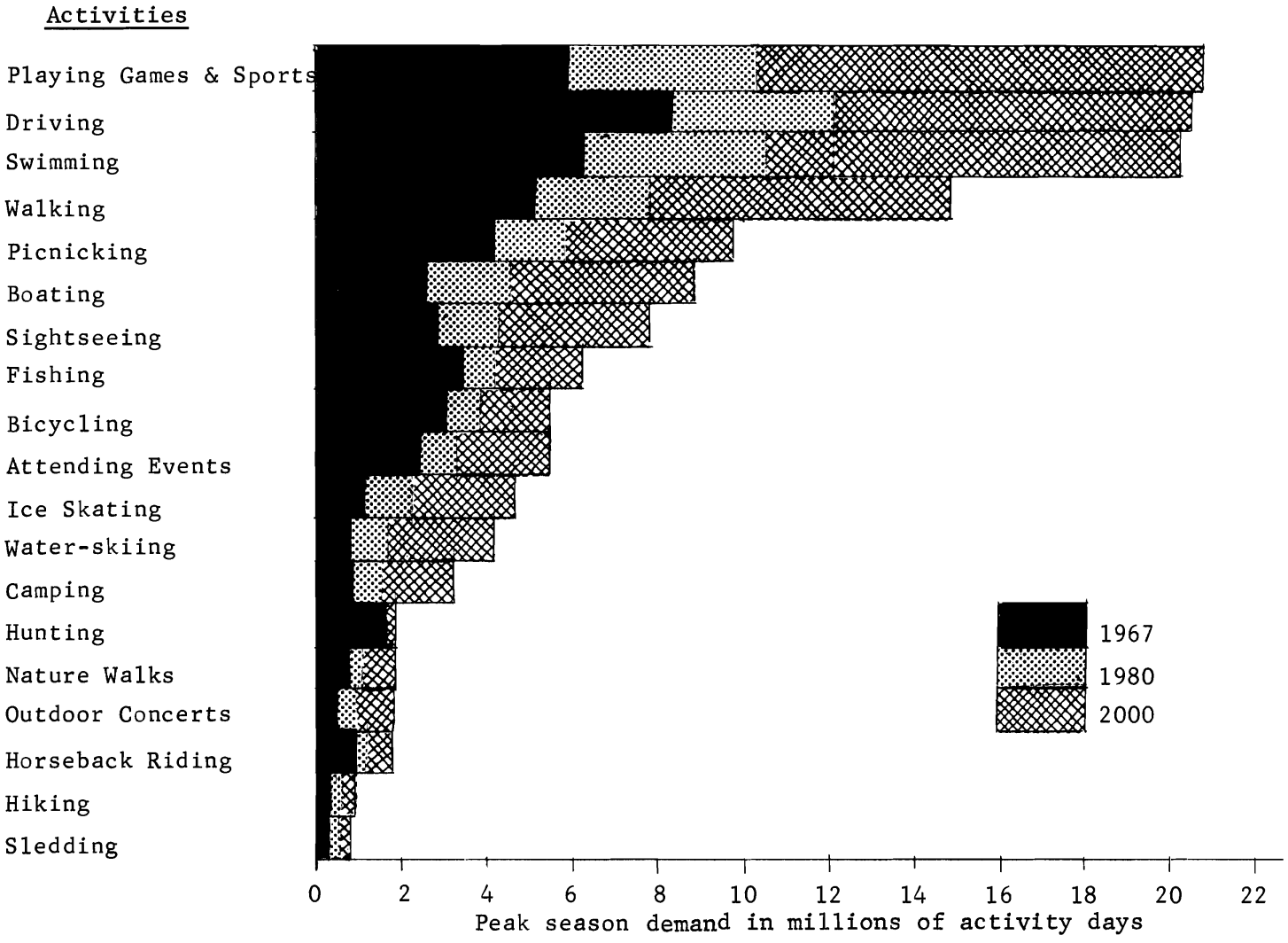


Figure 6.31. Peak season demand for outdoor recreation in Nebraska, residents 12 years old and older.

It was pointed out under the section on non-resident populations that non-resident hunters and anglers have increased substantially and contributed significantly to the demand for fishing and hunting; that traffic flow data show increasing number of non-residents traveling the state's highways; that approximately 17 per cent of the present use on 15 major state parks or recreation areas is by non-residents; and that Interstate "80", extending the length of Nebraska along the Platte Valley will have the potential of serving one-half the American people living east of Omaha. These people will travel west. The potential demand defies projection in quantitative terms, but it is substantial. Expression of demand through participation will again depend on the facilities and opportunities available. The greatest non-resident demand will be for historical parks and interpretations; water-based activities, hunting, and wayside parks featuring overnight facilities.

SUMMARY

Participation in outdoor recreation has been increasing rapidly in the past few years. According to the Outdoor Recreation Resources Review Commission, demand is expected to triple before the turn of the century. The major factors responsible for this steady and rapid rise in the demand for outdoor recreation facilities are:

(1) growing population,

(2) increasing urban concentration of population,

(3) increasing family income,

(4) increasing leisure time,

(5) increasing mobility of the population and

(6) increasing recreational opportunities.

Population analysis was made on a statewide scale and also by hypothetical "socio-economic areas." Economic growth, leisure time, mobility and people's interests were treated on a statewide basis.

The "socio-economic" concept is based on the idea that there are certain regions in the State which include a central farm city with a surrounding natural economic area, and a social structure arising from and roughly equivalent to the economic area. Fourteen areas were delineated, and projections made for each area.

The state's population distribution is extremely irregular. As of the 1960 census the 14 counties included in the Lincoln and Omaha SEA's had about one-half the state population occupying less than 10 per cent of the total land area. In contrast, the 14-county Sandhill area (Valentine SEA) contains less than four per cent of the state population on approximately one-fourth of the state land area. To a certain extent population concentrations follow major river courses. Larger rivers can be easily delineated by observing the groupings of cities and

towns. The major portion of Nebraska's population is concentrated in the eastern one-third of the State and within the Platte Valley. High density in the Omaha region is especially apparent.

Nebraska has experienced a relatively slow rate of growth in comparison to the national rate. Only three regions, Omaha, Lincoln and Scottsbluff SEA's have shown a total increase in population for the period 1920 to 1960. A decrease in rural populations as opposed to an increase in urban numbers was generally exhibited. Although most of the socio-economic areas decreased or remained stable in population, individual cities and towns within various regions often increased. Certain rural communities have also shown a modest increase.

A greater rate of growth can be expected during the period of 1966 to 2000 than previously experienced. It is estimated that Nebraska's population will increase by 17 per cent from 1966 to 1985. If past trends continue, approximately 63 per cent of the 1985 Nebraska population will be urban as compared to 52 per cent in 1960. The three areas, Omaha, Lincoln and Scottsbluff SEA's will account for most of Nebraska's net population increase for the period 1966 to 1985.

General population trends have been relatively consistent, but the past is not always a reliable indicator of the future. Special existing conditions, anticipated changes and uncertainties ahead will affect future trends of individual areas.

The young and old are comprising a greater portion of the state's population. Both of these groups have considerable leisure time and their needs deserve attention.

Women will have more to say about outdoor recreation than in the past. They prefer the less active pursuits, like to participate with family and friends and demand more convenient facilities.

The non-white portion of the state's population, though not presently large, will materially affect demand. Certain areas of concentration may need special emphasis in the future.

The State contains a high percentage of foreign stock. As the per cent of people in this category inevitably decrease, the old world "work ethic" will lose strength to the new world recreation ethic, resulting in increased demand for recreation.

Occupational composition is changing in a manner that favors an increase in outdoor recreation demand. Farm workers, a low demand group, are being replaced in the work force by non-agricultural wage and salary earners, a high demand group.

Nebraskans have received more education than the average U.S. citizen. Since people with higher education tend to participate more in outdoor recreation, demand should be affected positively.

Marital status also affects demand. The trend in Nebraska is to smaller families, but more of them. The percentage of the population that is married is growing, resulting in increased demand for family-type recreational facilities.

Suburbanites are the most active participants in outdoor recreation, and they are also the fastest growing segment of Nebraska's population. As this portion of the population continues to increase, demand for outdoor recreation will rise.

The economy of Nebraska is growing but at a relatively slow rate compared with national statistics. Recreation as an industry can contribute much toward quality growth.

Income levels are rising in the State. Since the rate of participation in outdoor recreation increases with higher incomes, the growing demand for outdoor recreation should be further amplified.

The nationwide trend toward more leisure time is also evident in Nebraska. Farmers have the least available leisure time and wage earners the most. As farmers, who comprise 19 per cent of the state's work force, decline in numbers and wage earners increase, recreational demand will be increased.

Mobility of both resident and non-resident populations is rapidly improving. Airline transportation is assuming a greater role in linking east with west. The number of passenger cars per 1,000 people is increasing at the rate of three per cent per year. A larger portion of the population is becoming mobile. Total traffic flow is increasing and Nebraskans are ranging over wider areas. Completion of the interstate system will further reduce travel time and better connect populations with non-urban outdoor recreation areas.

Non-resident use of Nebraska's recreational resources is increasing. Hunting and fishing continue to provide the main attraction but other outdoor recreation and historic developments and Interstate Highway "80" are drawing the attention of tourists. Future developments will attract more. The facilities and attractions provided will in a large measure determine participation.

Recreational habits of both residents and visitors largely depend upon the available supply of various types of recreation. Participation cannot occur without opportunity.

Hunting and fishing have been traditionally popular with Nebraskans. Yet, non-residents are comprising an increasing percentage of the state's hunters and anglers.

Boating activities are expanding. Number of registered motorboats have increased by 60 per cent from 1960 to 1966.

On large water areas such as reservoirs, fishing is the most prevalent activity. Picnicking, camping, swimming and boating are also high in participation.

Hunting and fishing are considered activities of high quality by most Nebraskans. On the other hand, such activities as driving and sightseeing are not often rated as favorites although participation is high.

Unless opportunity to engage in a given activity is practically unlimited, participation is not a reliable indicator of demand for that activity. Interaction of supply and demand between various activities also complicates the picture. Inevitably, demand must relate to the foundation of population. To be specific it must relate to how outdoor recreation is regarded by the population in relation to other alternative uses of their time and money.

Study is needed in the entire area of recreational demand. Reliable data on activity participation and use is especially lacking. Interrelations between supply and demand should be investigated.

It is estimated that total resident demand for outdoor recreation in Nebraska will increase by 21 per cent from 1966 to 1972, 50 per cent by 1980 and nearly 160 per cent before the year 2000. Resident demand projections by activity indicate that demand for each activity will increase at a significantly greater rate than population growth, with the exception of horseback riding, fishing and hunting. Water-oriented activities, outdoor sports, camping and hiking show the greatest rates of increase. Non-resident demand will also increase substantially, but activity occasions as an expression of demand were not calculated for this segment of the population.

An outdoor recreational renaissance is underway in Nebraska. Our early ancestors worked and played in the great outdoors as a part of their everyday life. Now, a century later, we are experiencing a renewed emphasis on outdoor living and recreation.

Chapter VII

Supply Of

Outdoor Recreation Resources

SUPPLY OF OUTDOOR RECREATION RESOURCES

INVENTORY OF NATURAL RESOURCES RELATED TO OUTDOOR RECREATION

Forests and Lands

Nebraska lies within the prairie and plains regions of the North American continent. Climate dictated development of native grassland associations over most of the State resulting in tall-grass prairie in the east, mixed prairie and sandhill associations in the central portions, and short-grass plains in the west. Native forests are highly limited, and occur primarily along stream courses of eastern and central Nebraska and the Pine Ridge and Wildcat Hills of the panhandle.

As the State was settled, virgin prairies were turned by the plow. With development of an intensive agricultural industry, much of the original vegetation was replaced by other species and agricultural crops necessary to feed and clothe a rapidly increasing continental and world population. Few areas remain untouched and unaltered by agricultural operations. Sixty-three counties have 50 per cent of the land area classed as cropland while 36 counties have in excess of 70 per cent.[1] Over 97 per cent of the state area is in farms or ranches with lands about equally divided between cropland and pasture or grazing land.

The tall grass and mixed prairie have been replaced with corn, alfalfa, wheat, sorghums, or seeded pastures. Much of the short-grass plains has yielded to wheat on the drylands and sugar beats, beans, alfalfa, or corn on irrigated lands. Extensive areas of unbroken short-grass plains remain in some areas, particularly in Sioux County.

Although farming was attempted during early settlement in the Sandhills, it was quickly learned that the character of the loose, porous, sandy soils was not suited to cultivation. Consequently, the limited farming activities were abandoned over most of the area and the small cultivated areas reverted mostly to native grasses. Today, this area of approximately 20,000 square miles remains as unbroken grassland, with a cattle industry based almost entirely on native grasses. Each of the sandhill counties has less than 10 per cent of its land area in cropland. It is truly one of the most interesting and scenic grassland areas of the continent, offering varied topography, unlimited space, and lowland pastures dotted with lakes and wetlands. Numerous species of wildlife are present. To those accustomed to metropolitan life or the relatively dense farm populations of the east, a landscape with virtually no sign of human habitation is indeed a welcome relief. The area is one of the great recreation resources of the State.

---

[1] Searcy, N.D., and A.R. Longwell. 1964. Nebraska Atlas. Nebraska Atlas Publishing Company, Kearney, Nebraska.

Forests and woodlands are extremely limited, comprising only about two per cent of the total land area and occurring primarily along the stream courses. The two major exceptions are the Wildcat Hills and the Pine Ridge, both upland forest sites in the Panhandle of western Nebraska.

The latter areas are escarpments with deep canyons, rough topography and coniferous forests interspersed with grasslands and limited agricultural operations. Dominant trees are ponderosa pine and red cedar in the upland sites, with deciduous species, primarily cottonwood and green ash, occurring along the streams and narrow canyon bottoms. The extensive character of these forested areas with rough topography featuring buttes, bluffs, canyons, interesting flora and fauna, many vista points and a rich history lends particular significance to these lands as a recreation resource.

Extending across the northern part of the State along the Niobrara River and its tributaries, the western coniferous forest of ponderosa pine extends east and grades into the eastern deciduous forest in Rock County. Deciduous trees, including cottonwood, burr oak, green ash and a wide variety of other less prominent species, are predominant along most of the remaining stream courses. Coniferous trees are limited to eastern red cedar, which may be found in abundance in some river breaks and along the river. The most extensive deciduous woodlands occur in counties bordering the Missouri River.

With stabilization of the Missouri River, some of the timber is being removed as bottom lands are converted to other agricultural uses. With the limited quantity of this resource, these losses are highly significant in the field of outdoor recreation. Mature timber is a basic and necessary element for many types of outdoor recreation and many species of wildlife. It provides relief from a predominately agricultural landscape, and complements the water-oriented recreation potential of the river. If significant acreage should be lost to agriculture, quality of the environment for outdoor recreation pursuits will be much less. These limited resources should be retained and managed for forest products, outdoor recreation and wildlife.

Waters

Demand for water-oriented outdoor recreation is increasing at a more rapid rate than other forms of recreation activity.[2] Nebraska has a unique opportunity to meet the demand for these activities from both existing and potential water resources.

The surface-water area within the State is about 615 square miles, with approximately 40,000 bodies of water of which 3,350 are in excess of ten acres.[3]

---

[2]Outdoor Recreation Resources Review Commission. 1962. Outdoor Recreation for America. U.S. Government Printing Office. Washington, D.C.

[3]Searcy, N.D., and A.R. Longwell. 1964. Nebraska Atlas. Nebraska Atlas Publishing Company, Kearney, Nebraska.

Major rivers include the Missouri, Niobrara, Elkhorn, the Loup system, Platte, Republican and Big Blue Rivers. Size and depth of water limit recreation activities on all but the Missouri River. Here, opportunity for pleasure boating with powered crafts is substantial and limited only by access and facilities. Opportunity for non-power boating on other streams is largely limited to portions of the Niobrara, Elkhorn and Loup systems because of shallow stream beds and inadequate stream flow.

Although pleasure boating on streams is limited mostly to the Missouri River, development of an extensive reservoir system for flood control, power, and irrigation, particularly in the southwest, has opened a mecca for pleasure boating and other water-oriented activities requiring relatively large bodies of water.

Fisheries

The five major types of water that contribute to the sport fishery in Nebraska are reservoirs, natural lakes, streams, farm ponds and grade stabilization structures, and gravel pits. Nearly all reservoirs, about half the natural lakes and a small per cent of the gravel pits are open to public fishing. The great majority of streams, farm ponds and grade stabilization structures are private.

Reservoirs furnish fair to excellent fisheries for walleye, white bass, channel catfish, crappie, largemouth bass, bluegill, and yellow perch. Selected reservoirs furnish some fishing for trout and smallmouth bass. Nearly all reservoirs contain high populations of rough fish including carp, carpsucker, and gizzard shad. The primary management problems involve fluctuation of the water level.

Natural lakes which have sufficient depth and chemical characteristics are highly productive and can support excellent populations of northern pike, largemouth bass, bluegill and yellow perch along with bullhead and carp. Major problems stem from the shallow nature of the lakes plus heavy vegetative growth, which results in occasional winter kill. The high productivity of these lakes has resulted in some summer kill.

Streams primarily support a warmwater fisheries. Trout fishing is a popular activity but highly restricted in potential. Coldwater fisheries for rainbow, brown and brook are limited and confined primarily to the northern and western portion of the State. Warmwater streams support mainly channel catfish, carp and bullhead fisheries with various limited streams supporting walleye, sauger, white bass, northern pike and largemouth bass. Factors which affect production are siltation and other pollutants, channelization, direct diversions, irrigation return flow, and storage in and releases from reservoirs.

Farm ponds and grade stabilization structures are managed primarily for largemouth bass, bluegill and channel catfish; however, many ponds are overpopulated with carp and bullheads.

Most gravel pits are being managed for production of largemouth bass, bluegill, and channel catfish or smallmouth bass, rock bass and channel catfish. Other pits contain mixed populations of game and rough fish. The major factor limiting production is stratification.

Supply and Capacity. Fishery resources were inventoried in 1966 by socio-economic area, Appendix B.1. The inventory is lacking private gravel pits and reservoirs created under the P.L. 566 program. Streams and standing waters were classified for fishing on the basis of present conditions concerning esthetics, use, availability and productivity. On the basis of these factors, streams and lakes were placed in classes and assigned appropriate capacities in angler trips. Estimated capacities for each class are shown in Table 7.1 and a definition of each class is provided in Appendix B.2.

Table 7.1. Capacity in annual fishing trips for various waters by class.

Class	Capacity Per Mile Streams	Capacity Per Acre			
		Reservoirs Over 1,000 Acres	Reservoirs Under 1,000 Acres	Natural Lakes	Farm Ponds
1	500	25	40	60	25
2	250	25	40	60	25
3	150	25	40	60	25
4	25	25	40	60	25
5	None	None	None	None	None

Capacity as used in Table 7.1 is an estimate of the angler use in fisherman trips water could sustain and still provide a quality fishery under a reasonable level of management. Capacity of a particular body of water in man days of fishing is a relative measure and is dependent upon how much success or lack of success the average fisherman will or should be expected to tolerate. Lowered productivity, and thus, lowered capacity occurs on stream systems which are overgrazed, subjected to siltation, diverted for irrigation and power production, polluted and channelized. Production of some standing waters is variously affected by siltation, water level fluctuation, pollution, stratification and eutrophication.

Estimated capacity of the fishery resources by type and socio-economic area is summarized in Table 7.2. The totals in this summary serve to point out the relative importance of the different types of water. Reservoirs over 1,000 acres and natural lakes are of major importance, comprising 44 per cent and 33 per cent of the total estimated capacity respectively. Farm ponds account for 8.6 per cent of the total estimated capacity, reservoirs less than 1,000 acres for 7.6 per cent, and streams for 7.15 per cent.

Table 7.2. Summary of estimated annual capacity of fishery resources by socio-economic area (expressed as fisherman trips).

Socio-Economic Area	Streams	Reservoirs Over 1,000 Acres	Reservoirs and Public Pits Under 1,000 Acres	Private Farm Ponds	Natural Lakes	Private Gravel Pits	Total
So. Sioux City	20,625	None	20,000	10,525	None	No Estimate	51,140
Omaha	43,375	None	28,960	32,650	None	No Estimate	104,985
Lincoln	17,325	45,000	103,440	70,300	None	No Estimate	236,065
Beatrice	26,250	None	10,200	57,875	None	No Estimate	94,325
Norfolk	37,975	183,725	2,400	58,225	None	No Estimate	282,325
Columbus	9,125	None	44,560	13,050	None	No Estimate	66,735
Grand Island	18,425	67,000	6,960	34,950	None	No Estimate	127,335
Hastings	10,975	None	2,320	38,350	None	No Estimate	51,645
Kearney	5,950	336,700	14,560	20,150	None	No Estimate	377,360
McCook	20,175	257,000	4,800	7,825	None	No Estimate	289,790
North Platte	10,800	191,525	53,800	6,450	None	No Estimate	278,855
Ogallala	8,300	875,000	12,800	1,650	202,320	No Estimate	1,090,070
Valentine	71,400	67,500	14,800	47,825	1,366,500	No Estimate	1,568,025
Scottsbluff	44,325	84,500	47,680	15,900	None	No Estimate	202,405
Totals	345,035	2,117,950	367,280	415,725	1,568,820		4,821,060

Distribution of estimated capacity by socio-economic areas is of particular importance. Over 55 per cent of the capacity occurs in the Valentine and Ogallala SEA's, accounting for 32.6 per cent and 22.6 per cent of the capacity, respectively. Approximately 80 per cent of the estimated capacity in the Ogallala SEA is derived entirely from one body of water, Lake McConaughy.

Capacity of streams and natural lakes cannot be expected to increase appreciably in the future. It is apparent that the only substantial potential for significant increased fishing capacity lies in future construction of reservoirs and farm ponds.

Wildlife

Upland Game

Nebraska is well known for the quantity and quality of its upland-game hunting. Lying in the fertile Great Plains, the land is amenable to production of a variety of small game. The quantity produced and available for a recreational harvest depends in the long run upon land use and man's manipulation of domestic crops and other plant life.

Species and Distribution. Upland game birds which contribute to sport hunting include the ring-necked pheasant, bobwhite quail, prairie chicken and sharp-tailed grouse. Of these, the pheasant has the widest distribution and occurs in every county. About two-thirds of the State is classed as good pheasant range, with the highest populations in northeast, central and western counties, Figure 7.1.

Prairie grouse, including prairie chickens and sharptails, are found primarily in the Sandhills of northcentral Nebraska and in parts of the southwest. Prairie chickens reach their highest density along the southern and eastern edge of the Sandhills. A small remnant population of prairie chickens occurs in the southeast part of the State. Sharptails may be found throughout the Sandhills, Figure 7.2.

Bobwhite quail are most abundant in the southeastern and southern counties and have general distribution along the river systems throughout much of the eastern and southern portions of the State, Figure 7.3.

Upland game mammals include cottontail rabbits and fox squirrels. These occur throughout much of the State, but the squirrel is limited to deciduous woodlands which make up less than two per cent of the total state area. General distribution of the best cottontail-squirrel range is shown in Figure 7.4.

Current Status. Current status, supply and relative importance of the various species of upland game may be shown by trends in harvest and number of hunters, Table 7.3 and Figures 7.5 and 7.6. Based on game harvested and number of hunters, the ring-necked pheasant is the most important and popular upland game species, followed in order by cottontail rabbits, bobwhite quail, squirrel and prairie grouse.

Figure 7.1 Pheasant range map.

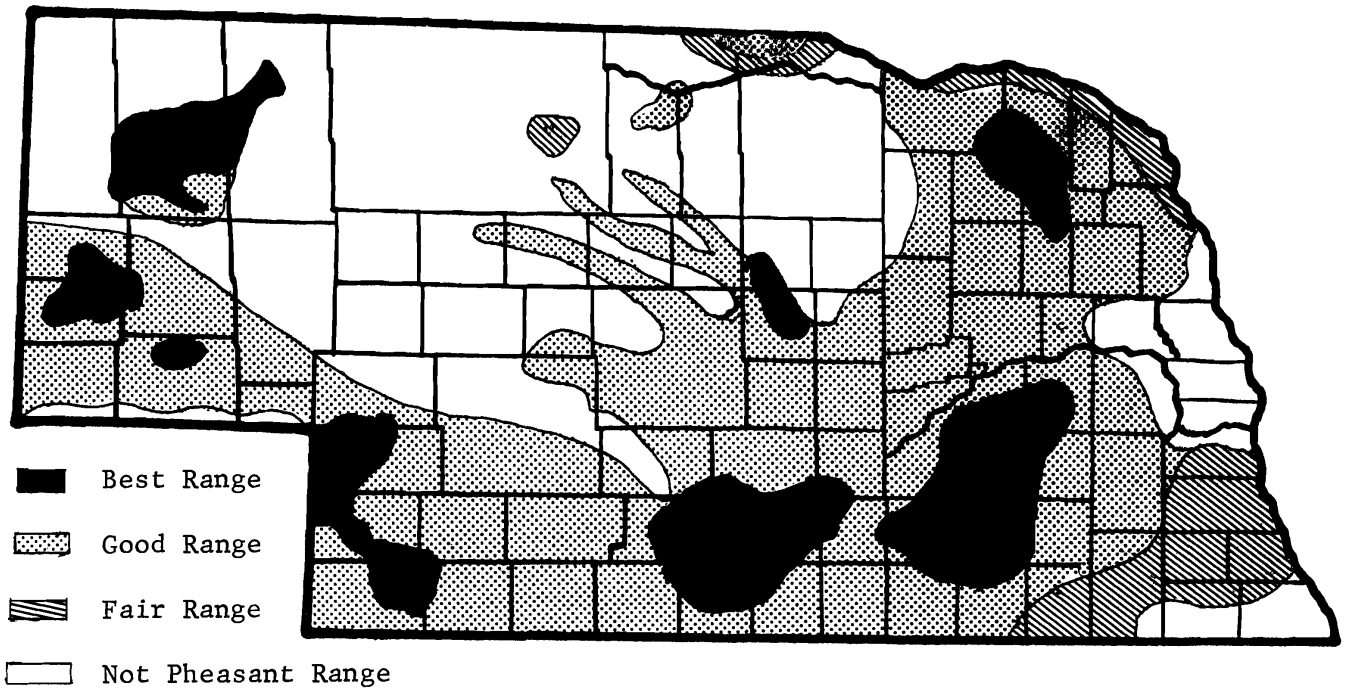


Figure 7.2. Prairie grouse range map.

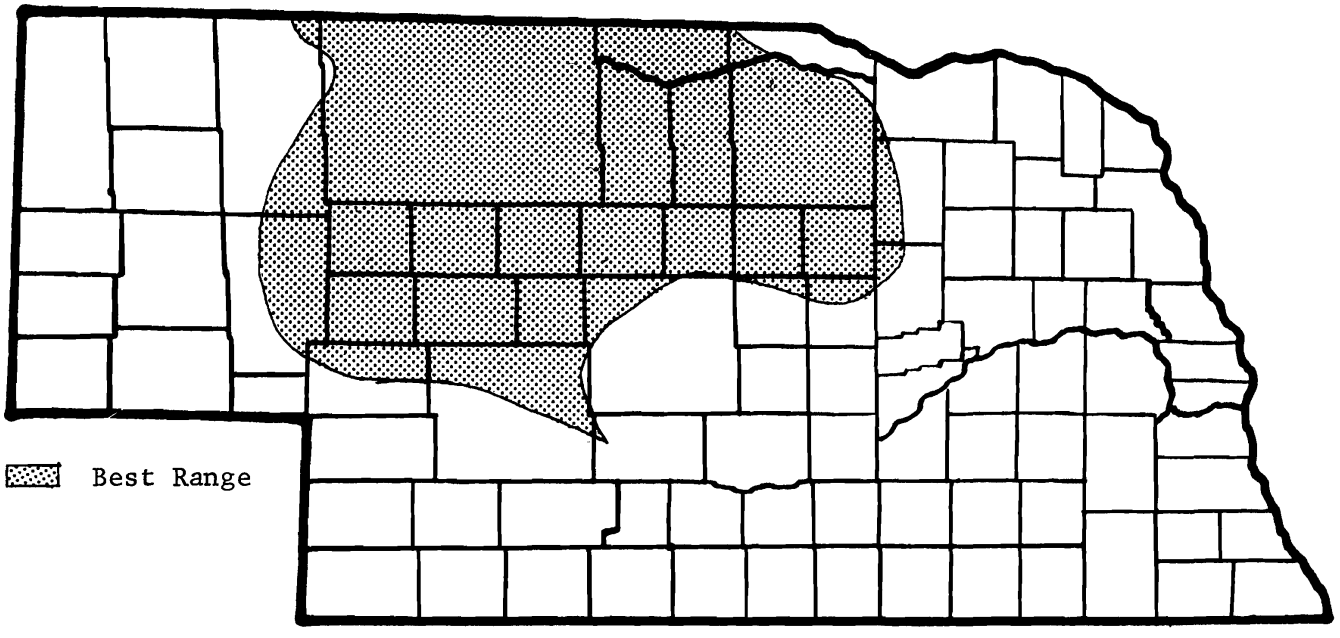


Figure 7.3. Bobwhite quail range map.

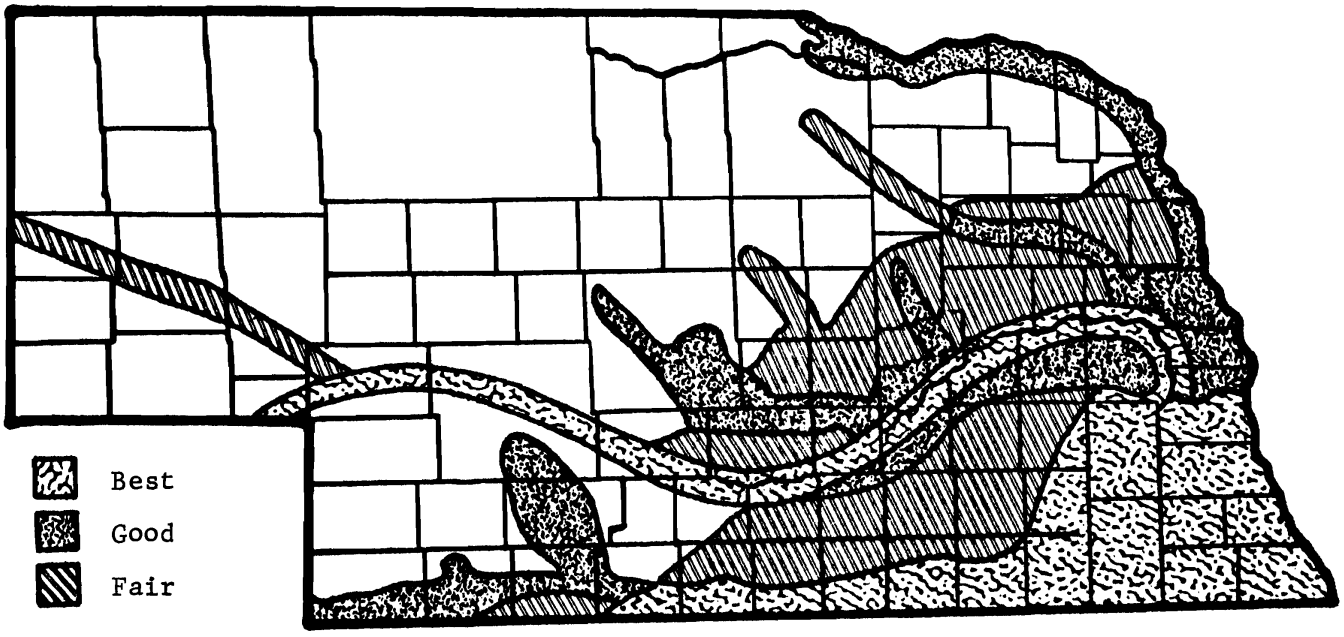


Figure 7.4. Cottontail and squirrel range map.

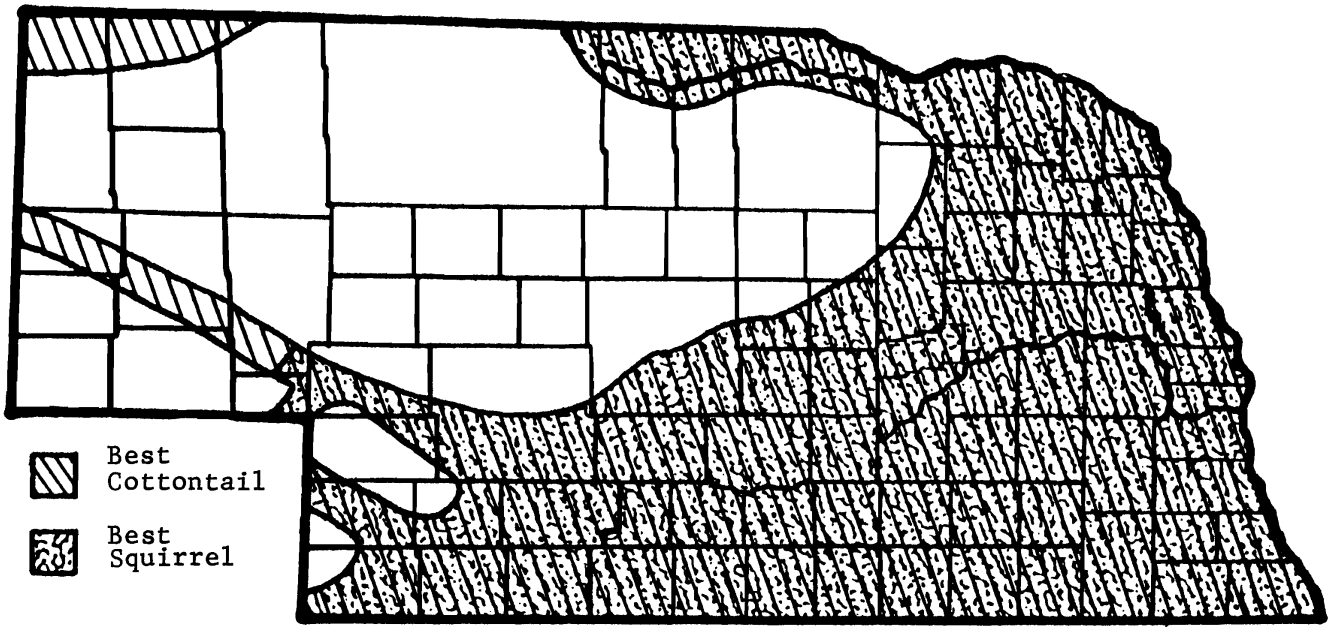


Table 7.3. Upland game harvest by resident hunters 1955-1966.

Year	Pheasants		Quail		Grouse		Cottontail		Squirrel	
	Hunters	Harvest	Hunters	Harvest	Hunters	Harvest	Hunters	Harvest	Hunters	Harvest
1955	103,687	480,070	16,634	92,330	7,057	15,313				
1956	97,658	369,440	23,240	107,480	7,170	14,015				
1957	127,817	526,989	29,695	147,771	7,010	8,538				
1958	144,110	1,148,500	58,389	350,334	11,106	44,090				
1959	145,000	1,220,000	58,700	448,000	18,000	73,100				
1960	150,100	1,165,000	41,600	162,700	18,000	52,600	46,600	366,400	33,600	213,800
1961	146,100	1,298,000	48,500	268,700	17,000	53,700	65,500	646,700	36,100	235,400
1962	155,200	1,379,000	47,800	223,700	17,000	45,300	56,000	393,400	36,600	219,000
1963	153,300	1,461,000	48,200	321,400	20,700	56,000	53,700	481,800	33,300	210,200
1964	140,700	1,270,000	57,300	385,700	19,400	87,200	51,300	445,100	33,200	188,100
1965	140,600	1,332,000	52,000	414,100	16,500	53,000	48,100	374,500	31,600	202,100
1966	141,100	1,228,000	59,100	437,600	16,100	48,600	62,100	540,500	33,000	191,600

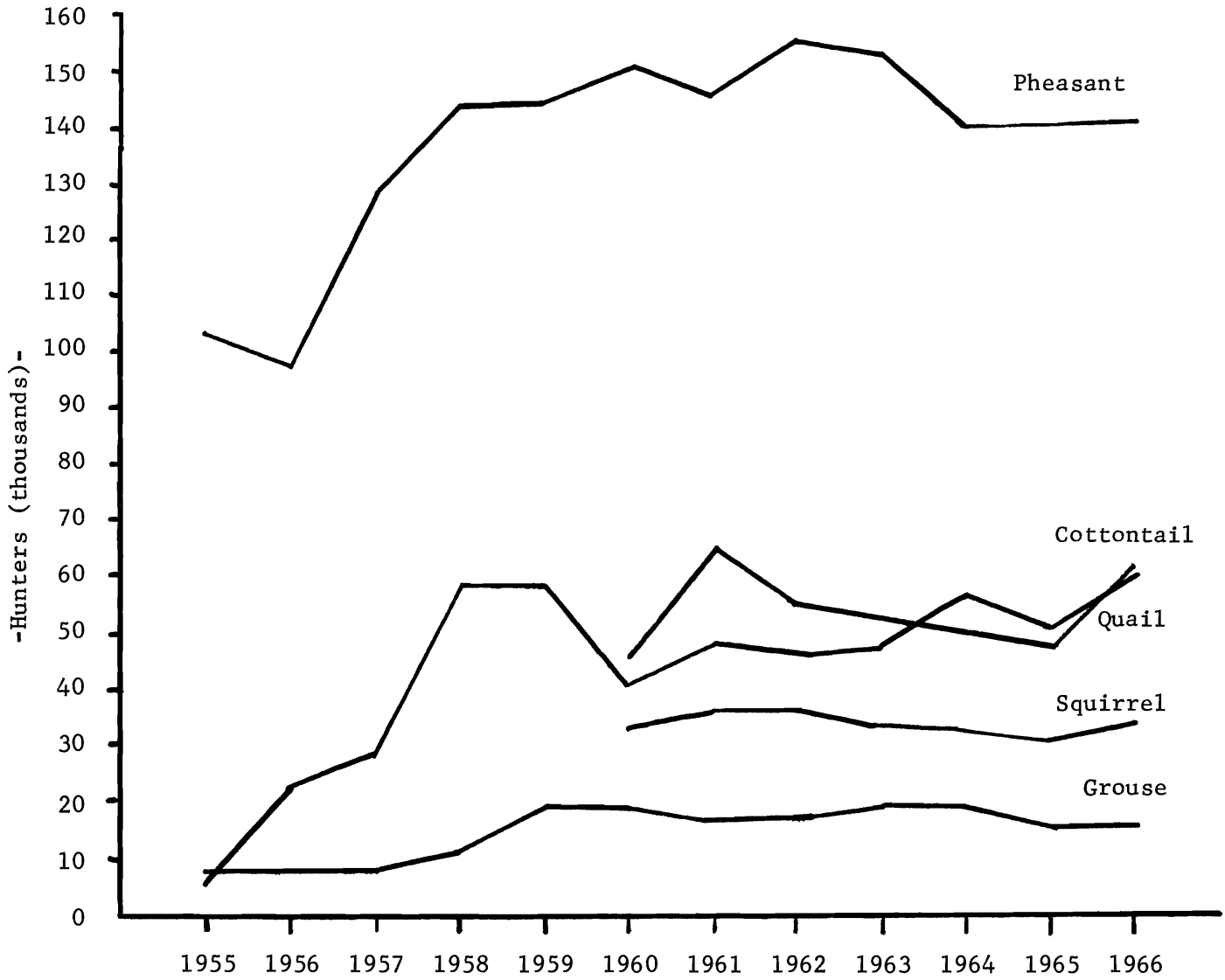


Figure 7.5. Trends in numbers of upland game hunters, 1955-1966.

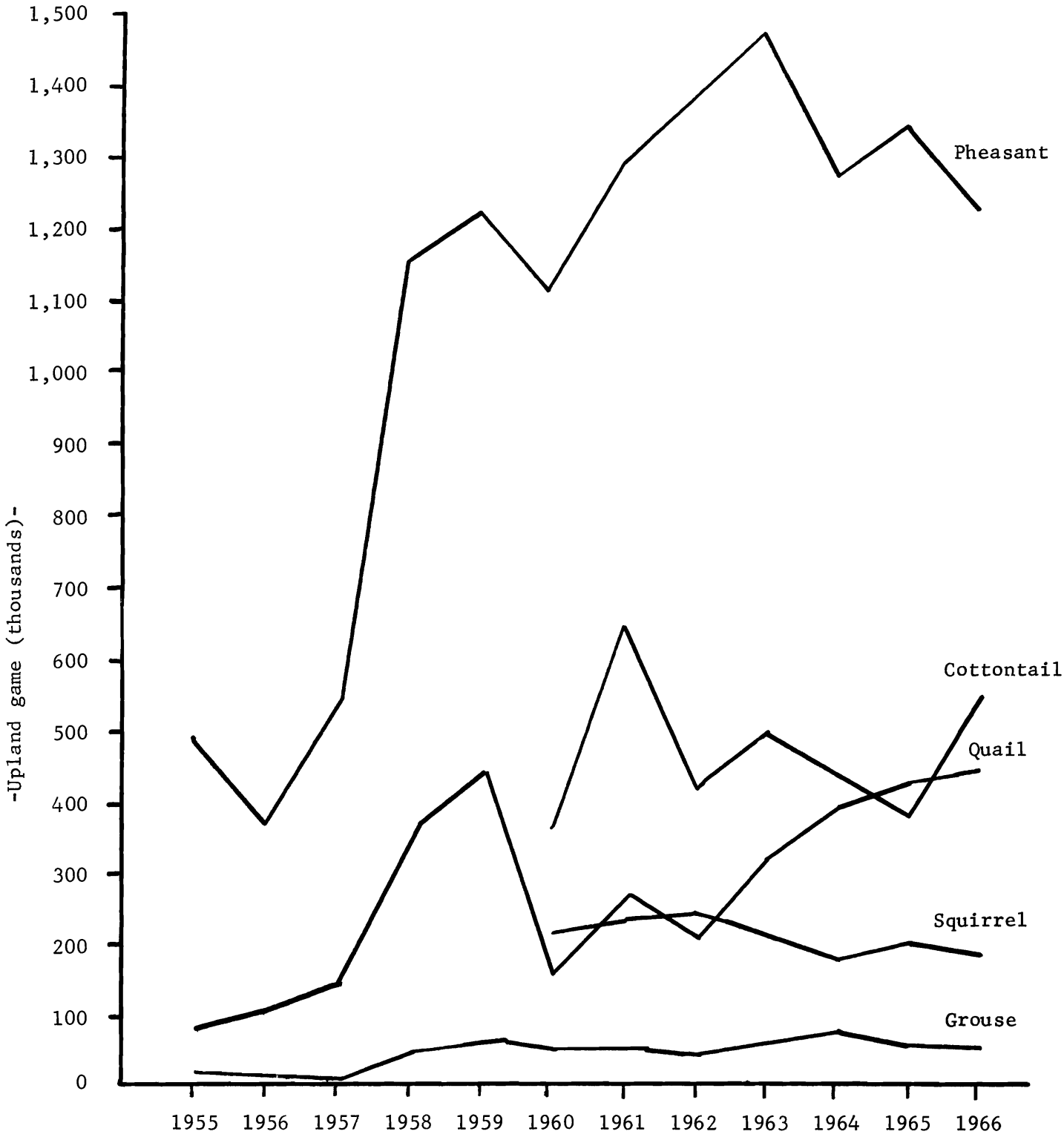


Figure 7.6. Trends in upland game harvest, 1955-1966.

Generally since 1958, regulations have been relaxed to allow greater hunting use of the game resources. Season lengths have gradually been lengthened and some bag and possession limits have been increased. These liberalizations, while providing more opportunity, have not significantly changed the number of hunters or the harvest trends. Both of these have remained fairly constant since 1960.

The annual pheasant harvest by resident hunters has exceeded one million cocks since 1958. Since 1960 the total roosters taken has fluctuated from 1,165,000 in 1960 to a high of 1,461,000 in 1963. During this same seven-year period the number of resident pheasant hunters has remained relatively stable, varying from 155,200 in 1962 down to 140,600 in 1965. Approximately 55 to 60 per cent of the cocks are being harvested annually under present regulations and hunting pressure. A higher percentage could be removed without affecting the status of the resource but it is doubtful that hunters will expend the time and energy necessary to bag a higher proportion.

A special hunter success survey in 1966 indicated the non-residents level of interest in pheasant hunting. Ninety-seven per cent of the 31,500 licensed non-resident hunters hunted pheasants. Their total kill was 263,000 birds. Success was notably higher for non-residents than for residents.

Hunting for pheasants is not distributed evenly over the State, or in relation to the resource. The pressure and harvest is related to distribution of the human population. In 1963, about 52 per cent of the harvest and hunting trips occurred in the eastern one-third of the State although this region does not necessarily include the best pheasant range. Based on the 1960 census, this area included about 68 per cent of the human population and only 29 per cent of the land area. Completion of Interstate "80", facilitating traffic flow from east to west, will undoubtedly increase hunting pressure and utilization in the better ranges of western Nebraska.

Nebraska is on the northern fringe of the continental range of the bobwhite quail, and annual populations usually fluctuate with the degree of winter mortality. Part of the quail harvest occurs incidental to pheasant hunting, and the number of hunters seeking quail specifically is closely related to the population. This is the only species showing a significant rise in the harvest and number of hunters since 1960. A series of mild winters and good production years have raised the quail population to a high level with the resultant attraction of hunters and an increased harvest.

The prairie-grouse range is well removed from major population centers. Hunting pressure and harvest is dependent upon the level of abundance and bag limits that are imposed. During good production years, when limits and opportunity are increased, the number of hunters participating also increases. Since 1959, the number of hunters and their take has been relatively stable. The flock of prairie chickens in the southeastern counties has not been subjected to hunting. In recent years, school groups, nature groups, photographers and others have devoted much time to observing these birds, particularly during the spring dancing ground displays. This non-consumptive use of the resource is expected to increase.

Participation in cottontail and squirrel hunting is low in relation to the available resource. Number of hunters taking squirrels and the estimated harvest have remained relatively stable for years in which data were available. Variations in the cottontail harvest reflect annual fluctuations in population levels during the hunting period. Both cottontail and squirrel populations could sustain more harvest and more recreational use than is being realized at the present time.

Factors Affecting Supply. The future supply of upland game will depend upon the agricultural economy and the resultant land use. Developments in agricultural technology and farming practices are often detrimental to farm-game species because cultural practices reduce or modify essential habitat. An excellent example is the increased production of alfalfa for processing in dehydration plants. Dehydrating mills are numerous in the Platte River Valley from Grand Island west to North Platte. During the past few years, several mills have been developed in other parts of the State. With high-speed machinery and night harvesting, the nesting hens have a high mortality, and nesting success is sharply reduced. Game populations are low in such areas.

Pesticides and herbicides play an important role in the state's farming activities. The ultimate effect of these chemicals on wildlife populations is not completely known, but sufficient knowledge is available to cause considerable concern, particularly over widespread use of chlorinated hydrocarbons. About 4.5 million acres were treated with insecticides in 1960 and 3.8 million in 1963.

Massive land conversion programs, such as the soil bank, acreage reserve and cropland adjustment programs of the Federal government partially offset some detrimental practices of advanced agricultural technology by providing essential habitat for the production of game. However, since the soil bank program has terminated and with expiration of contracts, many of these lands have been brought back into agricultural production. The loss of this habitat will adversely affect wildlife populations, particularly pheasants, which had responded to the program with increased numbers.

In 1965 the Federal government initiated the Cropland Adjustment Program which included a provision for additional payments to landowners who allowed public access and performed recommended habitat work. In 1966 and 1967, 115,164 acres were opened to public hunting under the program, Figure 7.7. An additional 66,000 acres were managed for permanent vegetation without the public access provision.

Since small-game populations are dependent upon man's manipulation of the habitat and since land use is currently dictated by agricultural economics, it is unlikely that populations of existing farm-game species can be materially increased. While it is possible that future land use may favor existing species, it is probable that farm game habitat will deteriorate rather than improve.

Big Game

Species and Distribution. Big-game species inhabiting the State include deer, antelope and wild turkey.

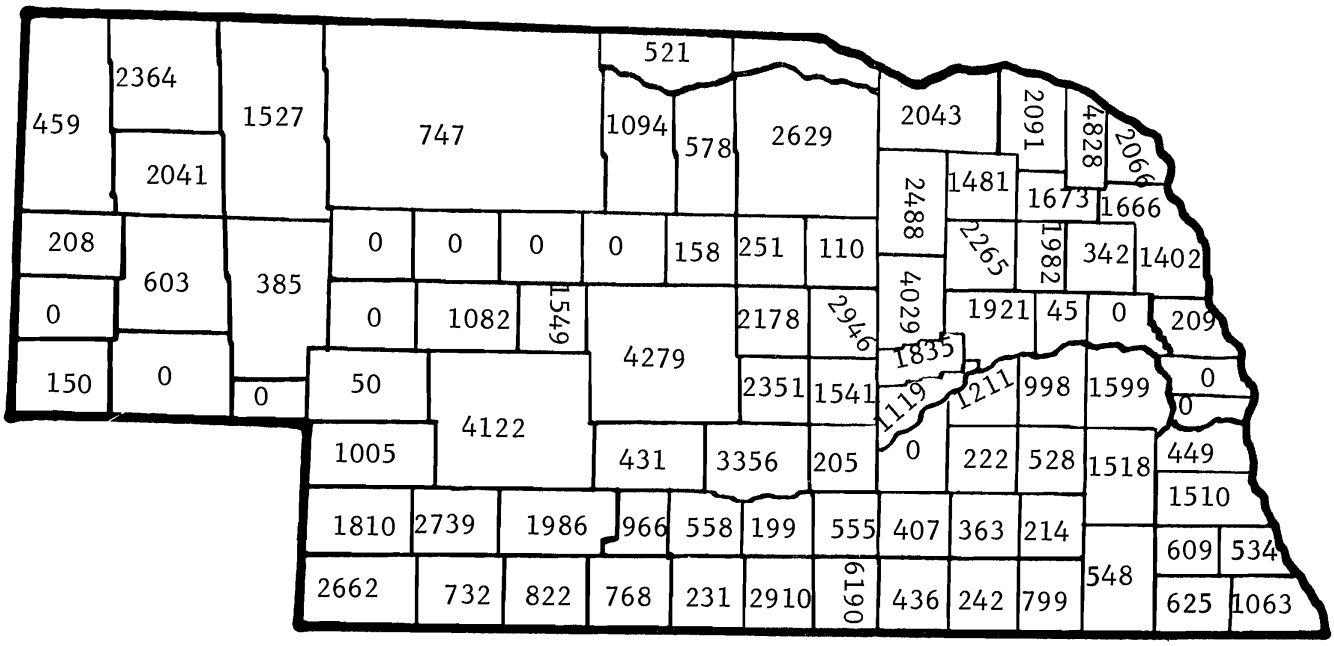


Figure 7.7. Distribution of cropland adjustment program acres open to public hunting in 1967.

Both mule deer and white-tailed deer occur throughout the State. They reach their highest densities along the river courses and associated breaks, Figure 7.8 and 7.9. Mule deer are found primarily west of the 98th meridian and whitetails occur primarily east of the 102nd meridian. Fallow deer were introduced in the Beaver Creek Valley in 1939 and are presently restricted largely to two ranches in Boone and Wheeler Counties.

Until 1958, antelope were largely restricted to the Panhandle. Through a trapping and transplanting program, pronghorns were reintroduced into the Sandhills where they are now established, Figure 7.10.

Merriam's turkeys were introduced in northwestern Nebraska in 1959. The introduction was successful, and through a trapping and transplanting program they have since been established along much of the Niobrara River system in the northcentral part of the State. Limited huntable populations have been established on the Dismal River, on the afforested portion of the Bessey Division of the Nebraska National Forest, and on the Verdigre Creek in Knox County. Additional releases were made in areas of deciduous cover, but these have mostly been too recent to determine success or failure. Rio Grande turkeys have been moderately successful in several areas in the southcentral counties and provide limited hunting, Figure 7.11.

Current Status. The numbers, range and recreational harvest of deer have been increasing steadily since 1949. Since that date, participation increased from 1,500 to 24,870 rifle hunters in 1966. By 1966, archers hunting deer totaled 2,946. Annual harvest increased from 910 to 17,765 in that period, Table 7.4. Deer hunting has become an important recreation activity for an ever increasing number of hunters. This trend should continue for several years.

Antelope provide a high quality hunt but the resource is more limited than deer. Populations of antelope have not shown the steady increases that deer exhibit, Table 7.4. The general trend since 1959 has been ascending and antelope still have potential for increased numbers and expanding recreational activity.

Although the Merriam's wild turkey was released as recently as 1959 in western Nebraska, populations became established so rapidly that hunting was permitted by the fall of 1962. Fall seasons have been held each year since, and commencing in 1964 spring gobbler seasons have been held to supplement the fall season. Although limited, the wild turkey resource provided high-quality hunting to 3,559 hunters in 1966, Table 7.4.

Factors Affecting Supply. Virtually all of the land in Nebraska is in private ownership. Croplands are generally distributed throughout the State, and deer and antelope feed considerably on agricultural crops. In rangeland areas, limited alfalfa or corn fields may attract a considerable portion of the deer and antelope in the area. It is not uncommon, in a township with only one or two alfalfa fields, to find the bulk of the big game in the township concentrated on or near these few fields. Tolerance for and appreciation of big game varies consierably with individual landowners. Imaginary damage from two or three deer may be sufficient to cause one individual to file a complaint, while another, with crop utilization by a hundred animals, may make no complaint whatever.

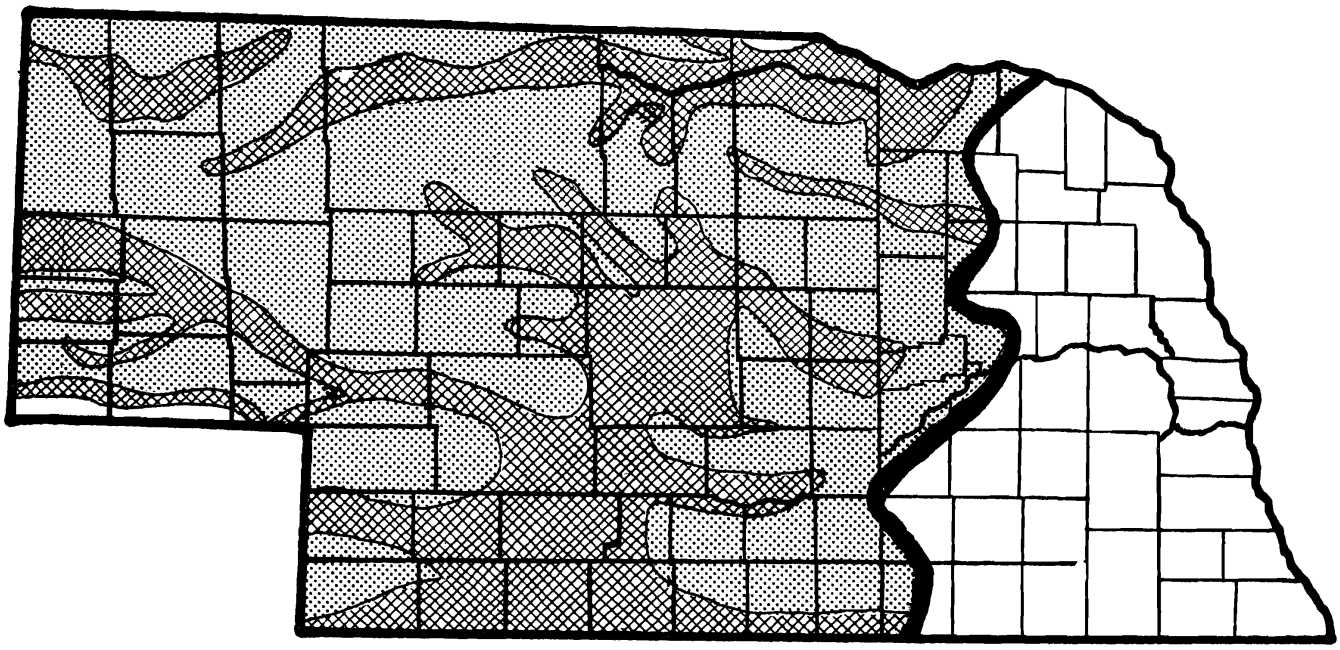
Primary Range

Secondary Range

Occasional Records

Figure 7.8. White-tailed deer range in Nebraska.

Figure 7.9. Mule deer range map.

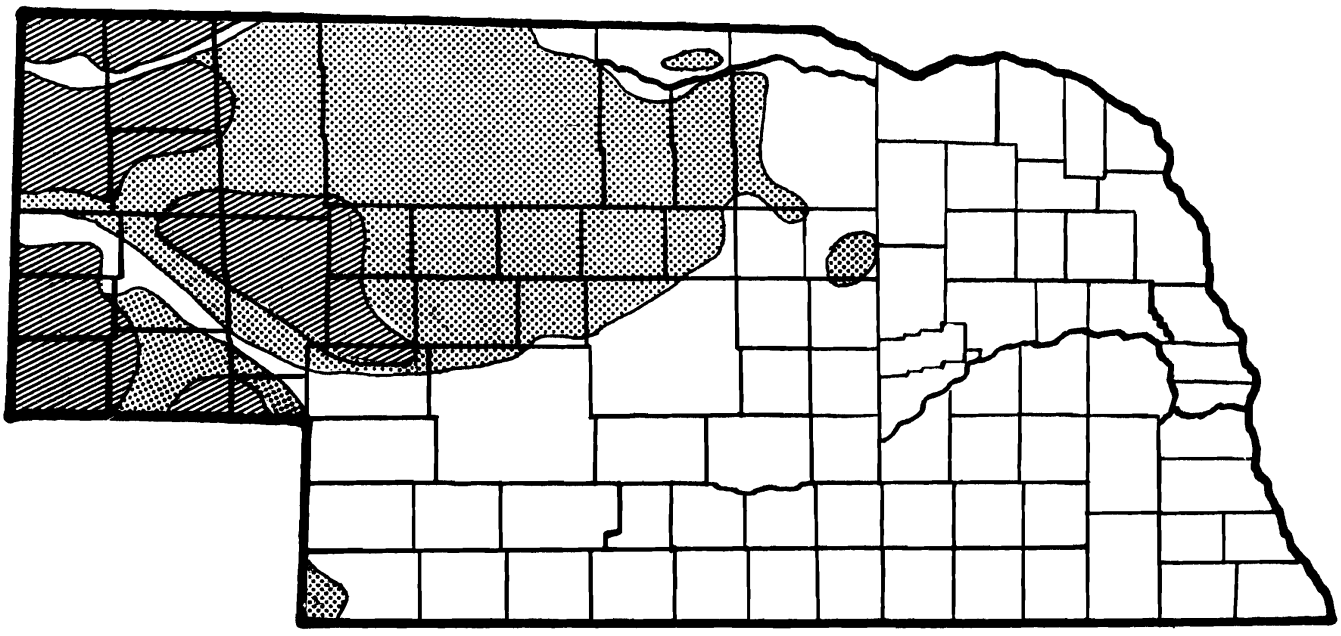


Approximate eastern limit of normal distribution

Fair to good

Poor to fair

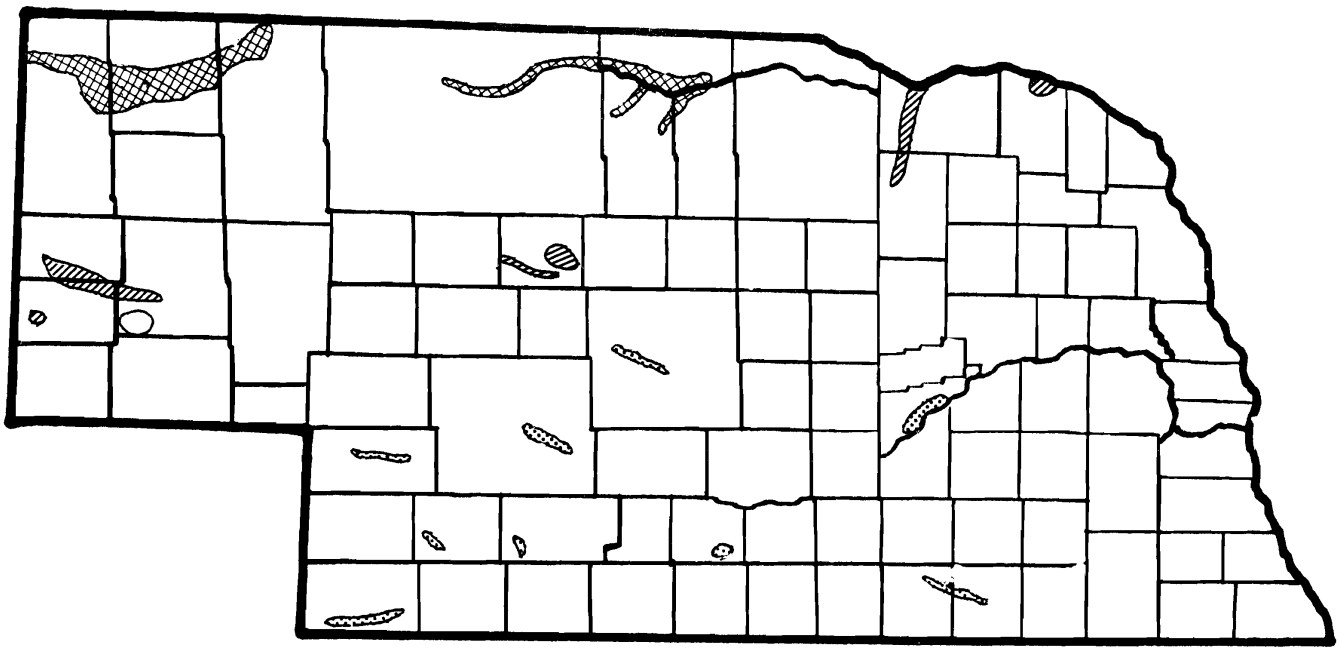
Figure 7.10. Antelope range map.



Primary range

Secondary range

Figure 7.11. Wild turkey range in Nebraska.



Best Range, Merriams Turkey

Secondary Range, Merriams Turkey

Secondary Range, Rio Grande Turkey

Table 7.4. Summary of harvests of big-game species, 1950-1966.

Year	Deer (Rifle) Permits Issued	Deer (Rifle) Number Harvested	Deer (Archery) Permits Issued	Deer (Archery) Number Harvested	Antelope (Rifle) Permits Issued	Antelope (Rifle) Number Harvested	Antelope (Archery) Permits Issued	Antelope (Archery) Number Harvested	Turkey Permits Issued	Turkey Number Harvested
1950	1,000	680								
1951	1,200	712								
1952	2,500	1,921								
1953	5,300	4,083			150	132				
1954	4,000	2,753			500	421				
1955	5,597	4,300	173	7	923	796				
1956	8,200	6,561	275	28	897	748				
1957	12,174	8,450	655	80	1,058	783				
1958	9,580	5,789	1,136	221	C L O S E D					
1959	11,044	6,322	1,426	223	250	219				
1960	12,596	5,399	1,239	221	550	422				
1961	11,993	5,445	1,360	331	693	603				
1962	13,710	9,041	1,524	316	1,143	967			500	281
1963	15,562	10,677	1,691	413	1,249	1,018			1,000	555
1964	18,236	13,317	2,256	578	1,234	1,084	29	6	2,454	911
1965	23,593	17,228	2,618	532	1,597	1,238	35	9	3,029	1,282
1966	24,870	17,148	2,946	617	1,275	1,059	47	9	3,459	1,486

The number of deer or antelope which can be maintained in most areas of Nebraska is not dependent on biological carrying capacity but on tolerance of landowners.

Because of their tendency to concentrate in large bands, antelope generally cause more complaints than deer. Primary factors in setting hunting regulations are landowner tolerances of big game, especially antelope.

Presently, whitetails occur primarily along stream courses, where timber and brushy cover is relatively abundant. However, possibly as a result of population increases, there is a growing expansion into areas which appear to be less suitable habitat, such as shelterbelts, sandhills, marshes and less timbered portions of river breaks. Since whitetails are more prolific and less vulnerable to hunters than mule deer, their numbers will probably increase in areas where both species are hunted.

Fallow deer are limited primarily by low productivity. With negligible harvest, numbers have remained relatively constant at 125 to 150 animals, and there has been little or no dispersal. Early winter ratios since 1957 have ranged from 14 to 42 fawns per 100 does, which is apparently sufficient only to replace annual mortality.

Migratory Wildfowl

Waterfowl hunting has been a traditional outdoor recreation pursuit for large numbers of Nebraskans for many years. Recent declines in continental waterfowl populations, however, have drastically altered the status of waterfowl hunting in Nebraska.

A summary of waterfowl harvests and participation is shown in Table 7.5. These trends amply reflect participation and supply of waterfowl for recreational hunting during recent years. The waterfowl harvest declined from 697,055 ducks and 12,499 geese in 1957, to 151,795 ducks and 13,655 geese in 1965. During the same period, the number of active waterfowl hunters declined from 64,100 in 1957 to 18,114 in 1965. The average annual duck harvest for the three-year period from 1957 to 1959 was 482,722 as compared to 194,472 from 1964 to 1966. The average annual goose harvest during these periods also declined, but much less than the duck harvest.

The basic cause for the sharp decline of hunters and annual waterfowl harvest was the reduced flyway population of ducks due to continuing drouth on the breeding grounds. This in turn was reflected in unattractive restrictive seasons and reduced hunting opportunity. Some of these factors are temporary, and participation should increase as the waterfowl population recovers and seasons become more attractive.

Distribution of hunting activity and hunting success by regions, corresponding to those shown in Figure 7.12 are shown in Table 7.5. Data from 1960 were used since it is more representative than the temporarily restrictive seasons of recent years.

Table 7.5. Waterfowl harvests by species for three high years and three low years.

	1957	1958	1959	3 Year Average	1964	1965	1966	3 Year Average
Mallard	365,257	247,115	206,455	239,609	105,656	65,120	153,218	107,998
Pintail	46,006	20,036	15,599	27,214	7,774	10,019	11,472	9,755
B.W. Teal	107,346	48,007	22,939	59,457	10,954	18,671	15,296	14,973
G.W. Teal	82,252	56,992	28,139	55,794	31,096	31,877	36,456	33,143
Gadwall	12,547	8,905	7,647	9,700	4,241	4,402	7,648	5,430
Baldpate	5,576	4,453	6,423	5,484	3,357	4,706	5,100	4,387
Shoveller	12,547	8,015	3,364	7,975	2,827	3,340	3,824	3,330
Scaup	8,365	5,788	6,117	6,780	3,357	5,312	7,648	5,439
Redhead	7,668	3,117	2,141	4,309	1,590	2,125	3,060	2,258
Canvasback	6,273	3,117	3,059	4,149	1,060	1,518	2,040	1,539
Merganser	2,091	1,336	918	1,432	530	607	2,549	1,229
Other Ducks	41,126	38,291	3,059	27,492	4,241	4,098	6,628	4,989
Total Ducks	697,055	445,252	305,360	482,722	176,683	151,795	254,939	194,472
Coots	12,755	4,665	2,070	6,497	1,150	630	1,252	1,011
Canada	5,587	9,809	9,492	8,300	7,312	6,036	9,691	7,680
Whitefront	1,125	3,307	938	1,790	545	205	372	374
Snow & Blue	4,962	8,401	5,184	6,182	5,134	6,718	5,256	5,703
Unknown	825	827	286	646	626	696	186	503
Total Geese	12,499	22,343	15,900	16,914	13,617	13,655	15,505	14,267
Snipe	2,500	3,654	5,084	3,746	3,448	1,823	2,278	2,516
Active Waterfowl hunters	64,100	56,200	41,100		25,349	18,114	28,453	23,972

Table 7.6. Duck harvest data by region(1) - 1960 season

	Sandhills	North Platte	Republican	Central	North East	South East	Missouri
% of hunters	14.7	17.7	5.7	27.7	2.7	16.4	15.2
% of days	9.8	19.2	4.6	30.3	3.4	15.1	17.5
% of ducks	15.8	23.4	4.6	22.5	1.9	19.0	12.7
Av. season bag	7.9	9.7	6.0	6.0	5.3	8.6	6.2
Ducks/day	1.64	1.24	1.02	0.75	0.57	1.28	0.74

(1) See Figure 7.12 for regional breakdown.

Figure 7.12. Regions used for analysis of waterfowl harvest data.

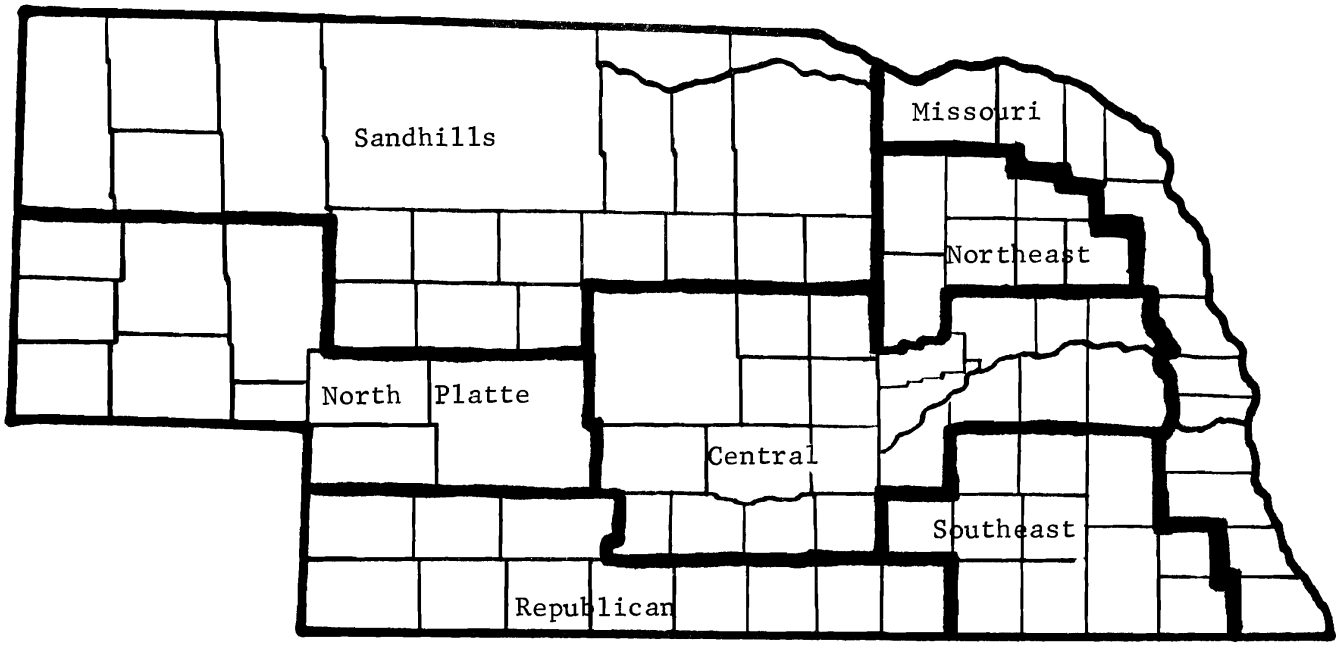
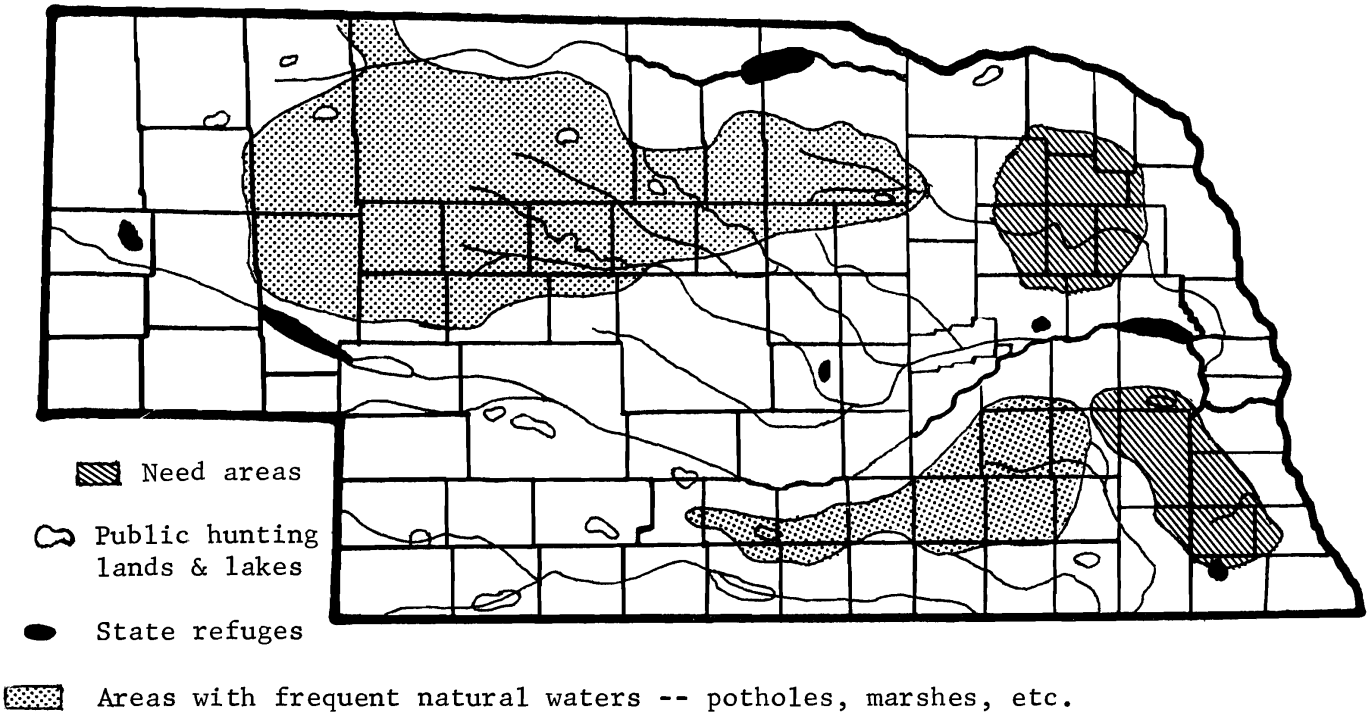


Figure 7.13. Waterfowl range map.



Waterfowl hunting opportunity, as well as production, is dependent on available water and wetland areas. Streams and rivers, rain-water basins of southcentral Nebraska, reservoirs, natural lakes of the Sandhills, and farm ponds provide the available water area for waterfowl hunting in Nebraska. Distribution of the primary harvest areas is shown in Figure 7.13.

Not all of the shaded areas shown in Figure 7.13 are important waterfowl harvest areas. The shaded sandhills region in the northcentral part of the State has large sections void of lakes and wetlands. A large part of the Sandhills is not accessible to hunters due to lack of roads. Other portions are closed to public hunting by the landowners. Because of the large number of lakes and wetlands, however, this expansive area provides excellent early season hunting and is an important harvest area.

The rain-basin area in southcentral Nebraska is an important harvest area during years of normal or above normal rainfall. The number of basins was once far more numerous than today. About 80 to 85 percent of the original basins have been lost to drainage, land leveling and siltation. Most basins are highly accessible but few private basins are available for public waterfowl hunting. Hunting privilege leases and the restriction of hunting rights to friends and relatives precludes most public hunting opportunity. Continued acquisition of waterfowl production lands in this area will provide some public access to hunting opportunity.

The primary stream harvest areas are the Missouri River, particularly in the northeast and an area immediately north of Omaha (especially for geese); the Platte River system, especially adjacent to the Dodge-Saunders Refuge, the Kearney-Lexington area, the North and South Platte Rivers near North Platte and the North Platte River from Lake McConaughy west to the Wyoming State line; and the lower reaches of the Loup River in Howard and Nance counties.

Virtually all the major hunting areas along the Platte River system are leased by individuals or groups. Public waterfowl hunting lands are highly limited throughout the State.

Availability of Game for Public Hunting

Over 97 percent of the State's land area is in private ownership. Obviously, most game must be produced and harvested on private land. Access to this game for outdoor recreation, particularly hunting, is at the sufferance of individual land holders.

Access for hunting is a major problem in utilization of the game resource by the public. This is particularly true in the eastern portion of the State where the human population is centered and the demand for hunting grounds is the greatest.

Most of the better waterfowl areas are leased by individuals or groups and are not available for public hunting. This is especially true along the Platte and Missouri Rivers and in parts of the rainwater-basin area of southcentral Nebraska. The Sandhills still contain a number of waterfowl areas

Table 7.7. Summary of public lands available for non-urban outdoor recreation.

Level of Government	Agency	Areas	Number of Acres in Class I	II	III	IV	V	VI	Total
Federal	Forest Service	Bessey Div. of Nebraska National Forest		200	90,244				90,444
		Niobrara Div. of Nebraska National Forest			115,638				115,638
		Pine Ridge Division of Nebraska National Forest			39,327				39,327
		Oglala National Grasslands			94,307				94,307
		Sub-total		200	339,516				339,716
	National Park Service	Scotts Bluff Nat'l Monument	5					2,194	2,199
		Agate Springs Fossil Beds National Monument			2,997				2,997
		Homestead Nat'l Monument						163	163(1)
		Sub-total	5		2,997			2,357	5,359
	Corps of Engineers	Harlan County Reservoir		2,000	28,278				30,278(1)
	Bureau of Sport Fisheries and Wildlife	Valentine National Wildlife Refuge			71,516				71,516
		Fort Niobrara National Wildlife Refuge			18,954				18,954
		DeSoto National Wildlife Refuge	530	1,700	5,160				7,390

		Crescent Lake National Wildlife Refuge			46,350			46,350
		North Platte Valley National Wildlife Refuge			5,107			5,107
		Crawford National Fish Hatchery			501			501
		24 Waterfowl Production Areas in Six Counties			5,553			5,553
		Sub-total	530	1,700	153,141			155,371
State	Nebraska Game and Parks Commission	5 State Parks		1,824	1,176			3,000
		53 State Recreation Areas	3,003	10,739	107,746			121,488
		20 State Wayside Areas	472					472
		6 State Historical Parks			121	6	1,063	1,190
		66 State Special Use Areas		366	45,078			45,444
		2 State Lands Not Designated and Undeveloped			10,637			10,637
		Sub-total	3,475	12,929	164,758	6	1,063	182,231
Other		Lake North-Loup Power District	350	700	200			1,250
		Chimney Rock					83	83
		Fontenelle Forest			1,300			1,300
		Sub-total	350	700	1,500		83	2,633
	Totals		4,360	17,529	690,190	6	3,503	715,588

which are open to public hunting with permission. The principal problem areas for access are in the eastern one-third of the State.

Access is less of a problem for big game because of the few numbers of hunters involved. Landowners have a more open attitude to big-game hunting and often use the seasons and hunting pressure for controlling depredation and accomplishing the removal of excess animals.

INVENTORY OF PUBLIC OR QUASI-PUBLIC LANDS AVAILABLE FOR OUTDOOR RECREATION

Typical of land ownership in states of the Central Plains Region, public lands which are suitable for traditional outdoor recreation activities are quite limited.

Inventories of public lands available for non-urban outdoor recreation indicate 715,588 acres (approximately 1.4 per cent of the state area) are controlled by four agencies of the Federal government, quasi-public organizations, or the Nebraska Game and Parks Commission. Approximately 75 per cent of these lands, or 538,553 acres, are owned and managed by Federal agencies, and 182,231 acres or about 25 per cent are owned, leased or operated under license by the Nebraska Game and Parks Commission. Less than one per cent are operated by other organizations, Table 7.7. Distribution of non-urban lands is shown in Figure 7.14.

Lands were classified for recreation according to the scheme developed by the Outdoor Recreation Resources Review Commission. In general, Class I lands are designated as high-density areas; Class II as general outdoor recreation; Class III as natural environment; Class IV as outstanding natural areas; Class V as primitive areas; and Class VI as historic or cultural sites. Criteria used in classification of sites are presented in Appendix B. 3.

Class III lands make up 96 per cent of the public non-urban lands; 2.5 per cent is Class II lands; and all other classes comprise slightly more than one per cent of the total non-urban public lands. With the notable exception of the National Park Service, lands owned by Federal agencies supply only a small fraction of recreation land classes other than Class III.

The relatively high percentage of Class III lands (90%) under lease or ownership by the State is misleading. Approximately 50 percent or 79,452 acres listed as Class III is water area in excess of 1,500 surface acres. Lake McConaughy alone contains 34,700 acres of surface water.

Federal Lands

Forest Service

The Forest Service is the largest public landowner in the State with 339,873 acres in three divisions of the Nebraska National Forest and the Oglala National Grasslands. These holdings account for about 48 percent of all

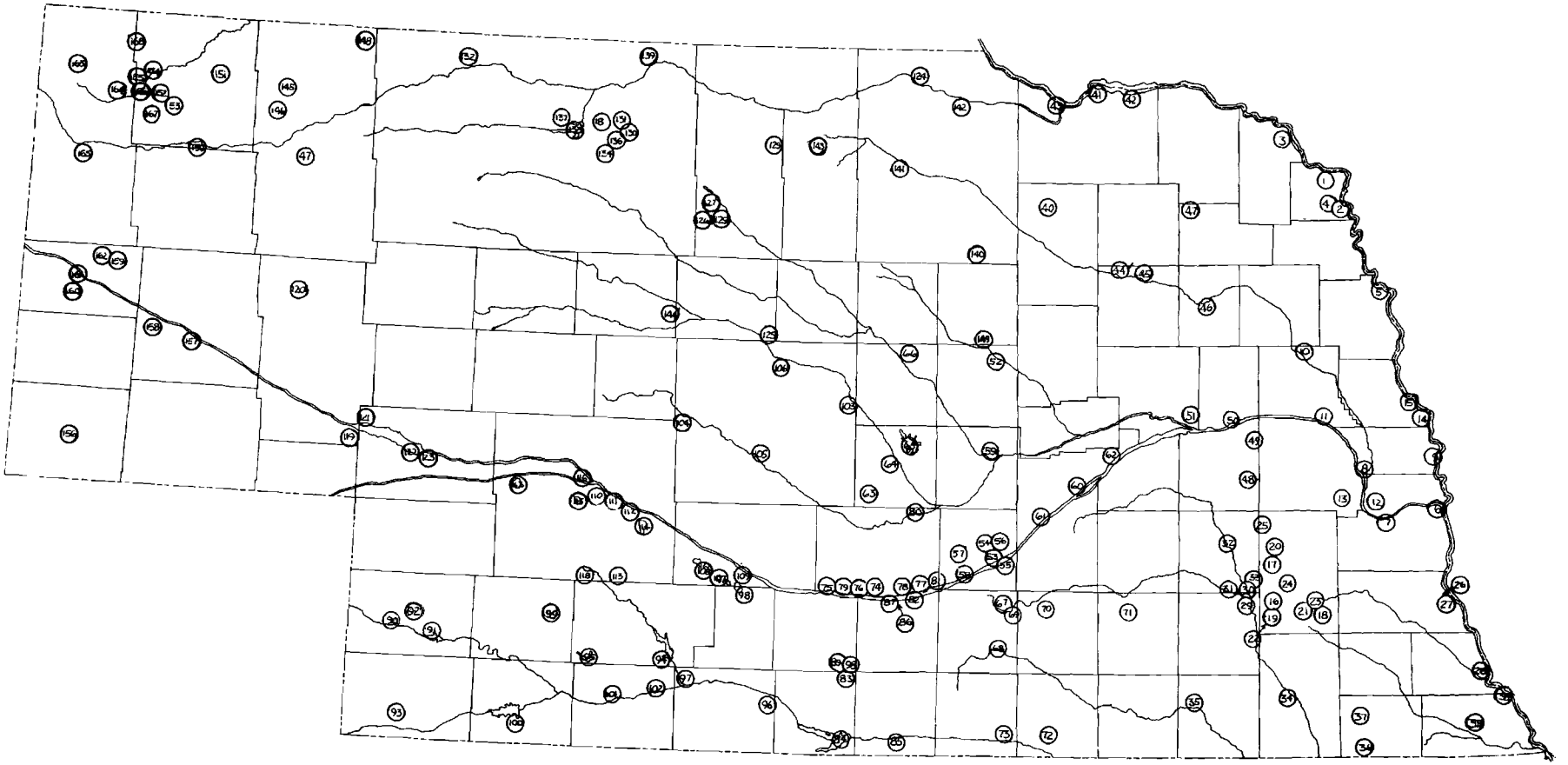


Figure 7.14 Distribution of public non-urban outdoor recreation lands

1. Crystal Lake SWA
2. Omadi Bend SRA
3. Ponca State Park
4. Basswood Ridge SUA
5. Middle Decatur Bend SUA
6. Plattsmouth Waterfowl Management Area
7. Louisville SRA
8. Two Rivers SRA
9. Fontenelle Forest
10. Dead Timbers SRA
11. Fremont SRA
12. Schram Tract
13. Memphis SRA
14. Ft. Atkinson SHP
15. DeSoto Bend NWR
16. Bluestem SRA
17. Conestoga SRA
18. Hedgefield SUA
19. Olive Creek SRA
20. Pawnee SRA
21. Stagecoach SRA
22. Teal SUA
23. Wagon Train SRA
24. Yankee Hill SRA
25. Branched Oak SRA
26. Arbor Lodge SHP
27. Riverview SRA
28. Brownville SRA
29. Shady Trail SUA
30. Blue Bluff SUA
31. Blue River SWA
32. Blue Valley SWA
33. Twin Lakes SRA
34. Homestead Nat'l. Mon.
35. Alexandria SRA
36. Pawnee Prairie SUA
37. Burchard Lake SUA
38. Indian Cave State Park
39. Verdon SRA
40. Grove Lake SUA
41. Bazile Creek SUA
42. Lewis and Clark SRA
43. Niobrara State Park
44. Millstone SWA
45. Yellowbanks SUA
46. Wood Duck SUA
47. Sioux Strip SUA
48. Brainard Game Prod. Area
49. Abie Game Prod. Area
50. Whitetail SUA
51. Loup Park and Lake North
52. Chalk Mine SWA
53. Biberness Tract SUA
54. Cornhusker SUA
55. Grand Island Inter. SRA
56. Stolley SRA
57. Wood River East SWA
58. Wood River West SUA
59. North Loup SWA
60. Hord Lake SRA
61. Longbridge SUA
62. Mormon Trail SWA
63. Beaver Creek SWA
64. Bowman Lake SRA
65. Sherman Reservoir SRA
66. Fort Hartsuff SHP
67. American Legion Memorial SWA
68. Crystal Lake SRA
69. DLD SWA
70. Pintail Marsh SUA
71. Crosstrails SWA
72. Smartweed Marsh SUA
73. Republican Valley SWA
74. Cottonmill SRA
75. Elm Creek SUA
76. Freeze Tract SUA
77. Gibbon Inter. SWA
78. Neward Inter. SUA
79. Odessa Inter. SWA
80. Ravenna SRA
81. Shelton Inter. SWA
82. Zwink Tract SUA
83. South Sacramento SUA
84. Harlan County Res.
85. Limestone Bluffs SUA
86. Ft. Kearny SHP
87. Kearney State Rec. Area
88. Sacramento-Wilcox SUA
89. West Sacramento SUA
90. Champion SRA
91. Enders SRA
92. Wanamaker SUA
93. Rock Creek SRA
94. Medicine Creek SRA
95. Red Willow SRA
96. Oxford SUA
97. Cambridge Div. Dam SUA
98. Johnson Lake SRA
99. Hayes Center SUA
100. Swanson Res. SRA
101. Red Willow Div. Dam SUA
102. Bartley Div. Dam SUA
103. Arcadia Div. Dam SUA
104. Arnold SRA
105. Pressey SUA
106. Victoria Springs SRA
107. Gallager Canyon SRA
108. Midway SUA
109. Plum Creek SUA
110. Box Elder Canyon SUA
111. Cottonwood Canyon SUA
112. Fort McPherson SWA
113. Hansen Mem. Reserve
114. Jeffrey Lake SUA
115. Maloney SRA
116. Scouts Rest Ranch SHP
117. Sutherland Res. SUA
118. Wellfleet SUA
119. Ash Hollow SHP
120. Crescent Lake NWR
121. Clear Creek SUA
122. Lake McConaughy SRA
123. Lake Ogallala SRA
124. Hull Lake SUA
125. Milburn SUA
126. American Game Marsh SUA
127. Long Lake SRA
128. Long Pine SRA
129. South Twin Lake SUA
130. Ballards Marsh SUA
131. Big Alkali Lake SUA
132. Cottonwood Lake SRA
133. Merritt Reservoir SRA
134. Rat and Beaver Lake SUA
135. Schlagel Creek SUA
136. Willow Lake SUA
137. Niobrara Div. Nebraska National Forest
138. Valentine NWR
139. Ft. Niobrara NWR
140. Goose Lake SUA
141. Atkinson SRA
142. Spencer Dam SWA
143. Pony Lake SUA
144. Bessey Div. Nebraska National Forest
145. Metcalf SUA
146. Walgren Lake SRA
147. Smith Lake SUA
148. Rush Lake SUA
149. Pibel Lake SRA
150. Box Butte Reservoir SRA
151. Chadron State Park
152. Cochran SWA
152. Ponderosa SUA
154. Crawford Nat'l. Fish Hatchery
155. James Ranch
156. Lodgepole SWA
157. Bridgeport SRA
158. Chimney Rock
159. Lake Minatare SRA
160. Wildcat Hills SRA
161. Scotts Bluff Nat'l. Mon.
162. North Platte River SUA
163. Gilbert-Baker SUA
164. Peterson SUA
165. Agate Fossil Beds National Monument
166. Fort Robinson
167. Pine Ridge Div. Nebraska National Forest
168. Oglala Nat'l. Grasslands

SHP -- State Historical Park
SRA -- State Recreation Area
SWA -- State Wayside Area
SUA -- Special Use Area
NWR -- National Wildlife Refuge

public lands and about 64 per cent of the Federal lands available for outdoor recreation.

Under existing conditions and management, only 200 acres have been designated as general outdoor recreation lands which provide a range of outdoor activities. The remaining lands have been designated as Class III. Although recreation facilities are minimal, these lands are extremely important as a recreation resource in Nebraska because of the large acreage available for hunting, nature study, sightseeing, hiking and walking, horseback riding and primitive camping. Other extensive areas for these activities are highly limited.

The Bessey and Niobrara Divisions of the Nebraska National Forest both feature large afforested areas of coniferous trees in native mid-prairie grasslands. The Bessey Division contains the largest afforested area in the world. Located adjacent to Highway 2, the large coniferous forest springing from the Sandhill grasslands provides a major attraction to tourists. Although a forest fire destroyed much of the afforested area in 1965, the area remains unique and of considerable importance as a recreation resource. Well developed campsites and a picnic area are available at the entrance. Excellent facilities for a 4-H group camp are also located on the area.

The Pine Ridge Division of the Nebraska National Forest is in a region which is becoming one of the major vacation and tourist areas in the State. These areas are among the most scenic in the State, and are especially important for public hunting of deer and wild turkey, sightseeing, camping and hiking and walking. In cooperation with the Job Corps, additional recreation facilities are being provided. A major recreation area providing a wide range of activities has been planned around a planned small reservoir on Bordeaux Creek. The development of small camping and picnicking sites and Toadstool Park add measureably to the recreation opportunities provided in the scenic Pine Ridge country.

Bureau of Sport Fisheries and Wildlife

This agency controls and manages 155,371 acres, including four wildlife refuges managed primarily for waterfowl, one big-game refuge and 24 rain-basin areas which are managed for waterfowl production in six counties of southcentral Nebraska. These lands account for about 21.8 percent of all public lands and 29.2 percent of the Federal lands.

Management of the lands as refuges curtails public use for outdoor recreation. Only DeSoto Bend National Wildlife Refuge, located on the Missouri River and easily accessible to residents of the Omaha area, has developed facilities for a range of outdoor recreation activities. Because of easy access in a highly populated area, 530 acres have been designated for high-intensity use (Class I) and 1,700 acres for general outdoor recreation (Class II). The remaining lands have been placed in Class III, natural environment, but public use is limited to only portions of the Class III lands. Special deer seasons have provided some recreational use of this resource on the refuge.

Use of lands included in Crescent Lake and Valentine Refuges for hunting, or other activities which do not require developed facilities is limited to some extent because of the refuge status. Both areas, however, provide considerable opportunity for public fishing. The vast majority of acres included in both refuges are upland grasslands. These refuges have a substantial population of prairie grouse and a huntable population of deer. A small population of antelope occurs on the Crescent Lake Refuge. In recent years, hunting has been permitted on these refuges for upland game and big game in designated areas and during periods when the activity does not conflict with management as waterfowl refuges.

The popular Fort Niobrara National Wildlife Refuge features exhibition of wildlife species and longhorn cattle in a natural grasslands habitat. Species of major interest include buffalo, American elk, prairie dogs and longhorn cattle. Thus, the primary value of this area for outdoor recreation is sightseeing and natural history. Plans have been developed for managing the refuge's animal and land resources for maximum public use and to assist the public in enjoying these features. The key facility will be a handsome and unique interpretive center.

With the exception of DeSoto Bend, primary recreation provided by the National Wildlife Refuges is fishing, sightseeing, photography and nature study.

Rain-basin areas, purchased and managed for waterfowl production in south-central Nebraska, afford opportunity for public waterfowl hunting in a region highly limited in these activities. By September 1, 1967, 24 basins totaling 5,553 acres had been purchased. Approximately 80 to 85 per cent of the basins of this type have been destroyed by land leveling and drainage during the past 40 years. Public ownership of additional basins is highly desirable to insure the waterfowl resource and provide the sporting public an opportunity for continued waterfowl hunting.

National Park Service

The National Park Service owns and manages three National Monuments totaling 5,359 acres. The Homestead National Monument, located near Beatrice in Gage County, features the first homestead filed in Nebraska under the Homestead Act. Scottsbluff National Monument features the historic landmark viewed by westward emigrants as they traveled the Oregon and Mormon Trails through the North Platte Valley. Interpretive facilities are provided at each site. Both monuments provide a valuable link to the past and the development of the Nebraska Territory and the western United States. Agate Fossil Beds National Monument in Sioux County is currently under development. On this site, one of the richest paleontological sites in the Nation, the Park Service plans to expose and interpret representative fossil remains.[4]

Corps of Engineers

This agency manages recreation facilities at Harlan County Reservoir in southcentral Nebraska and at Gavins Point Dam in northeast Nebraska. Harlan

---

[4]U.S. Department of the Interior, National Park Service. 1964. Parks for America. U.S. Government Printing Office, Washington, D.C. p. 299.

County Reservoir includes about 31,000 acres of which about 13,600 acres is water. At Gavins Point Dam, the Corps operates a major recreation area at the dam site. Both areas provide a wide range of activities including picnicking, camping, boating, fishing and sightseeing.

Quasi-Public and Other

Three areas are managed by quasi-public organizations or a municipality in cooperation with a state agency. Although total acreage is small, these areas are valuable additions to the state's total recreation resources.

The Fontenelle Forest, managed by the Fontenelle Forest Association, is a natural area and registered National natural landmark totaling 1,300 acres,[5] and is managed to preserve the vegetation as a primeval plant community. Traffic is limited to foot trails.

Located along the Missouri River in Sarpy County, the area is accessible to residents of metropolitan Omaha for nature study, conservation education, pleasure walking and outdoor photography.

Loup Park and Lake North Recreation Area is located in Platte County and includes 1,250 acres of which 900 is water. The area is owned and managed by the Loup Power District and provides a wide range of outdoor activities. It is readily accessible to residents of Columbus.

Chimney Rock, one of the prominent historical landmarks of the Oregon and Mormon Trails in the North Platte River Valley, is managed cooperatively by the City of Bayard, the State Historical Society and the National Park Service. A small roadside pulloff with picnic and interpretive facilities serves as an important and interesting roadside area for both residents and nonresidents who are interested in the history of westward migration.

Nebraska Game and Parks Commission

The Commission owns or leases 152 areas totaling 182,231 acres. Included are five state parks, 20 state wayside areas, six state historical parks, 53 state recreation areas and 66 special use areas.

State Parks

State parks are defined as those parks of substantial area with the primary value of significant statewide scenic, scientific or historic interest, having a complete development potential and, where possible, a representative portion which can be retained in a natural or relatively undisturbed state.[6]

Location and distribution of these sites are necessarily resource oriented and highly limited. Two of the presently developed state parks occur in the Pine

---

[5] Ibid.

[6] Nebraska Game and Parks Commission. Nebraska Game Laws, 1967-1969. p. 105.

Ridge of Dawes County, while one each is located in Dixon and Knox counties along the Missouri River in northeast Nebraska. Acquisition is in progress for Indian Cave State Park in Richardson County along the Missouri River in southeast Nebraska. Completion of acquisition and development of this area will provide a facility with a wide range of outdoor recreation activities, including water-oriented activities, in an environment of mature timber and river-bluffs. Access is readily available to the densely populated areas of Lincoln and Omaha.

The smallest of the designated state parks is Fort Robinson in Dawes County with 75 acres. However, 10,295 acres adjacent to the military reservation was purchased in 1966 and 1967 and will ultimately be included in the state park. With additional planned acquisition and development, this will be the largest state park in Nebraska, offering a complete vacation potential and a wide range of quality outdoor recreational activities.

Although the present Fort Robinson facility is quite small, it has overnight facilities featuring a lodge, cabins, and developed campgrounds and provides an excellent base of operations for recreationists engaging in activities on other public lands and historic sites of the area. The State Historical Society and the University of Nebraska operate interpretive museums which are a part of the total recreation complex. These facilities accurately portray the archeologic, geologic and paleontologic aspects of the area.

Acquisition of lands for Indian Cave State Park in Richardson and Nemaha Counties is currently in progress. When completed, this state park will include over 3,000 acres of high-quality recreation lands adjacent to and overlooking the Missouri River.

Chadron State Park includes 805 acres of which 164 are owned by the Nebraska Game and Parks Commission and 640 acres are leased from the State Board of Educational Lands and Funds. Most of the recreation facilities are on leased land and action is now being taken by the Commission to acquire title.

Size of Ponca and Niobrara State Parks is less than desirable to provide the quality of outdoor recreation intended for these areas. Potential for expansion of Niobrara State Park is highly limited. However, suitable lands for outdoor recreation are available adjacent to Ponca State Park and steps are currently underway to expand and acquire additional area.

State Recreation Areas

State recreation areas are defined as those areas with a primary value for day use, but with secondary overnight-use facilities or potential, which have reasonable expansion capability, and are located in accordance with sound park management principles.[7]

Location of these sites may be either resource or user oriented. Consequently, recreation areas are generally distributed throughout the State. Location of some of the areas places the facility in the category of a municipal park -- particularly Stolley State Recreation Area which is located within the

---

[7] Ibid.

urban area of Grand Island. Several others service only a highly local population.

Size of many recreation areas is so small that development and use are highly limited. Of the 53 recreation areas, 17, or 32 per cent, are less than 100 acres and 11 per cent are less than 40 acres. Although accounting for 32 per cent of the areas, those less than 100 acres make up less than one per cent of the total acreage. Total acreage included in these areas is itemized by size class in Table 7.8.

About 9.2 per cent of the total lands have been classified as general outdoor recreation, 2.4 per cent as high density recreation and 88.4 per cent as natural environment.

Most of the recreation areas have been oriented to basic water resources including lakes, rivers, sand-pit lakes, and reservoirs. Approximately 93 per cent of all areas contain water suitable for water oriented activity, while water surface comprises 50 per cent, or 79,452 acres of the total area. Only 33 per cent of the areas 40 acres or less in size have water included in the ownership or lease, but most of these provide access to a river or lake not included in the ownership. About 93 per cent of all areas include waters, or provide access to bodies of water having value for recreation, Table 7.9.

All state recreation areas are administered by the Nebraska Game and Parks Commission. Approximately 90 per cent of the total acreage included in these areas is leased by the Commission from federal agencies and quasi-public or other local organizations, Table 7.10. Federal agencies own all of eight recreation areas and parts of nine located in the Salt Creek project in Lancaster and Seward Counties. The Commission holds titles to 30 of the 53 areas and portions of nine previously noted for the Salt Creek project.

State Historical Parks

State historical parks are defined as only those sites which, in the opinion of competent, recognized authorities, are of notable historical significance to the State of Nebraska, of a size adequate to develop the full interpretative potential of the site, and which may be equipped with limited day-use facilities that do not detract from nor interfere with the primary purposes and values thereof.[8]

Nebraska was of particular historical importance during the period of western expansion. The Lewis and Clark Trail follows the length of the Missouri River through eastern Nebraska. The Oregon and Mormon Trails traverse the entire length of Nebraska from east to west. Military outposts were established to protect immigrants from hostile Indians. The Pony Express Trail and its way stations were located through the State from southeast to west. Colorful western

---

[8] Ibid.

Table 7.8. Summary of acreage included in State Recreation Areas by size classes.

Acreage	Areas	Range (Acres)	Total Acreage	% of Areas	% of Total Acreage	% of Acreage in Class I	II	III
40 acres or less	6	13-40	170	11	0.1		100	
41-100	13	43-88	787	25	0.7	5	78	17
101-500	10	128-442	2,052	18	1.7	10	60	30
501-1,000	9	580-964	6,550	17	5.4	24	51	25
1,001-5,000	8	1,032-4,772	16,935	15	14.1	6	21	73
5,001-25,000	6	5,360-9,052	52,139	11	43.3		4	96
Over 25,000	1		41,642	2	34.6		1	99
Totals	53	13-41,642	120,275	100	99.9	6	45	49

Table 7.9. Summary of lands and waters included in State Recreation Areas.

	Acreage	% of Total Acreage	No. Areas	% of All Areas
Land	50,482	42.0	53	100
Wetland	1,004	0.8	2	4
Water	68,789	57.2	43	81
Water on area or adjacent and accessible from area			51	93

Table 7.10. Ownership of State Recreation Areas.

Ownership	Acres	No. Areas	% of Total Acreage	% of Areas
Federal	64,569	19[1]	53.7	35.8[1]
State	11,643	38[1]	9.7	71.7[1]
Quasi-public or other local organizations	44,063	5	36.6	9.4

[1] Includes nine areas of the Salt-Wahoo Watershed in Lancaster and Seward Counties which are owned jointly by the Corps of Engineers and Nebraska Game and Parks Commission but managed by the latter agency.

Table 7.11. Summary of recreation lands by size classes for State Special Use Areas.

Acreage	No. Areas	Range (Acres)	Total Acreage	% of Areas	% of Total Acreage	% of Acreage in Class II	% of Acreage in Class III
40 acres or less	14	3-40	248	21.2	0.6	2.4	97.6
41-100	9	60-93	638	13.6	1.2	11.3	88.7
101-500	19	115-440	4,118	28.8	9.3	1.1	98.9
501-1,000	10	530-899	6,930	15.2	15.7	1.1	98.9
1,001-5,000	13	1,116-3,660	26,223	19.7	59.4	0.3	99.7
5,001-25,000	1		6,009	1.5	13.6	0.0	100.0
Totals	66	3-6,009	44,166	100.0	99.9	2.7	97.3

characters, military officers, Indian cultures and Indian leaders, statesmen who helped shape the course of the State and Nation, all contributed to a rich historic background. Preservation of sites and accurate restoration of structures together with historical interpretations, contribute to an increased knowledge and appreciation of the past. These activities and resources often have nationwide significance, and contribute greatly to both the non-resident and resident outdoor recreation program.

Financial and legal tools for development and expansion of a state historical park system were not provided until 1959. With additional financing in 1963, the Nebraska Game and Parks Commission expanded from one area, Arbor Lodge, to seven sites satisfying the requirements for historical parks. Two areas, Fort Kearny and Scouts Rest Ranch -- the home of Buffalo Bill Cody -- have been developed since 1963. Fort Hartsuff in Valley County is currently under development and Fort Atkinson in Douglas County has been acquired and is scheduled for development. Negotiations are in progress to complete the acquisition of Ash Hollow, an important campsite along the Oregon Trail. These sites are of inestimable value to the State as historic and recreation resources, for each is unique and irreplaceable.

With the exception of Arbor Lodge, which provides minimum picnic facilities, activities at state historical parks are limited to viewing and interpretation of historic sites.

Ownership of the present 1,190 acres in this category is vested in the Nebraska Game and Parks Commission.

State Wayside Areas

State wayside areas are defined as those areas appropriate in size and location at strategic intervals adjacent to main traveled highways to provide safe rest and picnic stops for travelers, selected for scenic or historical interest when possible, equipped with safe approach and departure lanes, and developed in such a manner and with such facilities as are appropriate to their purpose.[9]

The program for acquisition and development of state wayside areas has been accelerated with financing provided by the 1963 legislature. In September, 1967, 20 sites totaling about 479 acres were included in this category. Areas range in size from approximately three acres to 168 acres.

Location and the primary purpose of wayside areas demand development for high density use. Primary developments are picnicking and camping facilities oriented to lakes or scenic landscapes when possible. Ownership and management of each area is vested in the Commission.

State Special Use Areas

State special use areas are defined as those areas which are primarily of

---

[9] Ibid.

public hunting, fishing, or other wildlife values, and which cannot logically be classified in one of the other categories, when so designated by the Commission to be maintained from fish and game funds.[10] Included in this category are such areas as wildlife refuges, game management areas, access sites to reservoirs or rivers, natural areas and reservoirs which have not been developed for day use.

In September, 1967, 66 areas totaling 44,166 acres were included in this category. Of these, 43 or 65.2 per cent were larger than 100 acres, while 21.2 per cent were less than 40 acres, Table 7.11. Size of individual areas ranges from about three acres to the 6,009-acre Clear Creek Refuge.

Day-use facilities are limited to a minimum on Special Use Areas. Only about 2.7 per cent of the total acreage has been placed in Class II, general outdoor recreation. The remaining 97.3 per cent of the acreage of Special Use Areas was classified as natural environment (Class III).

Establishment of Special Use Areas has been largely directed toward water resources suitable for some type of water-oriented activity. A summary of water areas by size classes is shown in Table 7.12. Forty-two, or 63.6 per cent, of the areas contain some water other than marsh; 13 areas, or 19.7 per cent, contain bodies of water in excess of 100 acres. Of the 24 areas which do not include water in the ownership, seven provide access to water areas and 6 have extensive marsh areas. Total acreage of lands and waters administered as special use areas is shown in Table 7.13.

Ownership of 74.2 per cent of the areas is vested in the Nebraska Game and Parks Commission while 61.2 per cent of the total acreage of lands and waters is owned by this management agency. Most of the remaining acreage is included in federal or quasi-public reservoirs under a management agreement or lease with the Commission, Table 7.14.

Regional Analysis of Public Lands and Facilities Available for Non-Urban Outdoor Recreation

Public lands available for non-urban outdoor recreation have been itemized on the basis of socio-economic regions noted in the chapter on demand. Distribution of recreation lands by socio-economic area is shown in Figure 7.14, Table 7.15 and Appendix B.4. Potential classifications are subject to critical review in future planning.

Participation in various activities reflects available facilities and management of existing areas. To a lesser and unknown degree, participation may also reflect people's primary interests. Sophisticated facilities may not be provided for all activities listed in Table 7.17 and Appendix B.4., but the area is used and access is provided if the activity is shown. For instance, sites may not be designed specifically for tent camping but, if shown as an activity, the area is being used by tent campers in its present state. Few areas have interpretive facilities for nature study but virtually all areas provide access for field observation of wildlife and various species of plants. A body of water

---

[10] Ibid.

Table 7.12. Summary of water areas by size classes for State Special Use Areas.

Size Class (Acres)	No. Areas	Per Cent of All Areas
0	24[1]	36.4
1-20	16[2]	24.2
21-40	7	10.6
41-100	6	9.1
101-500	9	13.6
501-1,000	1	1.5
1,001-5,000	3	4.5

[1] Seven areas also provide access to large bodies of water.

[2] Four areas also provide access to large bodies of water.

Table 7.13. Summary of lands and waters of State Special Use Areas.

	Acreage	% of Total Acreage	No. Areas	% of All Areas
Land	32,896	74.5	64	96.8
Wetlands	1,981	4.5	12	18.2
Water	9,289	21.0	42	63.6
Totals	44,166	100.0		

Table 7.14. Summary of ownership for State Special Use Areas.

Ownership	Acres	No. Areas	% of Total Acreage	% of All Areas
Federal				
Reservoirs	7,417	6	16.8	9.1
Public Domain	211	3	0.5	4.5
State	27,019	49	61.2	74.2
Other Local or Quasi-Public	9,377	6	21.2	9.1
(Public power or irrigation companies)				
Private	142	2[1]	.3	3.0
Totals	44,166	66	100.0	99.9

[1] Contains one area with 42 acres in State ownership.

Table 7.15. Summary of public lands available for non-urban outdoor recreation by regions and by administrative classes. (See Appendix B.4.)

	Acres			
	Land	Wetland	Water	Total
Socio-Economic Area I (South Sioux City)				
1 State Park	536			536
1 State Recreation Area	33			33
1 State Wayside Area	34		22	56
1 State Special Use Area	320			320
Sub-Total	923		22	945
Socio-Economic Area II (Omaha)				
1 State Historical Park	147			147
5 State Recreation Areas	1,552	4	678	2,234
2 State Special Use Areas	1,321		29	1,350
1 State Lands - Not designated	330			330
1 National Wildlife Refuge	6,320	20	1,050	7,390
1 Quasi-Public Area	1,300			1,300
Sub-Total	10,970	24	1,757	12,751
Socio-Economic Area III (Lincoln)				
1 State Historical Park	65			65
11 State Recreation Areas	9,111		4,245	13,356
2 State Wayside Areas	23			23
4 State Special Use Areas	144		72	216
1 F&WS Wetlands	123	37		160
Sub-Total	9,466	37	4,317	13,820
Socio-Economic Area IV (Beatrice)				
1 State Park	1,176			1,176
2 State Recreation Areas	424		91	515
2 State Special Use Areas	1,192		168	1,360
1 National Monument	163			163
Sub-Total	2,955		259	3,214

Table 7.15. (continued)

	Acres			
	Land	Wetland	Water	Total
Socio-Economic Area V (Norfolk)				
1 State Park	405		3	408
1 State Recreation Area	1,221		7,349	8,570
1 State Wayside Area	4			4
5 State Special Use Areas	4,597	10	86	4,693
Sub-Total	6,227	10	7,438	13,675
Socio-Economic Area VI (Columbus)				
3 State Special Use Areas	194		31	225
1 Quasi-public Area	150	200	900	1,250
Sub-Total	344	200	931	1,475
Socio-Economic Area VII (Grand Island)				
1 State Historical Park	15			15
5 State Recreation Areas	3,213		2,920	6,133
5 State Wayside Areas	64		22	86
4 State Special Use Areas	960		137	1,097
Sub-Total	4,252		3,079	7,331
Socio-Economic Area VIII (Hastings)				
1 State Recreation Area	33		30	63
4 State Wayside Areas	24			24
2 State Special Use Areas	46	274		320
17 F&WS Wetlands	1,941	1,452		3,393
Sub-Total	2,044	1,726	30	3,800

Table 7.15. (continued)

	Acres			
	Land	Wetland	Water	Total
Socio-Economic Area IX (Kearney)				
1 State Historical Park	39			39
3 State Recreation Areas	151		60	211
3 State Wayside Areas	174		30	204
8 State Special Use Areas	2,153	1,212	98	3,463
8 F&WS Wetland Areas	675	834		1,509
1 Corps of Engineers (Harlan County Reservoir)	17,278		13,000	30,278
Sub-Total	20,470	2,046	13,188	35,704
Socio-Economic Area X (McCook)				
7 State Recreation Areas	17,918		12,199	30,177
6 State Special Use Areas	392		56	448
3 F&WS Wetland Areas	543	543		1,086
Sub-Total	18,853	543	12,255	31,651
Socio-Economic Area XI (North Platte)				
1 State Historical Park	25			25
4 State Recreation Areas	384		1,428	1,812
1 State Wayside Area	35			35
10 State Special Use Areas	2,976		5,961	8,937
Sub-Total	3,420		7,389	10,809
Socio-Economic Area XII (Ogallala)				
1 State Historical Park	899			899
2 State Recreation Areas	6,281	1,000	35,020	42,301
1 State Special Use Area	5,709		300	6,009
1 National Wildlife Refuge	43,874	1,176	1,300	46,350
Sub-Total	56,763	2,176	36,620	95,559

Table 7.15. (continued)

	Acres			
	Land	Wetland	Water	Total
Socio-Economic Area XIII (Valentine)				
7 State Recreation Areas	6,670		3,104	9,774
1 State Wayside Area	9			9
14 State Special Use Areas	4,282	435	2,450	7,167
2 Divisions - Nebraska National Forest	205,994		88	206,082
2 National Wildlife Refuges	79,566	1,633	9,271	90,470
Sub-Total	296,521	2,068	14,913	313,502
Socio-Economic Area XIV (Scottsbluff)				
4 State Special Use Areas	8,603		6	8,609
1 State Park	803		2	805
1 State Historical Park	75			75
4 State Recreation Areas	2,541		3,828	6,369
2 State Wayside Areas	27		4	31
1 State Area - Not designated	10,307			10,307
1 Quasi-public Area	83			83
1 Division - Nebraska National Forest	39,303		24	39,327
1 National Grassland	94,297		10	94,307
2 National Monuments	5,196			5,196
1 National Fish Hatchery	481		20	501
1 National wildlife Refuge				5,107
Sub-Total	161,716		3,894	170,717
TOTAL	595,695	8,830	106,089	715,721

may be used for swimming although a swimming beach has not been designated and developed.

Warm-water fishing and picnicking are the leading activities, with fishing ranked as one of the top three activities on 61 per cent of the areas and picnicking on 49 per cent. Participation in each activity was listed for 72 per cent of the areas. Hunting small game, driving and sightseeing, camping, hunting waterfowl, nature study, boating and swimming were other leading activities listed in order of relative participation as estimated by management personnel.

A summary of participation in other activities is shown in Table 7.16.

Facilities

Most public non-urban outdoor recreation areas are managed to provide basic and traditional activities which require little specialized equipment. The majority of these activities are oriented to water resources. The basic service supplied by most areas is access to public lands or waters. In many instances only minimum facilities are provided. A summary of facilities by socio-economic region is presented in Table 7.17.

The most common development on non-urban public lands is for picnicking with 193 sites totaling 1,098 acres. There are 94 camping areas totaling 589 acres. It should be noted, however, that the majority of camping areas have no developed facilities nor designated camping spaces. Other facilities of numerical importance are boat access sites, swimming beaches, playgrounds and ice skating areas. The large acreage listed for ice skating is misleading as the inventory lists four reservoirs or natural lakes over one hundred acres that are being used for ice skating. Such large acreages are not needed nor are they desirable for ice skating.

Outdoor Recreation Facilities of Counties

County governments have not taken an active role in providing outdoor recreation facilities. Scotts Bluff County has acquired a 92-acre tract to be used and developed as a nature center. The City of Kimball and Kimball County have acquired and are developing 260 acres as a city-county recreation area. Lancaster and Hall Counties are also moving into the field of outdoor recreation. Other counties may be considering outdoor recreation programs, but to date and within the limits of available information, these are the only counties which have taken positive action.

Outdoor Recreation Resources of Municipalities

Outdoor recreation lands and facilities of Nebraska's municipalities with over 200 population were inventoried in 1967 by personnel of the Nebraska Game and Parks Commission. Quality of facilities and maintenance of areas were also determined for most municipalities.

For those communities with 1,000 population or more, personal contacts were made with a local official and the inventory was taken jointly, where possible,

Table 7.16. Summary of activities provided for and participated in on non-urban areas available for public recreation.

Activity	Times Ranked As One Of Top Three Activities					Areas For Which Activities Listed	
	1	2	3	Total	% of Areas	Number	% of All Areas
Fishing (Warm Water)	51	23	18	92	60.5	111	72
Picnicking	26	33	15	74	48.7	109	72
Hunting (Small Game)	17	19	7	43	28.3	94	62
Driving & Sightseeing	22	6	12	40	26.4	94	62
Camping (Tent)	4	14	20	38	25.0	96	63
Hunting (Waterfowl)	12	13	9	34	22.4	81	53
Nature Study	3	4	13	20	13.2	85	56
Boating (Motor)	7	4	7	18	11.8	39	26
Swimming		10	7	17	11.2	53	35
Camping (Trailer)	2	5	9	16	10.5	98	64
Hunting (Big Game)	5	5	3	13	8.6	50	33
Hiking and Walking		4	3	7	4.6	77	51
Fishing (Cold Water)	1		3	4	2.6	19	10
Boating (Non-Motor)		2	1	3	1.9	72	47
Water-skiing				3	1.9	31	19
Ice Skating						26	17
Skin and Scuba Diving						16	11
Bicycling						10	7
Camping (Group)						6	4
Playing Games and Sports						4	3
Other	1		1	2	1.3	8	5

Note: All waterfowl production areas within same county were tabulated as one.

Table 7.17. Summary of facilities provided on public and quasi-public non-urban lands available for outdoor recreation.

Socio-Economic Area	Facilities										
	Playgrounds		Swimming Beaches		Swimming Pools		Boat Access Sites		Picnicking Sites		
	No. Sites	No. Acres	No. Sites	No. Acres	No.	Square Feet	No. Sites	No. Acres	No. Sites	No. Acres	No. Tables
So. Sioux City	1	1	1	1	1	4,000	2	2	6	33	121
Omaha	5	7	6	13	-	------	12	15	13	116	529
Lincoln	2	2	3	8	-	------	10	29	14	123	263
Beatrice	3	6	-	-	-	------	2	2	5	22	59
Norfolk	2	2	1	1	1	4,000	6	7	10	112	282
Columbus	10	20	1	15	-	------	1	2	1	50	40
Grand Island	5	5	5	5	-	------	5	17	17	109	360
Hastings	1	1	-	-	-	------	-	-	3	16	52
Kearney	1	1	4	4	-	------	2	2	8	26	114
McCook	-	-	4	9	-	------	15	57	21	220	245
North Platte	5	5	6	7	-	------	4	4	17	86	242
Ogallala	-	-	5	73	-	------	4	5	9	50	80
Valentine	2	2	4	7	1	2,700	18	15	20	72	174
Scottsbluff	3	3	6	29	1	4,000	5	6	19	63	378
Totals	40	55	76	172	4	14,700	86	163	163	1,098	2,939

Facilities											
Camping		Golf		Group Camping		Ice Skating		Trails		Cabins	
No. Sites	No. Acres	No. Acres	No. Holes	No. Sites	No. Persons	No. Sites	No. Acres	No.	No. Miles	No. Acres	No. Units
4	19	-	-	-	-	2	30	-	-	1	14
8	144	-	-	-	-	2	701	-	-	-	-
9	81	-	-	-	-	1	4	-	-	-	-
3	9	-	-	-	-	1	4	-	-	-	-
7	105	1	9	1	60	2	5	1	2	1	15
6	15	-	-	3	180	1	200	-	-	-	-
6	19	-	-	1	350	-	-	-	-	-	-
4	11	-	-	-	-	1	5	-	-	-	-
8	16	-	-	-	-	1	2	-	-	-	-
6	24	-	-	-	-	3	215	-	-	-	-
5	18	-	-	-	-	2	40	-	-	2	2
3	25	-	-	-	-	2	2	-	-	-	-
11	38	-	-	-	-	4	109	2	2	1	9
14	65	-	-	1	20	-	-	-	-	1	16
94	589	1	9	6	610	22	1,317	3	4	6	56

Table 7.18. Summary of urban outdoor recreation resources by socio-economic area and size class of cities.

	Inventoried Cities	Recreation Areas	Acres Land	Acres Water	Total Acres
SOCIO-ECONOMIC AREA I (South Sioux City)					
Cities of the First Class	1	4	37		37
Cities of the Second Class	2	2	21		21
Villages	11	13	61	8	69
Total	15	19	119	8	127
SOCIO-ECONOMIC AREA II (Omaha)					
Omaha Metropolitan Area	1	71	2,536	188	2,724
Cities of the First Class	3	25	369		369
Cities of the Second Class	13	32	257		257
Villages	34	31	178		178
Total	51	159	3,340	188	3,528
SOCIO-ECONOMIC AREA III (Lincoln)					
Lincoln Metropolitan Area	1	37	2,230	189	2,419
Cities of the First Class	3	9	117		117
Cities of the Second Class	9	24	243	7	250
Villages	35	37	105		105
Total	48	107	2,695	196	2,891
SOCIO-ECONOMIC AREA IV (Beatrice)					
Cities of the First Class	3	12	231	23	254
Cities of the Second Class	4	13	87	3	90
Villages	27	27	88		88
Total	34	52	406	26	432

Facilities							
Camping			Picnicking			Ice Skating	
No. Sites	No. Acres	No. Units	No. Sites	No. Acres	No. Tables	No. Sites	No. Acres
			2	7	116		
			2	7	77		
			8	14	57		
			12	28	250		
1	5	10	22	126	859	10	12
1	20	8	16	47	278	3	3
			24	51	410	1	4
2	2	20	19	29	186	2	5
4	27	38	81	253	1,733	16	24
1	2	10	26	140	809	8	114
			5	40	174		
2	3	10	32	81	330	3	5
			23	64	79		
3	5	20	86	325	1,392	11	119
1	1	30	9	67	534	1	1
1	2	40	6	20	125	1	3
			12	18	76	1	1
2	3	70	27	105	735	3	5

Facilities (continued)

Trails (Miles)			Group Camp		Playfields			
Bicycle	Bridle	Foot	No. Acres	Capacity	Ball Field	Tennis Court	Basket Ball	Other
					4	1	1	
						2	1	
					3			
					7	3	2	
	2		10	2,000	38	32	12	19
	6	6			4	6		
					14	7	6	
					17	2	4	
	8	6	10	2,000	73	47	22	19
	6	2			30	15	2	34
					1	1		1
	6	2			31	16	2	35
					7	10	1	10
					5	4	1	
					11		2	6
					23	14	4	16

Playgrounds		Swimming (Pool)		Golf			General Quality			
No. Sites	No. Acres	No. Pools	No. Ft.^{2}	No. Areas	No. Holes	No. Acres	Poor	Fair	Good	Excell-ent
3	3							2	1	
2	7	1	3,528						2	
8	19	1	3,690				3	1	6	2
13	29	2	7,218				3	3	9	2
27	151	9	134,337	7	72	430	2	9	36	9
18	39	5	29,615						11	
27	73	8	43,917				1	4	11	2
26	63	3	17,129				1	4	13	3
98	226	25	224,998	7	72	430	4	17	71	14
33	108	7	51,560	3	45	370	1	6	17	3
5	14	2	30,793	1	9	25	1	2	3	2
18	44	6	59,987				4	3	11	1
25	59	1	2,800				9	9	12	
81	225	16	145,140	4	54	395	15	20	43	6
10	28	3	31,804						5	
9	30	4	18,500					1	7	
23	47	1	1,310				5	3	7	1
42	105	8	51,614				5	4	19	1

Table 7.18. (continued)

	Inventoried Cities	Recreation Areas	Acres Land	Acres Water	Total Acres
SOCIO-ECONOMIC AREA V (Norfolk)					
Cities of the First Class	1	7	101		101
Cities of the Second Class	13	28	327	12	339
Villages	25	37	190		190
Total	39	72	618	12	630
SOCIO-ECONOMIC AREA VI (Columbus)					
Cities of the First Class	1	8	130	5	135
Cities of the Second Class	3	4	228	10	238
Villages	17	24	105		105
Total	21	36	463	15	478
SOCIO-ECONOMIC AREA VII (Grand Island)					
Cities of the First Class	1	16	178	4	182
Cities of the Second Class	8	14	173		173
Villages	31	37	116		116
Total	40	67	467	4	471
SOCIO-ECONOMIC AREA VIII (Hastings)					
Cities of the First Class	1	17	142	72	214
Cities of the Second Class	5	15	264		264
Villages	20	36	99		99
Total	26	68	505	72	577

Facilities (continued)

Camping			Picnicking			Ice Skating	
No. Sites	No. Acres	No. Units	No. Sites	No. Acres	No. Tables	No. Sites	No. Acres
1	10	150	2	5	237	1	2
1	1	22	14	31	416	6	12
2	1	20	23	36	241		
4	12	192	39	72	894	7	14
			2	21	167	1	5
1	2	20	5	18	178	2	15
1	1	10	10	14	99		
2	3	30	17	53	444	3	20
			10	13	225	2	2
			12	34	221	2	1
			27	24	146	1	1
			49	71	592	5	4
			11	31	321	3	76
			10	23	126	2	1
			25	13	88	1	3
			46	67	535	6	80

Facilities (continued)

Trails (Miles)			Group Camp		Playfields			
Bicycle	Bridle	Foot	No. Acres	Capacity	Ball Field	Tennis Court	Basket Ball	Other
					4	5	3	2
					10	4	4	9
					16	4		8
					30	13	7	19
					5	3	5	3
					3	2		
					12	3	1	2
					20	8	6	5
		.5			16	9	3	2
					9	4	3	5
					20	2	1	2
		.5			45	15	7	9
					3	2		4
					15	1	2	7
					18	3	2	11

Playgrounds		Swimming (Pool)		Golf			General Quality			
No. Sites	No. Acres	No. Pools	No. Ft.^{2}	No. Areas	No. Holes	No. Acres	Poor	Fair	Good	Excell-ent
9	25	1	706				1	2	1	1
21	52	11	53,352	1	9	45	1	2	6	2
25	70	8	33,090	1	9	20	4	3	9	1
55	147	20	93,448	2	18	65	6	7	16	4
7	13	1	9,000				1	2	4	
3	13	3	19,786	2	27	160			1	2
23	75	3	16,465				4	1	11	1
33	101	7	35,251	2	27	160	5	3	16	3
15	60	1	23,358				2	2	2	7
13	38	7	22,250	1	9	40	1	2	7	2
31	49	3	11,675				9	5	13	1
59	147	11	57,283	1	9	40	12	9	22	10
18	35	4	25,975							
11	40	5	22,230	2	18	102			4	1
29	92	4	15,496				11	8	8	
58	167	13	63,701	2	18	102	11	8	12	1

Table 7.18. (continued)

	Inventoried Cities	Recreation Areas	Acres Land	Acres Water	Total Acres
SOCIO-ECONOMIC AREA IX (Kearney)					
Cities of the First Class	2	6	66		66
Cities of the Second Class	5	14	284		284
Villages	20	25	60		60
Total	27	45	410		410
SOCIO-ECONOMIC AREA X (McCook)					
Cities of the First Class	1	10	78		78
Cities of the Second Class	5	9	152		152
Villages	20	34	249		249
Total	26	53	479		479
SOCIO-ECONOMIC AREA XI (North Platte)					
Cities of the First Class	2	10	296	8	304
Cities of the Second Class	4	19	80	15	95
Villages	18	29	103	4	107
Total	24	58	479	27	506
SOCIO-ECONOMIC AREA XII (Ogallala)					
Cities of the Second Class	4	10	37		37
Villages	8	11	28		28
Total	12	21	65		65

Facilities (continued)

Camping			Picnicking			Ice Skating	
No. Sites	No. Acres	No. Units	No. Sites	No. Acres	No. Tables	No. Sites	No. Acres
			5	19	384		
1	5	50	11	26	139	1	1
			13	12	75	1	1
1	5	50	29	57	598	2	2
1	3	15	2	11	48		
			4	25	88	2	3
			18	20	130		
1	3	15	24	56	266	2	3
			7	22	203		
			10	17	135		
1	2	20	16	16	91		
1	2	20	33	55	429		
1	1	20	6	9	120	1	1
			9	9	48		
1	1	20	15	18	168	1	1

Facilities (continued)

Trails (Miles)			Group Camp		Playfields			
Bicycle	Bridle	Foot	No. Acres	Capacity	Ball Field	Tennis Court	Basket Ball	Other
					4	4	3	13
					6	4	4	4
					12	1		8
					22	9	7	25
					4	5		
					5			2
					13	6	1	4
					22	11	1	6
					17	10		11
					7	2	1	16
					13	2	1	10
					37	14	2	37
					4	5		10
					2	2		2
					6	7		12

Playgrounds		Swimming (Pool)		Golf			General Quality			
No. Sites	No. Acres	No. Pools	No. Ft.^{2}	No. Areas	No. Holes	No. Acres	Poor	Fair	Good	Excellent
5	10	2	19,325						3	1
10	24	4	18,647	2	18	109	2	1	8	1
17	31	4	14,845				9	5	8	3
32	65	10	52,817	2	18	109	11	6	19	5
8	34	1	11,790						4	
7	18	4	14,252				1	2	2	
6	45	7	47,028	1	9	59	8	2	8	6
21	97	12	73,070	1	9	59	9	4	14	6
9	48	2	23,280				1		5	3
10	20	3	20,187				4	1	6	2
22	40	2	9,596				11	9	3	1
41	108	7	53,063				16	10	14	6
5	14	4	16,129					1	5	2
9	10	2	7,925				1	1	7	1
14	24	6	24,054				1	2	12	3

Table 7.18. (continued)

	Inventoried Cities	Recreation Areas	Acres Land	Acres Water	Total Acres
SOCIO-ECONOMIC AREA XIII (Valentine)					
Cities of the Second Class	8	14	1,423	1	1,424
Villages	25	33	135		135
Total	33	47	1,558	1	1,559
SOCIO-ECONOMIC XIV (Scottsbluff)					
Cities of the First Class	4	26	533	4	537
Cities of the Second Class	6	19	510		510
Villages	13	19	50		50
Total	23	64	1,093	4	1,097

Facilities (continued)

Camping			Picnicking			Ice Skating	
No. Sites	No. Acres	No. Units	No. Sites	No. Acres	No. Tables	No. Sites	No. Acres
1	1	10	11	34	196	2	1
3	6	21	16	17	125		
4	7	31	27	51	321	2	1
3	21	100	13	85	317	2	2
1	2	30	11	14	186		
2	1	24	13	13	98		
6	24	154	37	112	601	2	2

Facilities (continued)

Trails (Miles)			Group Camp		Playfields			
Bicycle	Bridle	Foot	No. Acres	Capacity	Ball Field	Tennis Court	Basket Ball	Other
			1	50	11	4	2	12
					7		3	12
			1	50	18	4	5	24
		1	1	150	18	4		18
					10	5	9	9
					5	5	1	4
		1	1	150	33	14	10	31

Playgrounds		Swimming (Pool)		Golf			General Quality			
No. Sites	No. Acres	No. Pools	No. Ft.^{2}	No. Areas	No. Holes	No. Acres	Poor	Fair	Good	Excell-ent
12	47	7	28,250	1	9	100	1		7	4
25	58	1	1,250				9	3	7	1
37	105	8	29,500	1	9	100	10	3	14	5
30	59	4	30,868	1	9			5	9	7
15	38	6	30,599	1	9	43	1	1	8	7
12	18	1	4,264				2	2	9	7
57	117	11	65,731	2	18	43	3	8	26	21

by this official and a representative of the Nebraska Game and Parks Commission. Local officials were also interviewed concerning any immediate additions to lands or facilities.

Normally, local officials were not contacted in communities with less than 1,000 population. In these communities, municipal parks and outdoor recreation facilities were located and inventoried by state personnel. Acreage of lands were estimated as closely as possible by pacing the perimeter or use of plat maps.

Data were tablulated by population class of the communities within each socio-economic area. Villages were considered as those having a population less than 1,000; cities of the second class as those having populations between 1,000 and 5,000; and cities of the first class as those with populations from 5,000 to 100,000. Omaha and Lincoln, representing the metropolitan populations of Nebraska, were considered separately.

Data on lands and facilities are presented in Table 7.18 and Appendix B.5 by socio-economic area.

Villages

The inventory of 304 villages with over 200 people provided data for 393 recreation areas totaling 1,580 acres. Eleven villages, or 3.6 per cent, did not own or administer recreation lands or facilities. Recreation lands administered by the remaining 293 villages varied in size from less than an acre to 60 acres.

Of the villages inventoried, 54 per cent had less than ten acres per 1,000 population and 33 per cent had less than five acres per thousand. About 19 per cent had more than 25 acres per 1,000, Figure 7.15.

Of the areas inventoried, 94 per cent were ten acres or less in size and 83 per cent were five acres or less. Only one park was over 40 acres, Figure 7.16.

Playgrounds, game and sports areas and picnic areas were the most significant outdoor recreation facilities provided by villages. On the 393 areas inventoried, 232 picnic areas, 265 game and sports areas and 281 playgrounds were provided. Eleven villages provided camping areas and 41, or 13.1 per cent, operated swimming pools. Eleven village recreation areas were undeveloped.

To a great extent, activities reflect facility development as is demonstrated in Figure 7.17. Picnicking, playing and viewing games and sports, and playground activities are by far the activities receiving greatest participation in village parks and outdoor recreation areas.

Of the 381 developed recreation areas, 291 were judged for quality of the facilities and maintenance. Data are summarized in Figure 7.18. Seventy-one per cent were judged as being fair, good or excellent. About 29 per cent, or 86 areas, were judged to be of poor quality. The upgrading of this group of areas would add significantly to the total recreational opportunity of village residents.

Figure 7.15. Acres of recreation land per 1,000 population for 304 villages in Nebraska with over 100 population.

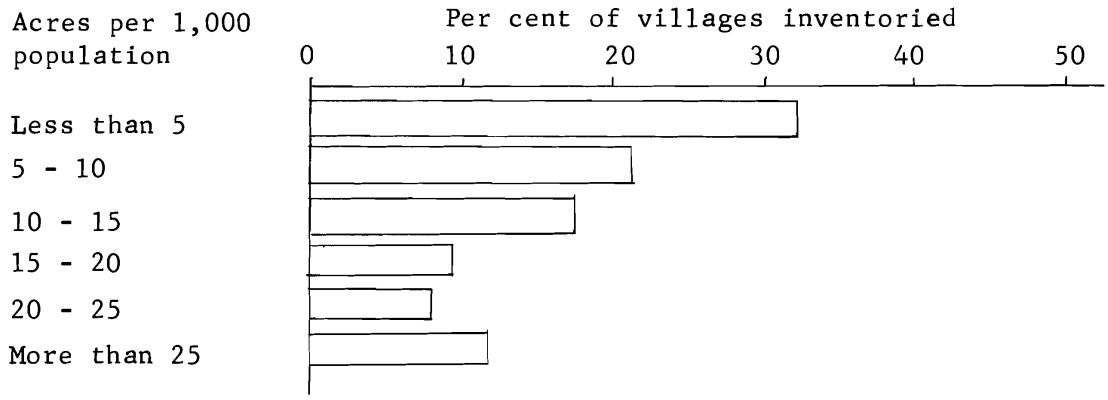


Figure 7.16. Summary of size of recreation areas administered by 304 villages in Nebraska.

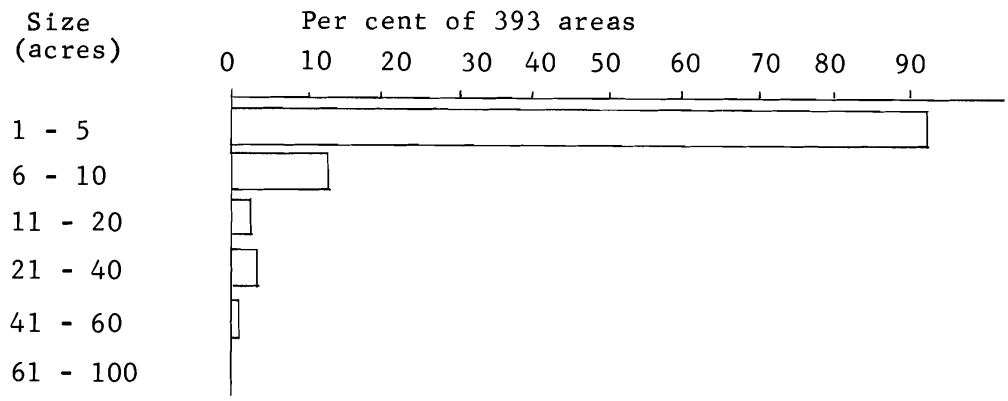


Figure 7.17. Summary of activities provided and participated in by the most people on an annual basis on 393 recreation areas in 304 villages in Nebraska.

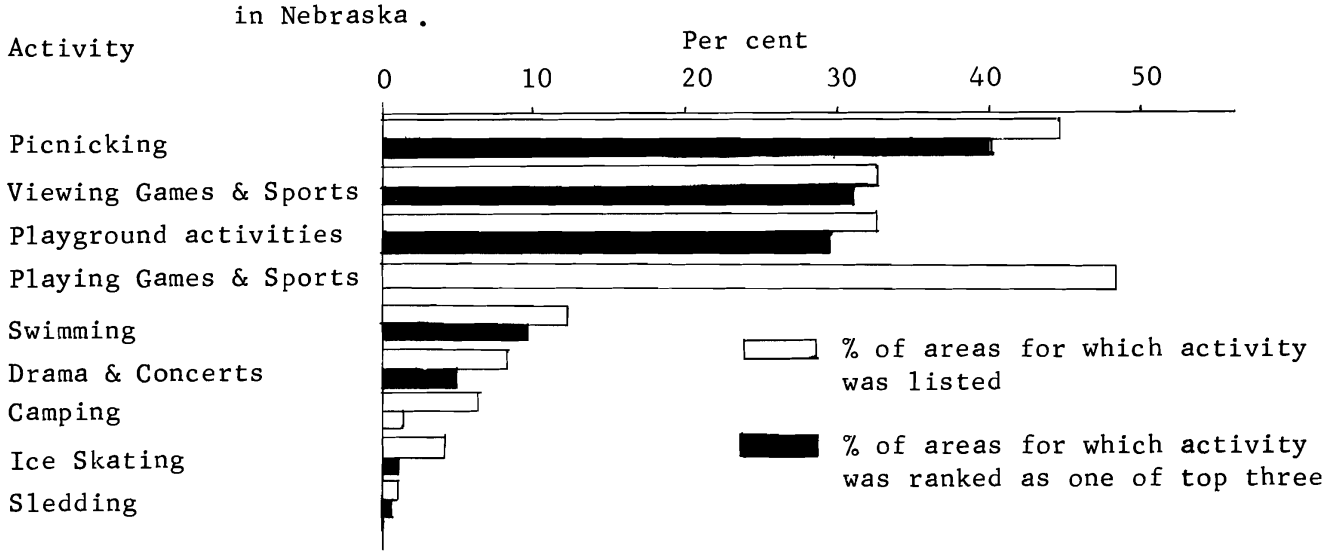


Figure 7.18. Summary of quality of facilities and maintenance of 291 areas operated by villages.

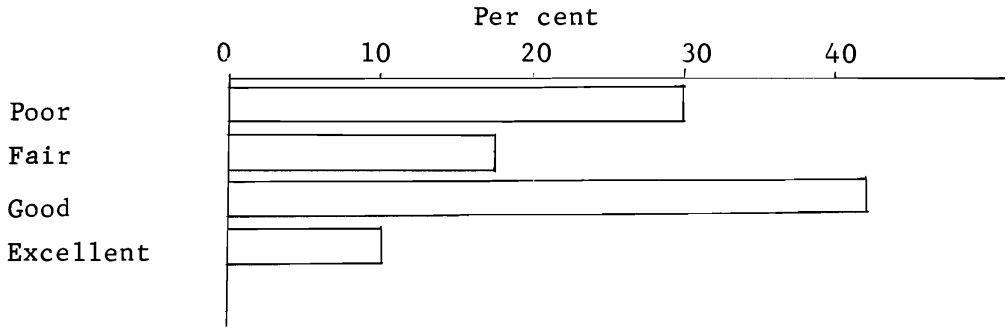


Figure 7.19. Acres of recreation land per 1,000 population for 89 cities of the second class in Nebraska.

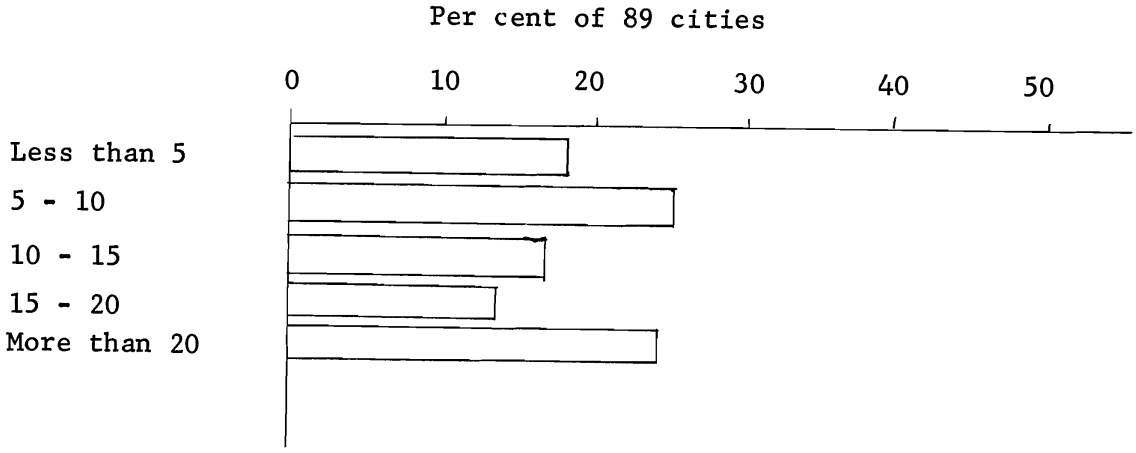
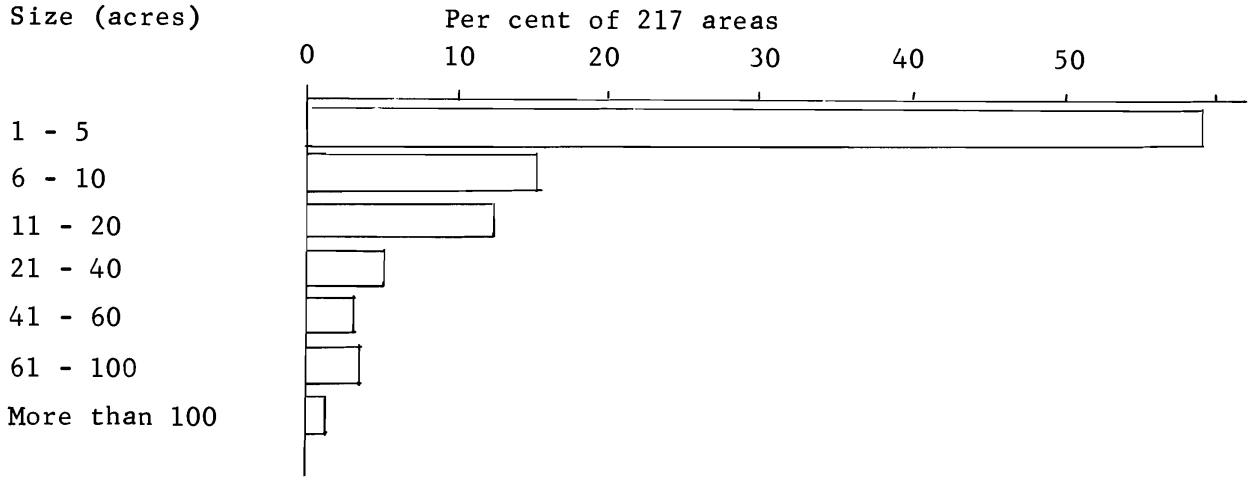


Figure 7.20. Summary of size of recreation areas administered by 89 cities of the second class in Nebraska.



Cities of the Second Class

All of the 89 cities of the second class were inventoried and information was gathered for 217 recreation areas. All cities of this class have at least one recreation area and size varies from less than one acre to a 1,280-acre city park at Valentine, virtually all of which is undeveloped. About 3,883 acres of municipal recreation lands are presently owned by communities in this category.

About 24.7 per cent, or 22, of the second class communities have 20 acres or more per 1,000 population. About 18 per cent have less than five acres per 1,000, Figure 7.19. Data on recreation lands and facilities are presented in Appendix B.5 for each socio-economic area.

Approximately 59 per cent of the areas were five acres or less in size and about five per cent exceeded 60 acres, Figure 7.20.

Playgrounds, picnicking areas, playfields and swimming pools were the most significant types of recreation facilities provided by Class II cities. Included on the 217 areas were 163 playgrounds, 158 picnic sites, 87 playfields, 73 swimming pools, 23 ice skating areas, 11 golf courses totaling 108 holes, and nine camping areas. Five recreation areas were undeveloped.

Activities participated in essentially reflect the type of development as is seen in Figure 7.21. Picnicking, viewing and playing outdoor games and sports, playground activities, and swimming are by far the most dominant activities.

Judgement data on quality of facilities and maintenance of recreation areas of Class II cities are summarized in Figure 7.22. Sixty-seven per cent of the areas received a good to excellent rating.

Cities of the First Class

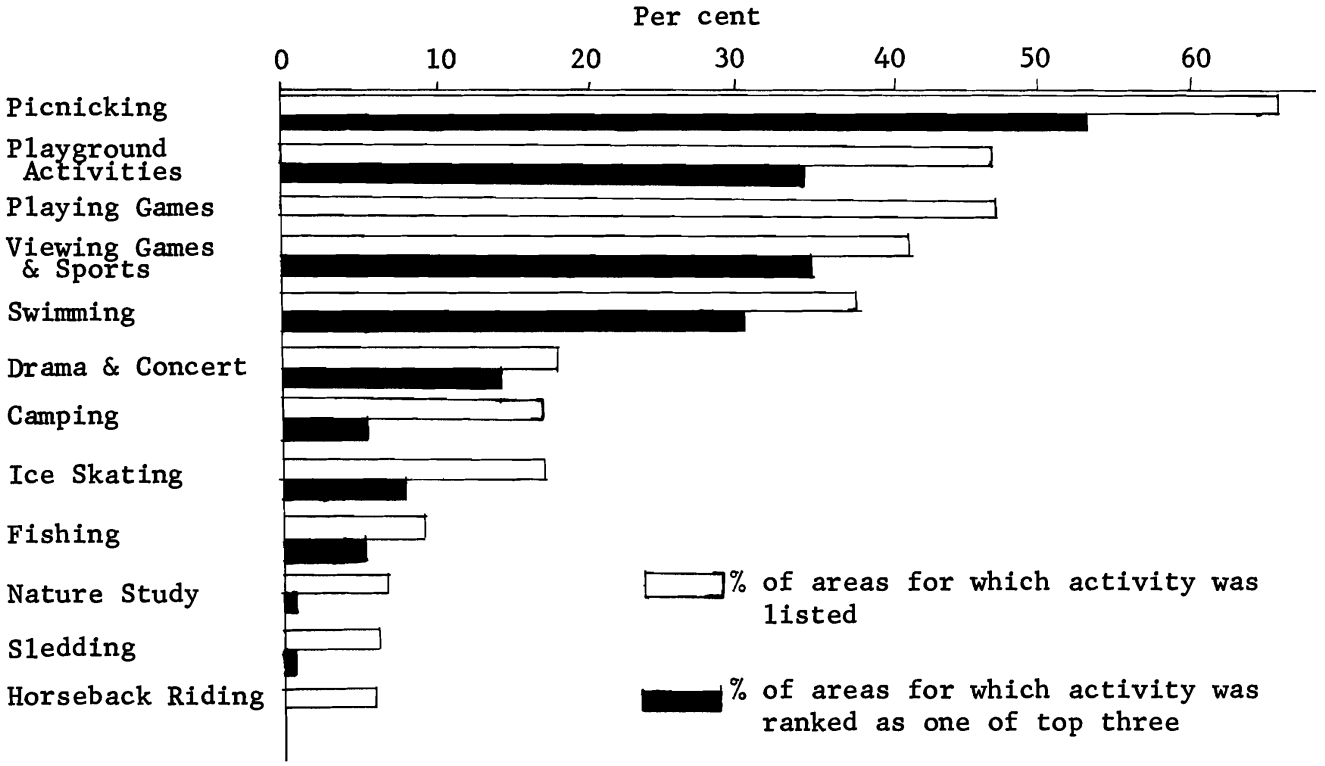
In this category, cities with populations of 5,000 to 50,000 were considered. Twenty-three cities administer 150 areas totaling 2,393 acres of recreation lands and waters. Data on lands and facilities inventoried are shown in Appendix B.5 for each socio-economic area.

Thirteen per cent of the cities of this class had less than five acres per 1,000 population; 65 per cent from five to ten acres per 1,000; 17 per cent from ten to fifteen acres per 1,000; and one city or four per cent had more than fifteen acres per 1,000, Figure 7.23.

Size of the 152 individual areas ranges from less than one acre to 148 acres. Of these areas, 75 per cent were less than ten acres and 62 per cent were less than five acres. Only seven per cent or ten areas were in excess of 60 acres, Figure 7.24.

Playgrounds, playfields, picnicking areas and swimming pools were the most common types of development as they occurred on 91, 56, 56, and 17 per cent of the areas, respectively. Thirteen cities have ice skating facilities; seven provided limited camping facilities; and two operated municipal golf courses.

Figure 7.21. Summary of activities provided and participated in by the most people on an annual basis on 217 recreation areas in 89 cities of the second class in Nebraska.



Hiking, boating, golf (5%), Bicycling (3%)

Figure 7.22. Summary of quality of facilities and maintenance of 217 areas operated by cities of the second class.

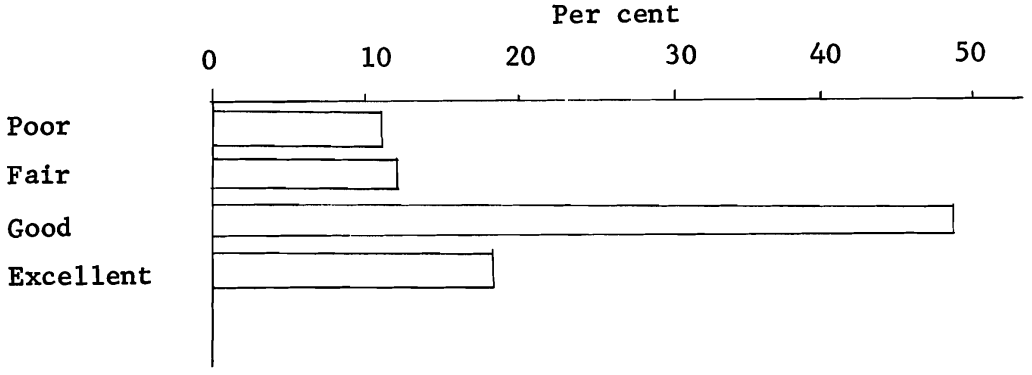


Figure 7.23. Acres of recreation land per 1,000 population for 23 cities of the first class.

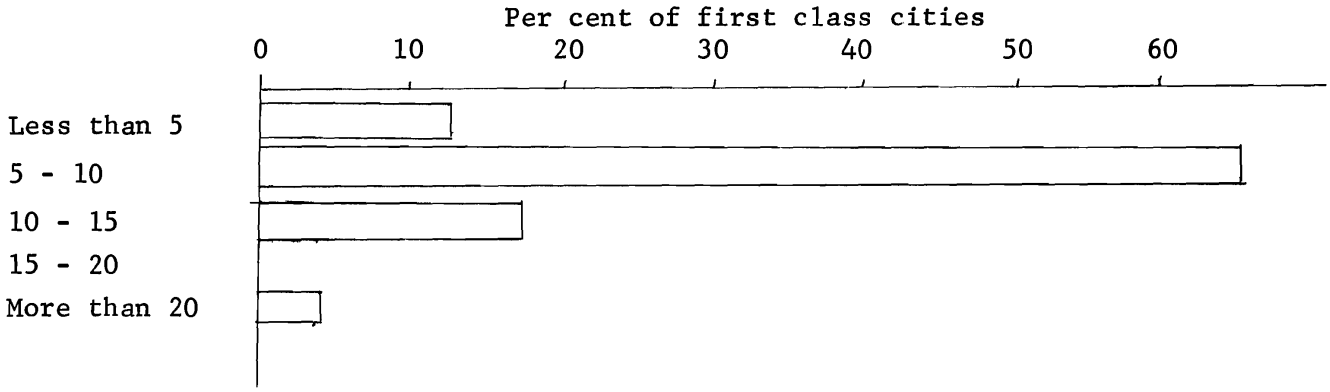
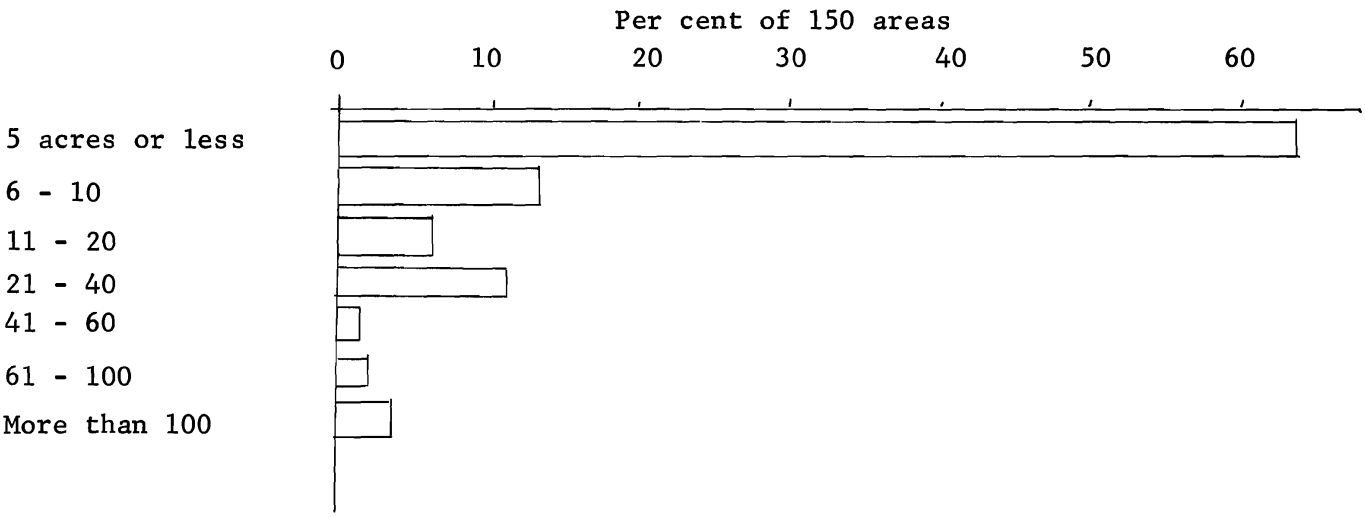


Figure 7.24. Summary of size of recreation areas administered by 23 cities of the first class.



Sixteen or 18 per cent of the recreation areas were undeveloped. Over three-fourths of the areas received a good to excellent rating for quality of facilities and maintenance, Figure 7.25. A summary of activities provided and participated in by the most people is presented in Figure 7.26.

Lincoln

Data submitted by the Parks and Recreation Department of Lincoln showed ownership and management of 2,420 acres in 37 outdoor recreation areas. Included were nine undeveloped areas totaling 627 acres.

Of the areas reported, 16 were less than ten acres in size and 21 were in excess of ten acres. Six areas were in excess of 100 acres, Figure 7.27.

Based on the estimated population for 1967, Lincoln has about 16.4 acres per 1,000 population. Of the 1,357 acres in developed recreation lands or water, 13.8 per cent is in water area on eight recreation sites. Two of the water areas are sufficiently large to provide boating and fishing.

A relatively wide range of activities and facilities is provided on the developed areas. Over 50 per cent of the total area has been developed and designated as specific facility sites. Included are 33 playgrounds, 27 games and sports areas, 26 picnic sites, eight ice skating areas, eight swimming pools, three golf courses, one camping area and two miles of bridle trail.

Summaries of activities participated in and quality of areas are given in Figures 7.28 and 7.29.

Omaha

Based on inventories submitted by the City Department of Parks, Recreation and Public Property, Omaha manages about 2,724 acres of recreation lands, including 11 areas totaling 148 acres which are undeveloped open space lands. Based on the estimated population for 1967, Omaha has about 7.8 acres of recreation land per 1,000 population.

Of 71 areas reported, 44 per cent were less than 10 acres, and 66 per cent were more than 10 acres in size. Seven areas, or about 10 per cent, were in excess of 100 acres, Figure 7.30.

Included in the 60 developed recreation areas are 101 sites for games and sports facilities including ballfields, tennis courts, basketball courts and others, 27 playgrounds, 22 picnicking areas, nine swimming pools, ten ice skating areas, seven golf courses, two miles of bridle trails and one area offering day camping. Other facilities are listed in Appendix B.5.

Activities participated in and quality ratings for facilities and maintenance of areas are summarized in Figures 7.31 and 7.32, respectively.

Figure 7.25. Summary of quality of facilities and maintenance of 150 areas operated by cities of the first class.

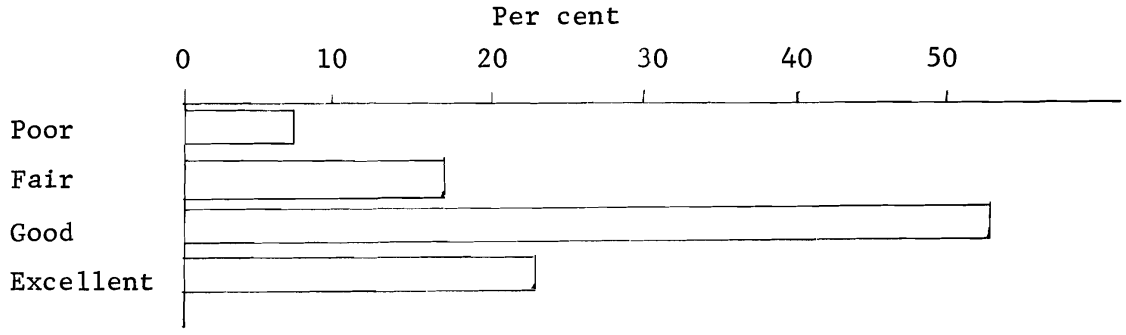


Figure 7.26. Summary of activities provided and participated in by the most people on an annual basis on 150 areas in 23 cities of the first class.

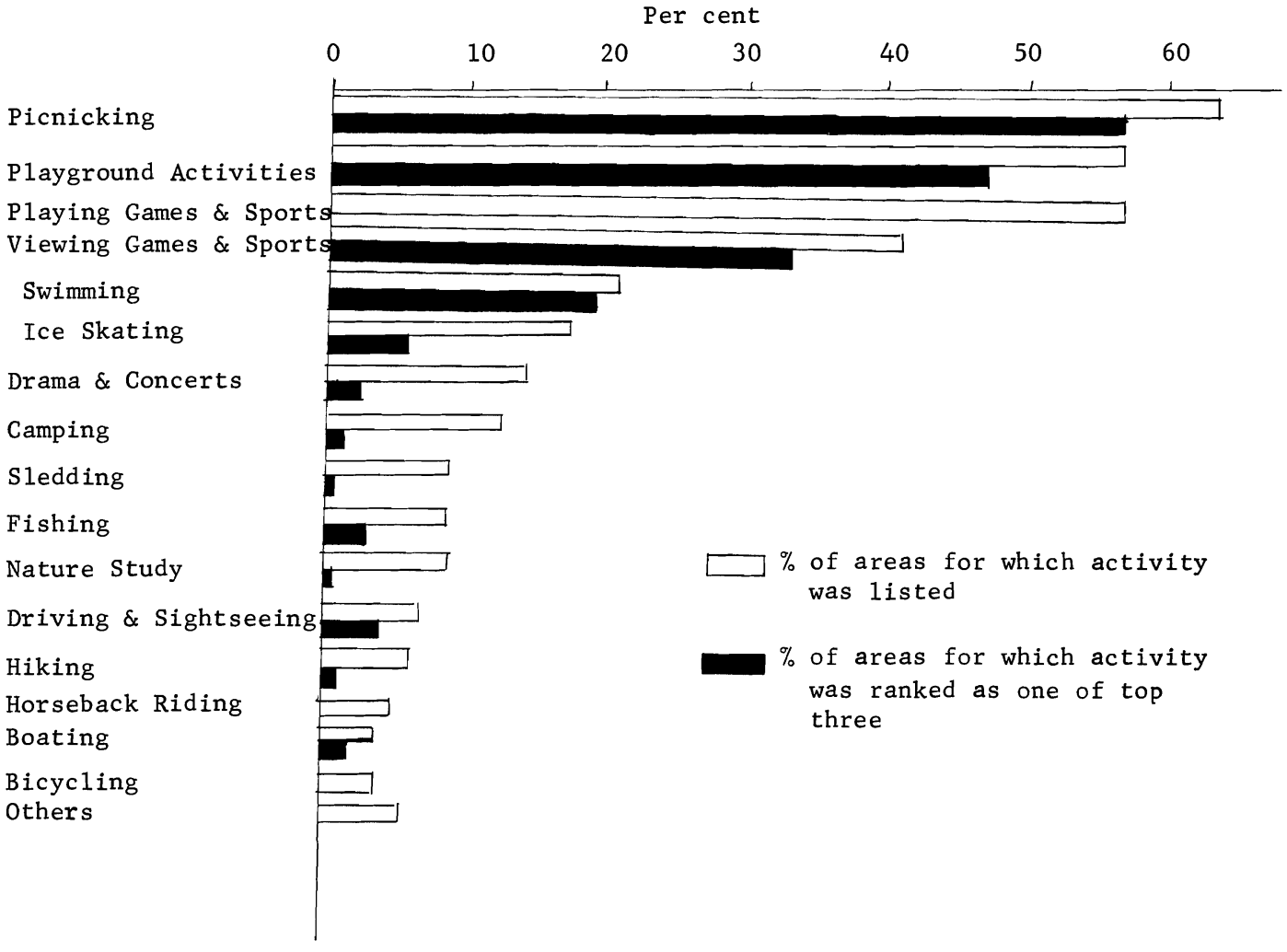


Figure 7.27. Summary of size of recreation areas administered by the City of Lincoln.

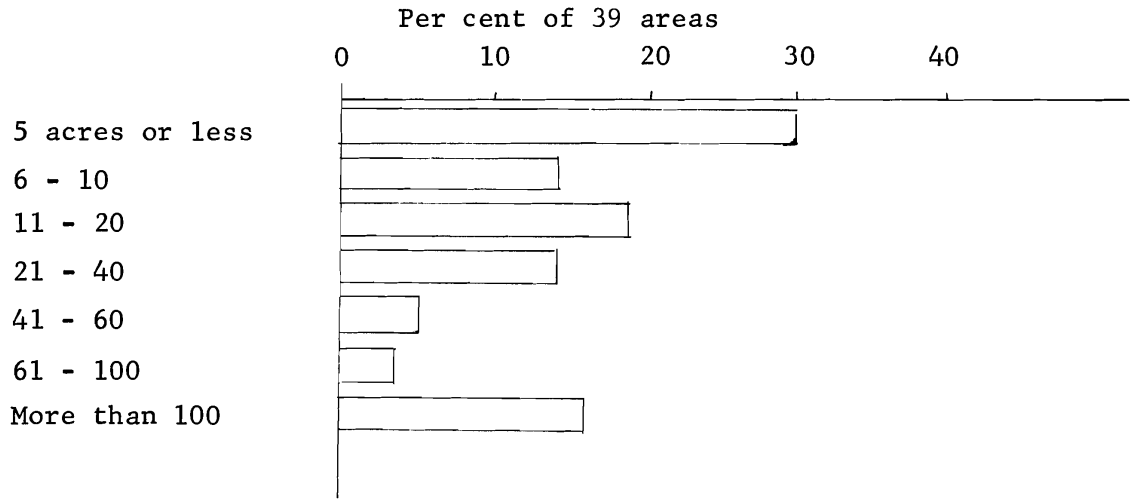


Figure 7.28. Summary of activities provided and participated in by the most people on an annual basis on 39 recreation areas in Lincoln.

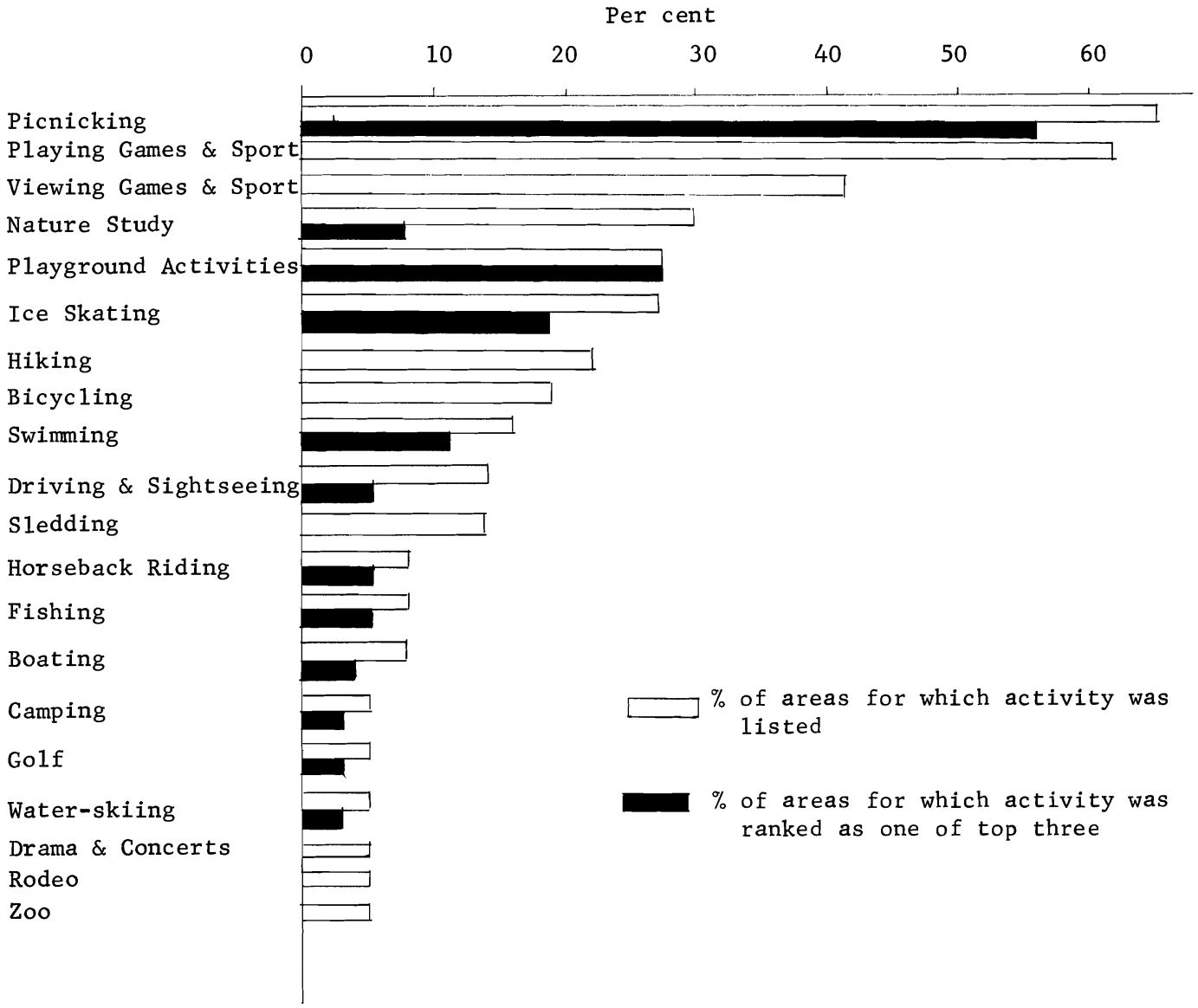


Figure 7.29. Summary of quality of facilities and maintenance of 39 recreation areas administered by the City of Lincoln.

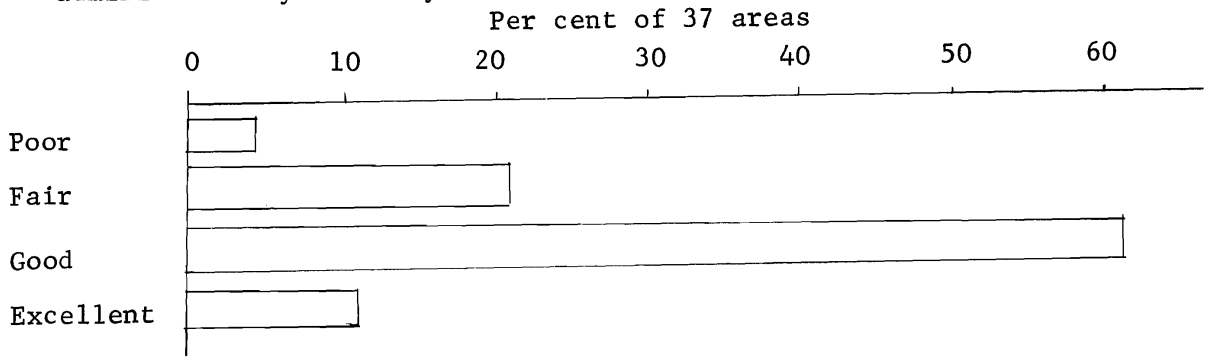


Figure 7.30. Summary of size of recreation areas administered by the ity of Omaha .

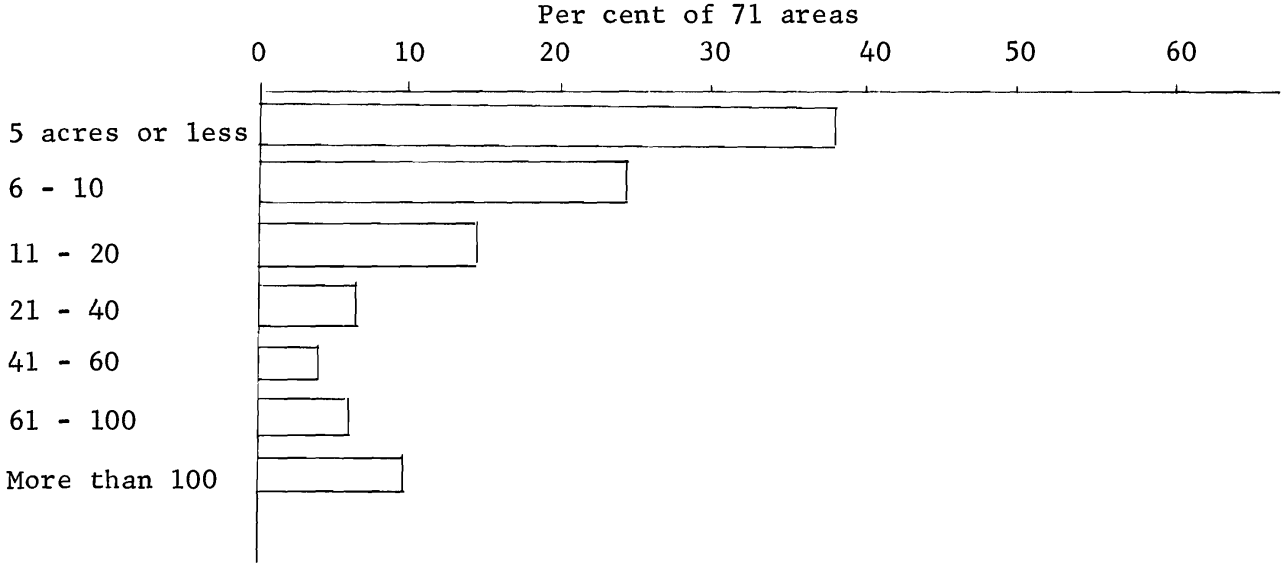


Figure 7.31. Summary of activities provided and participated in by the most people on an annual basis on 71 recreation areas in Omaha.

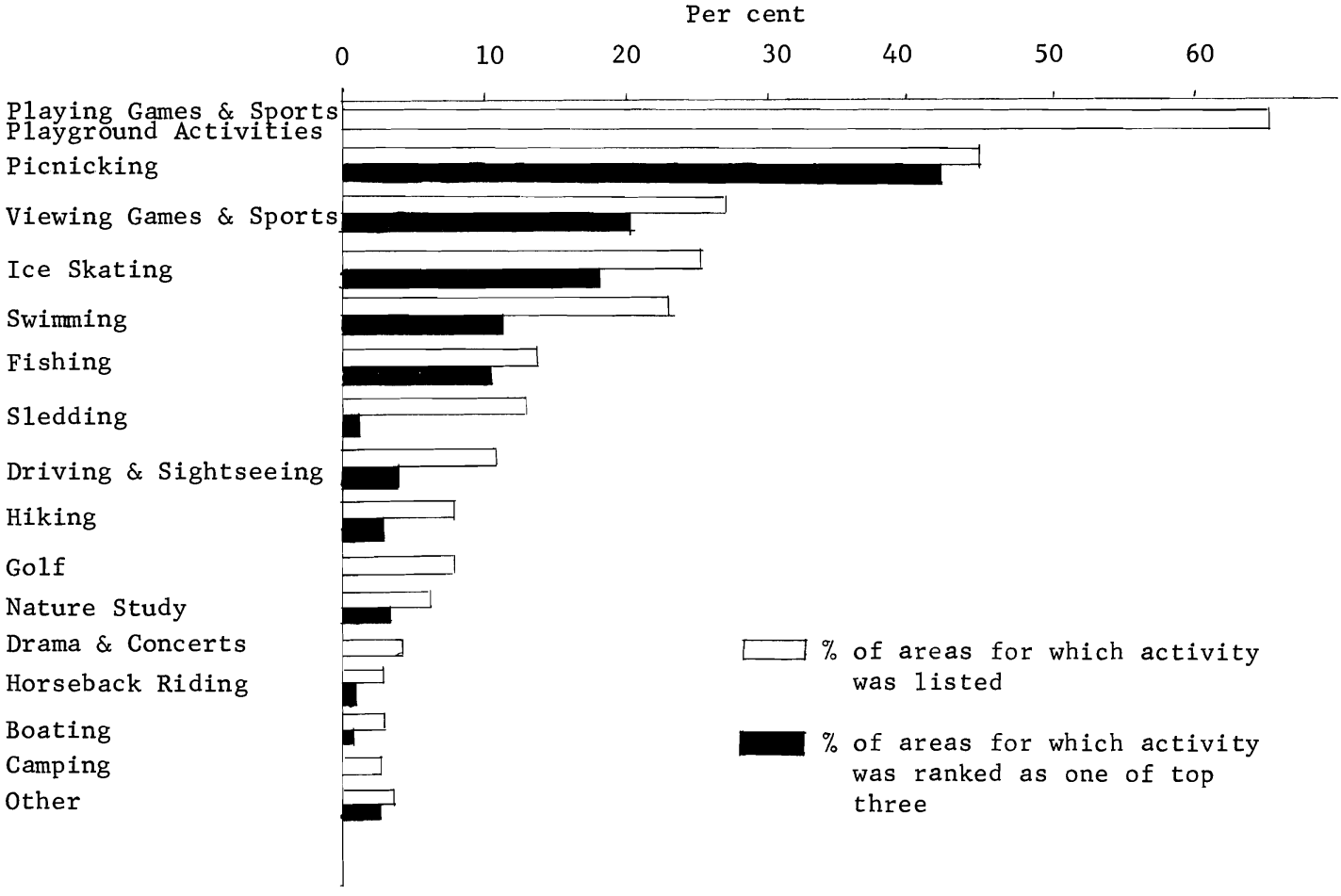
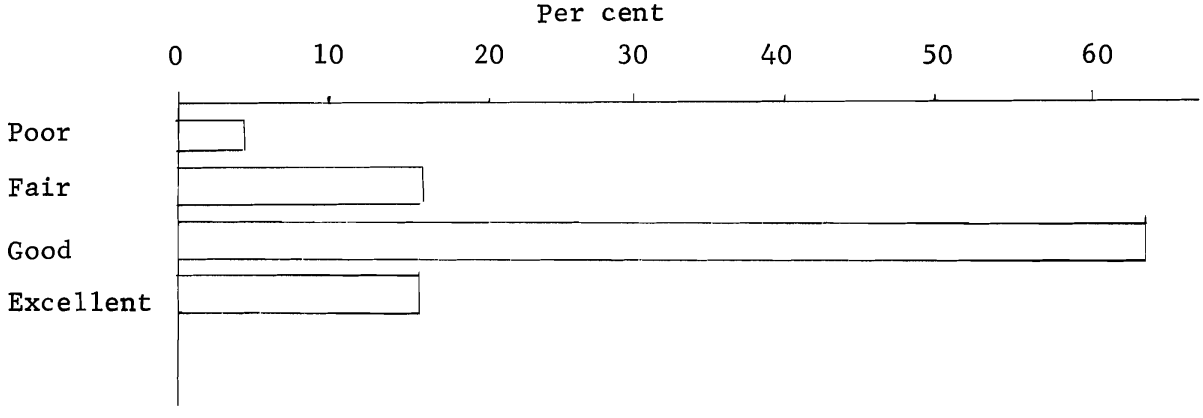


Figure 7.32. Summary of quality of facilities and maintenance of 71 recreation areas administered by the city of Omaha.



PRIVATE RECREATION RESOURCES

Development of golf courses, skeet ranges, trap ranges, archery ranges, membership swimming pools and other facilities by clubs or other private organizations such as the Izaac Walton League of America, gun clubs and country clubs, and private enterprise, all contribute to the state's total recreation resources and complement the development of public facilities by political subdivisions and public agencies.

Evaluation of the contribution of private recreation resources is based on information from several sources including the Conservation Needs Inventory provided by the Soil Conservation Service, U.S.D.A., the Nebraska Golfing Association, the Farmers Home Administration, the Nebraska State Department of Health, and from special studies of the Nebraska Game and Parks Commission. In many cases, the information on private outdoor recreation resources is incomplete, and, in some instances, overlapping. Nonetheless, a cursory evaluation can be made.

Conservation Needs Inventory by the SCS

According to information provided in the Conservation Needs Inventory by the Soil Conservation Service, approximately 400,000 acres of private lands and waters are being used for outdoor recreation in Nebraska. Although the inventory may not be complete, it does give some insight to the importance of several types of recreational opportunity being provided by the private sector. Data are presented in Table 7.19, which show the total acreage of land and water for ten primary types of private recreation areas. Table 7.20 shows instant capacity of lands and facilities for 18 primary and secondary activities listed for private areas.

Approximately 73 per cent of the areas inventoried have as their primary outdoor recreation interest either fishing, hunting, vacation cabins or cottages, or golf courses. Undoubtedly, most hunting and fishing enterprises offer these activities as supplements to their regular farm income. Those relying solely on income from fishing or hunting are rare or non-existent. Many of those selling, leasing or renting vacation cabins or homesites or operating vacation farms or ranches are also using this as a supplemental source of income. In recent years, however, the popularity of this type of enterprise has become increasingly obvious.

The golf courses are operated by private organizations but most are available to the public on a fee basis; others have closed memberships, but, nonetheless, are an important segment of the state's outdoor recreation resources.

Swimming, rural living (vacation cabins, etc.) and fishing and hunting account for about 74 per cent of the total capacity available on fee areas listed in the Soil Conservation Service's Conservation Needs Inventory, Table 7.20. Swimming is the prevalent outdoor recreation activity offered, accounting for over 30 per cent of the inventoried capacity.

Table 7.19. Summary of recreation resources provided by the private sector in Nebraska.

Type of Enterprise by Primary Type of Opportunity	Number	Acres of Land	Acres of Water
Fee Fishing Areas	103	10,635	28,612
Fee Hunting Areas	78	274,509	5,539
Vacation Cabins, Cottages and Homesite Areas	58	6,666	3,846
Golf Courses	51	2,400	18
Camping Areas	26	1,560	22,056
Field Sports Areas	26	612	10
Water Sports Areas	25	1,145	27,938
Riding Stables	12	2,613	6
Natural, Scenic and Historical Areas	9	1,631	2
Vacation Farms and Ranches	9	5,220	6
Totals	397	307,991	88,032

Table 7.20. Summary of instant capacities for outdoor recreation on 397 inventoried private areas.

Activity	Instant Capacity
Swimming	8,915
Rural Living	5,727
Fishing	4,302
Hunting	3,006
Picnicking	1,066
Sightseeing	1,002
Hiking	980
Golfing	970
Nature Study	952
Camping	825
Horseback Riding	794
Water-skiing	782
Field Games and Sports	530
Boating	270
Target Areas	167
Ice Skating	58
Children's Play Areas	66
Bicycling	11

Hunting and Fishing

Private lands, other than those fee areas listed in the previous inventories, are vitally important for certain activities. The willingness of landowners to permit access virtually supports hunting activities in Nebraska. Practically all the annual harvest of upland game and big game is taken from private lands. Although ownership of wildlife resources is vested in the State, access to, and the status of wildlife as determined by land use, is at the discretion of the landowner. Therefore, the excellent hunting opportunities currently enjoyed by Nebraska hunters is truly a contribution of individual farmers and ranchers.

Although public recreation areas and waters contribute more to fishing than to hunting, the private sector also provides important fishing opportunities. Lands adjacent to rivers and streams and natural lakes are mostly under private ownership. Access to these bodies of water for fishing is again determined by the landowner. Since few bodies of natural waters are managed for fisheries by private landowners, the primary contribution is provision of access.

The development of farm ponds and grade stabilization structures has contributed significantly to outdoor recreation, particularly in eastern Nebraska. Over 19,000 farm ponds and 10,000 grade stabilization structures have been constructed by Soil and Water Conservation Districts. About 50 per cent of the farm ponds and 20 per cent of the grade stabilization structures are estimated to have some fishery potential. Most of these structures are not open to the general public, but they are used by invited guests and provide recreation, particularly fishing, to a relatively large number of users. Collectively they provide an estimated 8.6 per cent of the total fishing capacity. In addition to fishing, many of these structures may be used for other water-oriented activities such as waterfowl hunting, boating, swimming or picnicking.

Vacation Farms and Ranches

Vacation farms and ranches are relatively new ventures by private landowners to provide income producing outdoor recreation in Nebraska. It is gaining impetus with the financial and technical assistance available from programs of the federal government. As smaller farmers and ranchers look for new ways of supplementing their agricultural income, this type of recreational facility should increase. Although servicing only a few people, vacation farms and ranches have the potential of providing a unique outdoor experience to urban residents. In addition to participation in conventional recreation activities, these farms provide an exceptional opportunity for urban people to become acquainted with rural life, and to observe the production of food and fiber on the land.

Information received from the Division of Information and Tourism of the Nebraska Game and Parks Commission and the Farmers Home Administration indicated that 27 vacation farms or ranches were in operation or were being developed in 1966, Appendix B.6. As would be expected in Nebraska, the distribution of most vacation farms and ranches is related to that part of the State which is considered big farm and ranch country where the flavor of country living is most obvious. Over 85 per cent of the vacation farms and ranches occurred in socio-economic areas 11, 12, 13 and 14. Typical activities and facilities included guest houses or cabins, horseback riding, camping, play equipment, skeet shooting,

games, fishing, hunting, nature study and participation in farm and ranch activities. Use of these private facilities was not determined, but again these enterprises can offer a source of high quality recreation and a unique outdoor experience to many people.

FHA Financed Outdoor Recreation Projects

With financial assistance available to rural individuals and associations from the Farmers Home Administration, increased interest is being shown in development of private recreation facilities by rural groups. Information received from the Farmers Home Administration indicated that this agency has provided financial assistance to five of the above mentioned vacation farms and ranches and to 19 community groups in developing recreation areas. Typical recreation facilities of the community developments include golf courses, swimming pools, club houses, skeet ranges, fishing lakes, archery ranges, toboggan and sled runs and picnic and camping areas, Appendix B.6. In addition to those projects which have been approved for assistance, applications for association loans for five community groups are pending.

Private loans for recreational enterprises have been made to nine individuals under the FHA program. Types of facilities financed include vacation farms and ranches, bait shops, fishing ponds, and facilities for horseback riding and camping.

Outdoor Swimming Pools

A roster of swimming pools compiled by the State Department of Health indicated that 156 outdoor swimming pools are administered by the private sector in Nebraska. Private country clubs, church and youth camps operate 75 outdoor pools which are youth or family oriented and 81 are operated by hotel, motel or apartment enterprises which are oriented primarily to the tourist or vacationing public. One outdoor pool is operated by the school district at Shelton, Nebraska. Although usually serving a limited segment of the population on an individual basis, the total effect of private pools is quite significant. Distribution of private pools by socio-economic area is presented in Table 7.21.

Golf Courses

The Nebraska Golfing Association provided information on private golf courses in Nebraska. Eighty-eight golf courses, of which at least 32 per cent are open to the general public on a fee basis, are being provided by the private sector.

Of the 88 golf courses listed, 49 per cent had sand greens, 34 per cent had nine holes with grass greens, and 17 per cent had 18 holes with grass greens. Distribution of private golf courses by socio-economic area is shown in Table 7.22.

Organized Sportsman's Clubs

In 1967, the Nebraska Game and Parks Commission conducted a mail-out survey of known sportsman's clubs in Nebraska. Forty-eight of the 108 known clubs responded and provided useable information for 19 hunting and fishing clubs, 12

Table 7.21. Distribution of private outdoor swimming pools in Nebraska by socio-economic area.

Socio-Economic Area	Private Clubs, Schools and Camps	Hotels, Motels and Apartments
1. South Sioux City	1	1
2. Omaha	36	36
3. Lincoln	13	9
4. Beatrice	3	1
5. Norfolk	3	1
6. Columbus	3	2
7. Grand Island	3	6
8. Hastings	4	3
9. Kearney	2	6
10. McCook	0	0
11. North Platte	5	11
12. Ogallala	0	2
13. Valentine	0	1
14. Scottsbluff	2	2
Total	75	81

Table 7.22. Distribution of private golf courses by socio-economic area in Nebraska.

Socio-Economic Area	Sand Green 9-Hole	Grass Green 9-Hole	Grass Green 18-Hole
1. South Sioux City	0	0	1
2. Omaha	2	6	7
3. Lincoln	1	3	2
4. Beatrice	3	3	0
5. Norfolk	3	4	2
6. Columbus	2	0	1
7. Grand Island	3	2	0
8. Hastings	4	2	1
9. Kearney	4	2	0
10. McCook	3	2	1
11. North Platte	4	3	0
12. Ogallala	4	0	0
13. Valentine	7	2	0
14. Scottsbluff	3	1	0
Total	43	30	15

trap and skeet shooting clubs, seven archery clubs, seven dog training and field trial clubs and three rifle and pistol clubs. Total membership of the 48 clubs was 6,285 persons.

Thirty-seven clubs indicated that they owned or leased property for club activities. The property controlled included 1,290 acres of land, 333 acres of water and 17 acres of marsh for a total of 1,640 acres. Eighteen, or 49 per cent, of the clubs controlling lands indicated that their lands and facilities were open to non-member use on special occasions only and eleven, or 30 per cent, were open to non-members at any time. Probably all clubs allow use of their lands and facilities by friends and relatives of members; thereby, enhancing the value of these facilities as a part of the state's outdoor recreation resources.

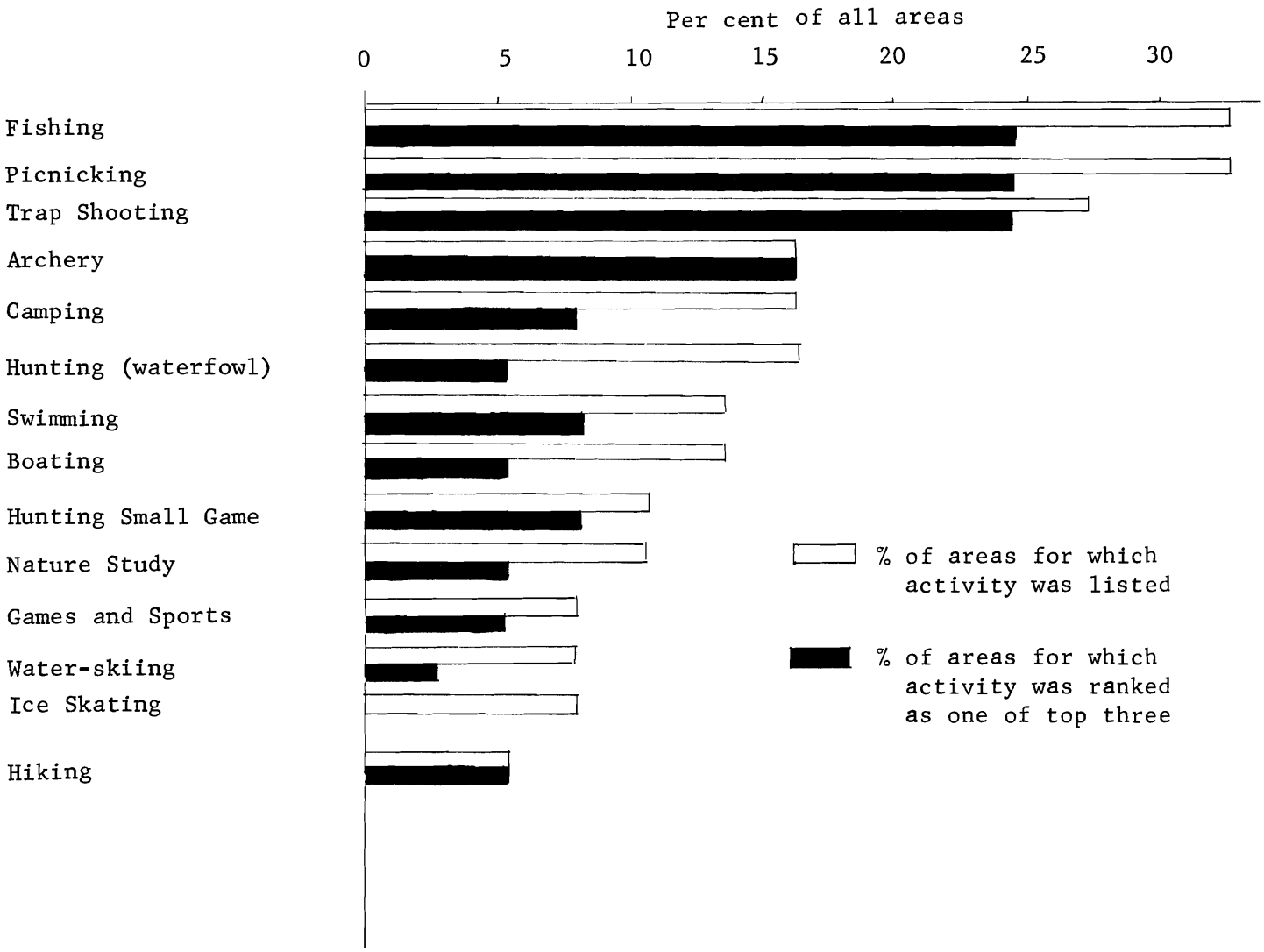
Those clubs owning lands were asked to list recreational facilities provided on their lands. A summary of facilities is presented in Table 7.23. Obviously, day use facilities were most common. The per cent of areas having playgrounds and picnic facilities, indicates a high rate of family participation in club activities.

The clubs were asked to indicate the activities participated in by the most people on the lands controlled by the club. Data are summarized in Figure 7.33. Fishing, picnicking and trap shooting are by far the most important activities.

Table 7.23. Outdoor recreation facilities provided on lands owned or leased by 37 outdoor sportsman's clubs in Nebraska.

Type of Facility	No. Areas With Facility	Per Cent of Areas With Facility
Picnicking	17 (111 Tables)	46
Trap and Skeet Range	16	43
Archery Range	10	29
Playground	9	24
Camping	7	19
Boating	5	14
Rifle and Pistol Range	4	11
Waterfowl Blinds	3	8
Swimming Beach	2	5

Figure 7.33. Activities participated in by the most people on 37 areas controlled by outdoor sportsman's clubs.



POTENTIAL SUPPLY OF OUTDOOR RECREATION RESOURCES

The potential for development of outdoor recreation resources in Nebraska is limited only by imagination and the willingness of the people to support a vigorous and aggressive program.

The greatest potential for non-urban activities lies in the development of water resources and historic sites which portray the era of western expansion and settlement.

Nebraska has substantial opportunity to meet the demand for water-based recreation activities. Water harnessed under flood control projects and other multi-purpose reservoirs also serves recreation. Projects which have been approved or are in the planning stages will increase available recreation water significantly. Development of facilities will insure use for a wide range of activities.

With the exception of the metropolitan areas of Omaha and Lincoln, Nebraska has not experienced the population explosion which has been characteristic of many areas of the United States. If immediate action is taken in planning, acquisition and development, ample space is available for development of high quality urban sites, even in Omaha and Lincoln. Immediate action, however, is needed in some of the larger, rapidly expanding communities if needed and potential land resources are to be acquired. Coordinated city-county planning could insure high quality areas within easy reach of virtually all urban residents.

Recreation Oriented to Water Resources

The greatest potential for outdoor recreation lies in the development of water resources for recreational use. Existing reservoirs provide most of the water-oriented outdoor recreation opportunity at the present time. As demand becomes greater, facilities can be increased to meet the needs. The capacity of most reservoir areas to satisfy various needs can be increased significantly with additional and more sophisticated facilities.

New major reservoirs planned by the Bureau of Reclamation or the Corps of Engineers will place water-oriented outdoor recreation activities within relatively easy reach of residents of the heavily populated eastern one-third of the State. Angus Reservoir on the Little Blue River in Nuckolls County will be within 100 miles of Lincoln and 50 miles of Grand Island, Hastings and Kearney. A reservoir planned on the Big Blue River near Beaver Crossing in Seward County will be within 100 miles of Omaha and about 40 miles from Lincoln. Branched Oak Reservoir, impounding about 1,800 acres of surface water, is within 30 minutes driving time of most residents of Lincoln and will be within 50 miles of Omaha and Fremont. These areas will be readily accessible to residents of the metropolitan areas from Interstate "80".

When authorized and completed, the Papio project will place eight reservoirs varying from 215 to 840 acres in size and eleven smaller reservoirs within a few minutes drive of metropolitan Omaha.

Reservoirs planned on the Cedar River near Spalding in Greeley County and on the Upper Loup in Garfield County, will provide additional and much needed water-oriented activities to residents of the central northeast.

When completed, the mid-state complex of reservoirs in central Nebraska will supply over 24,000 surface acres of water in 23 interconnected reservoirs. This chain of reservoirs will lie immediately north of Interstate "80" between Overton and Grand Island. As a result, the water areas will be highly accessible to tourists and residents of central and eastern Nebraska. Development of adequate facilities and access could make this area one of the major water playgrounds of the midwest.

The proposed Norden Reservoir on the Niobrara River near Valentine offers a different setting from most reservoir areas of Nebraska. The site is located in the scenic Niobrara Valley. Coniferous and deciduous timber occupy the slopes. Consequently, the quality of the area for recreation developments is higher than many others. However, this site is located in a sparsely populated region and some distance from the populated east. As a result, potential use is more limited than on other more strategically located areas. This is also true of the existing Merritt Reservoir. However, development of facilities on the Merritt Reservoir and construction of the Norden Reservoir will provide opportunities for pleasure boating and related activities which previously have not been available to residents of sparsely populated northcentral Nebraska. As demand increases with increased mobility, facilities can be provided to meet the needs. As a result of the quality of the surrounding environment, these sites have the future potential of major vacation areas offering a wide range of experiences associated with the reservoir and its forested slopes.

Proposed reservoir development in the Elkhorn River Basin by the Bureau of Reclamation includes three large impoundments in an area presently devoid of water-based recreation opportunity. The three reservoirs are all within a half hour's drive from Norfolk and two are within a one hour's drive from Omaha.

The proposed 64,000 acre multi-purpose reservoir located on the lower Platte River between Lincoln and Omaha would offer an opportunity for water based recreation in an area of tremendous need. This reservoir would be within a few minutes drive of approximately 44 per cent of the state's total population which reside in Dodge, Douglas, Cass, Lancaster, Saunders and Sarpy Counties. The Lower Platte Reservoir meets all the requirements for consideration as a national recreation area.

The Nebraska Game and Parks Commission has submitted letters of intent to participate in separable costs for enhancement of fish and wildlife or outdoor recreation for projects under P.L. 89-72. These reservoirs and others which are in the planning phases are shown in Table 7.24.

Development of small watershed reservoirs under P.L. 566 offers an excellent opportunity to provide water oriented recreation which is readily available to the people of local areas and municipalities. The potential exists for the development of these sites by the state, political subdivisions, or private groups to satisfy demands and needs for water-oriented outdoor recreation at a local or regional level.

Table 7.24. Major water resource development projects planned for Nebraska.

Socio-Economic Areas	Project	Surface Acres of Water
2	Papillion Creek & Tributaries*	
	East Kennard Reservoir	520
	West Kennard Reservoir	490
	Washington Reservoir	215
	Irvington Reservoir	450
	West Dodge Reservoir	330
	Millard Reservoir	341
	Chalco Reservoir	300
	County Line Reservoir	840
	Total	3,486
2 & 3	Lower Platte Project*	64,000
3	Sunbeam Unit	
	Beaver Crossing Reservoir	7,813
	Upper & Lower Elkhorn Basin Projects	
1 & 5	Pender Reservoir	7,750
5	Monterey Reservoir	7,300
5	St. Clair Reservoir	9,600
7 & 13	Cedar Rapids Division*	
	Spalding Reservoir	3,570
	North Loup Division*	
13	Calamus Reservoir	4,650
7	Davis Creek Reservoir	880
8	Little Blue Unit*	
	Angus Reservoir	5,080
9 & 11	Mid-State Project*	24,000
13	O'Neil Unit*	
	Norden Reservoir	6,300
	Mirage Flats Project*	
	Box Butte Reservoir	
	(Additional land Acquisition)	---

*Projects with a letter of intent for enhancement of recreation and fish and wildlife under P.L. 89-72.

The status of Nebraska's small watershed projects is as follows: four pilot; 31 approved for installation; two awaiting Congressional approval for installation; 38 in various stages of planning; 11 awaiting planning priority, and 15 disapproved, tabled, suspended planning or combined with other watersheds, Appendix B.8.

Applications have been submitted to the State Soil and Water Conservation Commission for small watershed projects in at least 56 of Nebraska's 93 counties. Feasible watershed projects include 21,306,800 acres, or 43.1 per cent of the total state area. Three and one-half per cent, or 1,722,800 acres, is presently under existing projects. Most watershed activity, however, is in the more populous southeastern counties where the demand and need for outdoor recreation is the greatest. Forty-four of Nebraska's watersheds are within 50 miles of Omaha and Lincoln, with 22 of these located within 50 miles of either city, Figure 7.34.

Data from 43 watershed plans,[11] and reports of preliminary investigations, indicate that there will be a total of 409 flood water detention structures in these 43 watersheds. Of these structures, 167 are either completed or under contract for construction. The combined 50-year sediment pools of these 409 sites will have a surface area of 11,464 acres. Normally these structures are operated at the 50-year sediment pool level which is considered the normal conservation pool.

The Mud Creek Conservancy District is sponsoring the enhancement of one of their planned flood control sites for outdoor recreation under the 1962 amendment to P.L. 566. The watershed work plan dated April, 1958 called for a single purpose flood detention structure with a 62-acre conservation pool. The Nebraska Game and Parks Commission and the Soil Conservation Service are sharing the costs of outdoor recreation enhancement of this site and it will be operated by the former agency as a state recreation area. The enhancement of this site includes raising the height of the dam to create a 150-acre lake and the acquisition and development of 285 acres of land above the water area. Construction of the dam will commence during the fall of 1967. This project illustrates what can be done when recreation is included in the planning phases.

Another watershed district for which a plan was developed prior to the enactment of the provision for the United States Department of Agriculture cost sharing of recreational enhancement of flood control structures is considering amending its plan to include recreational development of two sites.

Three of the nine watersheds for which work plans are now being developed have indicated that they wish to include recreational enhancement of one of the sites in each of their work plans.

Five of the watersheds that have acquired sites in fee title for single purpose flood detention structures have expressed interest in disposing of these sites to a public body who will manage them for public outdoor recreation.

---

[11] Includes 4 pilot watersheds, 32 P.L. 566 watersheds authorized for installation; 7 watersheds that are in the planning stage.

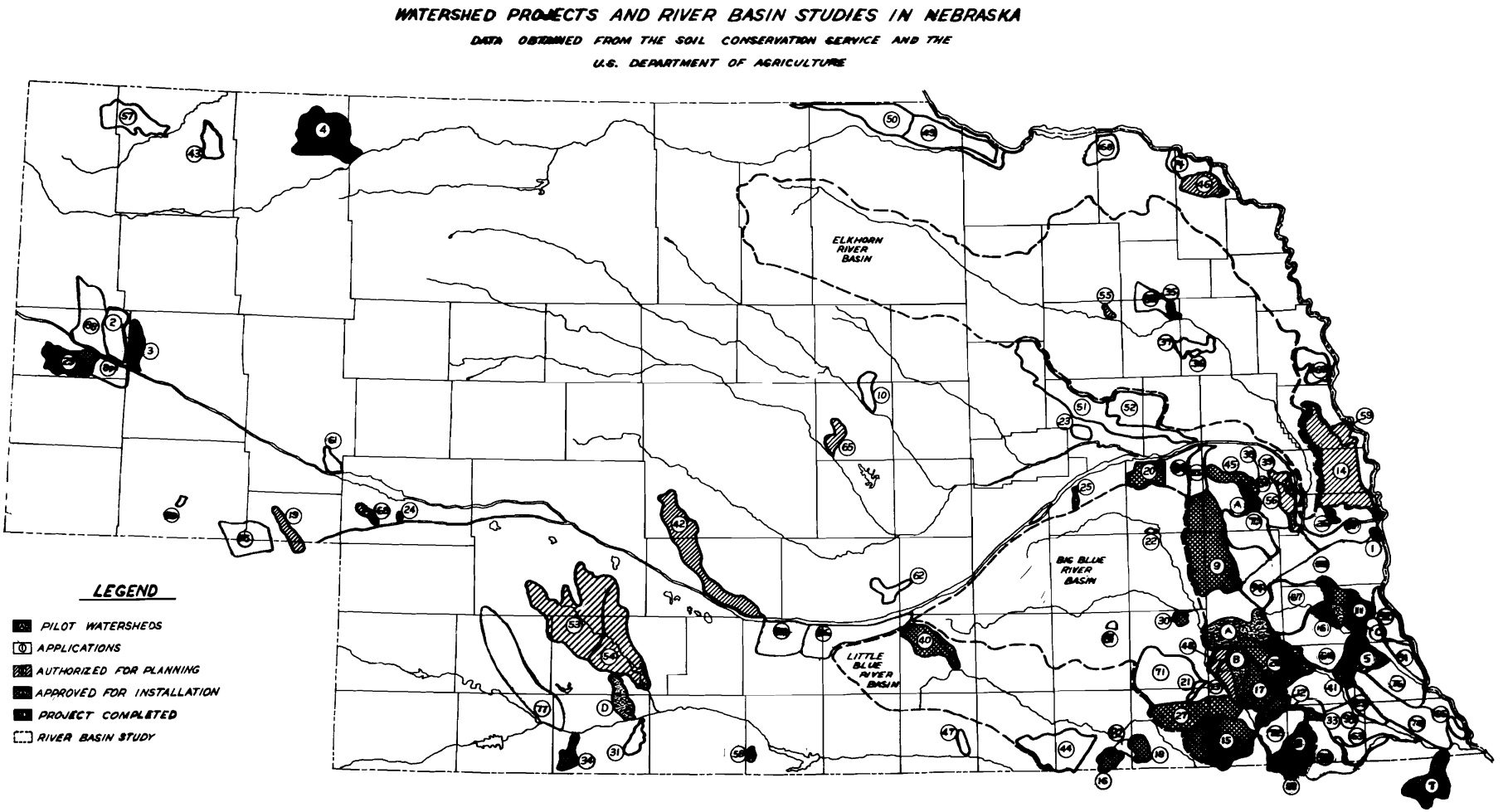


Figure 7.34 Organized small watersheds.

The recreation potential of waters provided by the Small Watershed Program is not fully utilized at the present time. However, the interest and activity mentioned above can be the catalyst to a greatly accelerated watershed recreational development program.

State Parks

Sites of suitable size and having the desirable characteristics to satisfy the requirements of state parks, as defined by existing legislation and policy, are highly limited.

The Wildcat Hills of Scottsbluff, Banner and Morrill Counties have the necessary characteristics of topography, size and vegetation, for development of a major state park. Forest lands of ponderosa pine and red cedar interspersed with grasslands and bisected by deep canyons, provide a desirable environment. Water resources suitable for water-oriented activities are almost nonexistent in the area. Although activities would necessarily be limited to those which are not water based, they would include such high quality recreation as horseback riding, hiking and walking, nature study, camping, sightseeing, and historical and geological interpretation. Development of overnight facilities may encourage use of the area as a vacation site. Historic sites within the region would complement use of the immediate area. Located immediately south of the Oregon and Mormon Trails of the North Platte Valley, the region is rich in historic sites and landmarks. Within easy driving distance are Scotts Bluff National Monument, Robidoux Pass, Signal Butte, Chimney Rock, Courthouse Rock, Jailhouse Rock, and the Agate Fossil Beds.

The Sandhills region of northcentral Nebraska provides an opportunity to develop a unique grassland park in an area of natural lakes and varied topography. Such a park would feature open space, a western atmosphere and an environment largely unaltered by man's activities. Located in an area of abundant water resources, a wide range of outdoor recreation activities could be provided. In addition to overnight facilities, developments and activities might include fishing, hunting, nature study, hiking and walking, boating, horseback riding and camping. The area is particularly adapted to interpretive facilities for nature study with its varied and abundant plant and animal life of marshes and upland grassland.

The Fort Robinson complex in northwest Nebraska lends itself to development of a large major park facility offering a wide variety of participating activities throughout the year. The Nebraska Game and Parks Commission has already purchased some key tracts for this development, particularly the 10,295 acre James Ranch which is located between the Fort Robinson Military Reservation and the Fort Robinson Timber Reserve. Future acquisition of the latter areas from the United States Government, will allow development and use of approximately 40,000 acres as a major vacation site for citizens of Nebraska and its visitors. A fully developed Fort Robinson could become a major tourist center offering side trips to many outdoor recreation attractions within the general region.

The variety and quality of outdoor recreation which is presently and potentially available within the Fort Robinson complex cannot be found in any other

section of Nebraska. With its location, potential size, varied topography and land use capabilities, and outstanding historic and scenic attributes, the area is ideally suited to development of recreational outlets for direct participation by individual citizens. The site has capabilities of providing high quality sightseeing, coldwater and warmwater fishing, excellent deer and wild turkey hunting, picnicking, nature study, horseback riding, camping, hiking and walking and a variety of games and sports.

Fort Robinson has a rich history, extending from 1874 until after World War II. It is of particular significance during the Plains Indian Wars and the period of settlement. Proper interpretation of this heritage will attract thousands of annual visitors.

Fort Robinson has the oustanding state park potential in Nebraska.

State Wayside Areas

With constantly increasing traffic on major highways, development of state wayside areas adjacent to highways is highly desirable to provide rest stops and camping facilities combined with other outdoor recreation activities.

The potential for development of high quality sites as part of a highway construction program is well illustrated by Interstate "80" west of Grand Island. The character of the soil and water table in this area is well adapted to gravel mining by hydraulic pumping operations. Land fills at highway interchanges were excavated or pumped in depth from adjacent lands, creating numerous sandpit lakes of sufficient size to provide varied recreation activities and sites of high quality for wayside parks. Numerous lakes created by other "fills" adjacent to the highway have enhanced the landscape for motorists, and provided additional water resources for recreation. The imagination and coordination of highway construction and recreation planning shown in this project have been outstanding. The results speak for themselves; they have gained nationwide attention and acclaim.

Developments of this type are limited by the potentials of the sites, but the project illustrates that high quality recreation developments are possible when incorporated with imaginative planning and design. The key to accomplishment is imagination plus coordination.

Historic and Archeologic Sites

Nebraska has a rich history associated with development of the early west. Most of the potential developments are those associated with early settlement and the great westward migrations.

Development and interpretation of these resources are of value to both residents and nonresidents. Western history and western life are items of high interest among people throughout the United States. The popularity of western movies and television programs which depict early western life and interesting characters of the frontier, although often lacking in historical interpretation and authenticity, attest to widespread interest.

Potential sites identified by the National Park Service in its preliminary plan, Parks for America, and by the Nebraska Historical Society are shown in Table 7.25. Historic trails which may be identified with suitable markers and interpretive facilities are also shown. The qualifications of many sites listed and shown have not been fully analyzed, but they do serve to illustrate the several sites which have potential.

Sites listed depict the history of the State, beginning with early inhabitants at the archeologic site of Stearns Creek Village and extending through the early Missouri River fur trade and western explorations, westward migrations, Plains Indian Wars, early river and overland transportation and freighting, and recent times.

Scientific Sites

The Agate Springs Fossil site in Sioux County is internationally known for many important fossil discoveries. Development of this site as a national monument by the National Park Service will make available to the public a rare paleontological resource, capable of attracting visitors from all parts of the nation. The addition and development of this site will enhance the total outdoor recreation complex of western Nebraska.

Fisheries

The potential for increasing sport fishing opportunity lies in four basic areas: (1) Creation of new waters; (2) improved management of existing waters; (3) improved watershed management; and (4) development of tools to provide greater access and use of private waters.

Creation of New Waters

Development of multi-purpose reservoirs and watershed structures under P.L. 566 have been discussed previously. Obviously, creation of additional water resources capable of supporting sport fisheries is one of the most basic tools for increasing sport fishing opportunity. Existing planned water developments have the added advantage of being located in areas of primary need, particularly eastern Nebraska.

All of the major reservoirs have fishery potential and most of the reservoirs developed under P.L. 566 have some potential. The potential of the smaller reservoirs can be increased significantly if development and management of the fishery resource and other related outdoor recreation activities are incorporated in the planning and design of structures.

Improved Management of Existing Waters

During the past several decades, the science of fishery management has made tremendous strides in development of new knowledge and techniques to improve the quantity and quality of sport fishing. Progress in this field is assured by continuing research. The problem is application of existing knowledge in management of our many water resources.

Table 7.25. Potential historic sites or monuments, their location by county, and eligibility for national landmark status.

Site	Eligible National Historic Landmarks	Registered National Historic Landmarks	County
Robidoux Pass	x		Scotts Bluff
Signal Butte	x		Scotts Bluff
Ponca Fort			Knox
Big Village of Omaha - Fort Charles			Dakota or Thurston
Cabanne's Post			Douglas
Bellevue Buildings			Douglas
Moses-Merrill Mission Site			Sarpy
Sterns Creek Village Site (or Walker-Gilmore Site)	x		Cass
Nehawka Flint Quarries			Cass
Russell Majors & Wadell Terminal			Otoe
Yutan-Oto Missouri Village			Saunders
Palmer Village		x	Howard
Battle of Blue Water Site			Garden
Mud Springs			Morrill
Massacre Canyon Battlefield			Hitchcock
George W. Norris Home			Red Willow
Midway Stage Station			Dawson
Hill Site (same as Pike-Pawnee Village Site)		x	Webster
Wm. Jennings Bryan Home		x	Lancaster
Brownville State Historical Park			Nemaha
Windlass Hill & Ash Hollow Cave(1)	x		Garden
Leary Site, Oneota Culture		x	Richardson
Fort Atkinson(1)		x	Douglas
Spotted Tail Agency			Dawes
Wright Site			Nance
Schultz Site	x		Valley
Linwood Site			Butler
Haumont Sod House			Custer
Coufal Site	x		Howard
Upper Republican Prehistoric Indian Site			(Several)
Satellite Cantonments of Ft. Kearny			(Several)
Ft. Robinson and Red Cloud Agency		x	Dawes
Oregon Trail			(Several)
Mormon Trail			(Several)
Lewis and Clark Route			(Several)

Source of data for site 1 through 22: Parks for America, U.S. Department of the Interior, National Park Service.

(1) Sites acquired or partially acquired but undeveloped.

On the large multi-purpose reservoir systems it is doubtful that improved management techniques can increase significantly the supply of sport fish in the near future. The large size and many demands placed upon the water resource limit the potential for management. However, smaller reservoirs, farm ponds and natural lakes, particularly those under private ownership, are capable of management with the potential of significant increases in the quality and quantity of sport fishing. Elimination or decreased competition of rough fishes, control of aquatic vegetation, initial stocking with desirable species, fertilization, and control and maintenance of satisfactory water levels would all contribute in certain instances to an improved fishery. Since most of the smaller reservoirs and natural lakes are under private ownership and receive little conscious management, the potential for increasing quality and quantity of sport fishing in these waters is great.

Watershed Management

The quality of water for production of sport fish is often determined by proper use and stabilization of the watershed. The life of many reservoirs is limited due to a rapid rate of siltation, and the suspended silt load lowers quality of water for fish production. Land treatment and stabilization of the watershed can often correct or ameliorate these problems.

Development of Tools to Provide Greater Use of Private Waters

A substantial part of fishable waters are under private ownership. Because of poor access, particularly in eastern Nebraska, many of these areas are not available to the general public and the potential for sport fishing is not being realized.

Use of easements or purchase of access sites may offer tools to open these waters for additional use if properly developed and applied.

Wildlife and Hunting

As indicated previously, the status of game populations depends upon man's manipulation of the land and its plant life. Consequently, the potential for development of additional hunting opportunity is closely related to the development of agricultural programs which are amenable to the production of game.

Ultimately, realization of the potential for wildlife production rests with individual landowners and their decisions on land use. These decisions must be based on economics and a reasonable return on labor and capital. Until wildlife assumes a higher position on the economic scale, it is doubtful that individual landowners will give wildlife additional consideration in land-use decisions. Therefore, the potential for significantly increasing this resource by land management lies in the incorporation of wildlife practices as an integral part of federal or state programs which provide incentives for certain agricultural or conservation practices.

Massive land conversion projects which affect large numbers of acres at a given time and provide the necessary elements of upland-game habitat offer the greatest potential in this field. The recent soil-bank program and the current feed-grain and cropland adjustment programs are examples. If suitable wildlife

practices are included, game populations over wide areas may be affected.

Very few sites are available for public waterfowl hunting, particularly in eastern Nebraska. The potential undoubtedly exists for the development of high quality sites capable of sustaining relatively heavy hunting pressure and providing significant hunting opportunity to large numbers of hunters. The potential is limited only by a source of water, terrain and areas of adequate size. Large areas of level terrain over which shallow waters can be created by a diking system or other water control structures lend themselves to development.

The mourning dove is often considered the "number one" game bird in America. More doves are harvested annually and more shots are fired at mourning doves than any other species. In Nebraska, however, it is classed by the legislature as a song bird and hunting has not been permitted since 1953. This species has adapted well to civilization and responded to man's manipulation of its environment. Status throughout the United States is extremely healthy. Existing management procedures assure its future.

Nebraska sustains high breeding populations of mourning doves and makes a significant annual contribution to the population of the Central Management Unit. Classification of this species as a game bird, granting the Nebraska Game and Parks Commission authority to declare annual open season within the framework provided by the Bureau of Sport Fisheries and Wildlife, would significantly increase hunting opportunity in Nebraska. Its wide distribution would make this opportunity available to hunters in all areas of the State. Utilization by hunters under existing management programs will not endanger the species.

Exotic species have played an important role in providing hunting opportunity throughout the United States. Introduction of exotic or non-indigenous game birds having desirable sporting characteristics and which do not interfere with the agricultural industry has long been used by game managers to supply additional hunting in habitats deficient in game birds. The ring-necked pheasant in the agricultural belt of the northcentral states is an excellent example. Merriams wild turkey, recently introduced in Nebraska, provides additional evidence of the value of this tool to supply additional hunting.

The non-agricultural short-grass plains of western Nebraska are deficient in upland game birds. Existing studies of exotics which may inhabit similar habitat have hardly scratched the surface. Should a species be located which has the desirable characteristics and the ability to survive in the short-grass plains, many square miles could be brought into production of upland game birds with a consequent increase in total hunting opportunity.

County Recreation Potentials

The Soil Conservation Service, in cooperation with personnel of the University of Nebraska, A.S.C.S., Nebraska Game and Parks Commission and interested local individuals, is directing a county-by-county appraisal of recreation potentials for twelve kinds of recreational developments. These developments include vacation cottages, cabins and homesites; camping grounds; picnicking and field sports areas; fishing waters; golf courses; hunting areas; natural, scenic and historic areas; riding stables; shooting preserves; water sports areas; vacation farms; and winter sports areas.

Approximately one-half of Nebraska's counties have been appraised and the project should be completed in two years including finished reports. When completed, the results should be included in future revisions of the Comprehensive State Outdoor Recreation Plan.

Urban Outdoor Recreation

Nebraska cities and villages, with a few exceptions such as Omaha, Lincoln and Kimball, have not experienced a rapid growth rate. Consequently, sites are available in practically all communities for development of user-oriented outdoor recreation areas. However, in some of the larger communities, immediate action must be taken if the potential is to be realized. Adequate planning would assure orderly development of outdoor recreation resources.

Financing is often a major obstacle for planning and implementation of plans at a local level. Financial assistance for planning is available to communities under Section 701 of the Housing Act of 1954 which is administered at the federal level by the Department of Housing and Urban Development and at the state level by the Department of Economic Development. Advisory services for planning are also available through the Community Development Department, University of Nebraska Extension Division.

In addition to grants-in-aid from federal and state sources under the Land and Water Conservation Fund program for acquisition of lands for recreation purposes, financial assistance is available under Title VII of the Housing Act of 1961 for acquisition of open-space lands in urban and urbanizing areas for parks, recreation, conservation, scenic or historic purposes.

SUMMARY

Over 97 per cent of the State is in farms with farm lands about equally divided between cropland and pasture or grazing land. Few areas remain untouched and unaltered by agricultural operations.

Forests and woodlands are limited and comprise only about two per cent of the total land area. Woodlands occur primarily along stream courses. The western coniferous forest extends from the Pine Ridge in northwestern Nebraska east along the Niobrara River and grades into the eastern deciduous forest in Rock County in the northcentral portion of the State. The most extensive deciduous woodlands occur in counties bordering the Missouri River.

The surface-water area is about 615 square miles and contains approximately 40,000 bodies of water of which 3,350 are in excess of ten acres. Major rivers include the Missouri, Niobrara, Elkhorn, the Loup system, Platte, Republican and Big Blue Rivers. Size and depth limit pleasure boating with power craft on all but the Missouri River. An extensive multi-purpose reservoir system, primarily in the southwest and on the Missouri River, supplies most of the water-oriented activities requiring large bodies of water.

Approximately 225,600 surface acres of fishing water occur in the State. Reservoirs over 1,000 surface acres in size contribute about 44 per cent of the fishing capacity, natural lakes 33 per cent, rivers and streams 10 per cent, farm ponds and grade stabilization structures 8.6 per cent, and oxbows and gravel pits 5 per cent. Over 55 per cent of the capacity occurs in the Valentine and Ogallala SEA's, and is not readily available to fishermen of the more densely populated eastern Nebraska. Rivers and streams, farm ponds, grade stabilization structures, oxbows, and gravel pits provide most of the sport fishing opportunity in eastern Nebraska. The coldwater fishery is largely confined to western Nebraska although a few trout streams occur in the northern areas. A few gravel pits support trout in eastern Nebraska.

Upland game birds which contribute to sport hunting include the ring-necked pheasant, bobwhite quail, prairie chicken and sharp-tailed grouse. Of these, the pheasant has the widest distribution and is the most popular. Almost 1¼ million cocks were harvested in 1966 by about 141,100 resident hunters. Prairie chickens and sharptails are found primarily in the Sandhills of northcentral Nebraska and in parts of the southwest. Bobwhite quail are most abundant in southeastern counties and have general distribution along the river systems throughout much of the eastern and southern portions of the State.

Small game mammals include cottontail rabbits, squirrels and raccoons. Each species occurs throughout much of the State, however, the squirrel is limited to deciduous woodlands which makes up less than two per cent of the total state area.

Big-game species include mule and white-tailed deer, antelope and wild turkey. Deer occur throughout the State and reach their highest densities along the stream courses and associated river breaks. The importance and participation in deer hunting has been increasing steadily and in 1966, 17,765 deer were harvested by 24,870 rifle hunters and 2,946 archers. Antelope occur primarily in the Panhandle. Recently they were reintroduced in the Sandhills by a trapping and transplanting program. In 1965 and 1966, the annual harvest exceeded 1,000 animals. Future participation and harvests should increase. Although wild turkeys were introduced as recently as 1959, they provided high quality hunting to almost 3,500 hunters in 1966.

Waterfowl hunting has been a traditional outdoor recreation activity for large numbers of Nebraskans. However, recent continental declines in waterfowl populations have altered participation drastically. Unattractive seasons reduced the number of active waterfowl hunters from 64,100 in 1957 to an all-time low of 14,600 in 1962. Conditions have improved slightly since 1962. In 1966, there were 28,453 active waterfowl hunters. Streams and rivers, rain-water basins of southcentral Nebraska, natural lakes of the Sandhills and farm ponds provide the available water area for waterfowl hunting. Access to primary harvest areas for public hunting is poor. Hunting privilege leases and restriction of hunting rights preclude public hunting opportunity in much of the rain-basin area. An active acquisition program by the Bureau of Sport Fisheries and Wildlife and the Nebraska Game and Parks Commission has made over 6,000 acres of rain basin marsh available to the waterfowl hunter. Most of the major hunting areas along the Platte River system are leased by individuals or groups. Lands for public waterfowl hunting are highly limited throughout the State.

Virtually all species of game must be produced and harvested on private lands. Access for hunting is a problem in public utilization of the game resource in many parts of the State.

Preliminary but essentially complete inventories of public lands indicate 715,588 acres or approximately 1.45 per cent of the total state area is available for non-urban recreation. About 75 per cent is owned and managed by federal agencies and 25 per cent is managed by the Nebraska Game and Parks Commission.

Forest Service lands account for 48 per cent of all public lands and about 64 per cent of the federal lands; lands managed by the Bureau of Sport Fisheries and Wildlife make up 21.8 per cent of the total public lands and 29.2 per cent of the federal lands. The National Park Service owns and manages three national monuments totaling 5,379 acres. The Corps of Engineers operates the Harlan County Reservoir in southcentral Nebraska and facilities at Gavins Point Dam in northeastern Nebraska. The Harlan County Reservoir unit includes about 31,600 acres of which 13,600 is water. Only three areas are managed by quasi-public or other similar organizations.

The Nebraska Game and Parks Commission owns or leases 152 areas totaling 182,231 acres. Included are five major parks, 20 wayside parks, six historical parks, 53 recreation areas, and 66 special use areas.

Location of state parks is resource-oriented and sites are highly limited. Size of three state parks is less than desirable to provide the quality of outdoor recreation intended for these areas.

Recreation areas may be either resource or user oriented and have general distribution throughout the State. Thirty-two per cent are less than 100 acres in size. Most of the recreation areas have been oriented to basic water resources including lakes, rivers, sand-pit lakes and reservoirs. About 93 per cent of all areas include waters or provide access to bodies of water having value for recreation. Approximately 90 per cent of the total acreage is leased by the Nebraska Game and Parks Commission from federal agencies and quasi-public or other local organizations.

Nebraska is of particular historical importance during the periods of western expansion. Financial and legal tools for development of a historical park system were provided by the 1959 legislature. Since that time the system has been expanded from one area to seven different sites, totaling 1,190 acres, which satisfy the requirements.

Acquisition and development of wayside areas has been accelerated during recent years. In September, 1967, 20 sites, ranging from three to 168 acres in size, were included in this category.

State special use areas are managed primarily for wildlife, hunting or fishing. In September, 1967, 66 areas totaling 45,444 acres were included in this class. Thirty-five per cent of the areas are less than 100 acres in size with 21.2 per cent less than 40 acres. Forty-two of the areas contain some

water and 13 have bodies of water in excess of 100 acres. Seven of those which do not contain water, provide access to relatively large bodies of water capable of providing traditional types of water-oriented activities.

Sixty-two per cent of the lands included in state special use areas are under management agreements or leased from federal or quasi-public agencies.

Distribution of non-urban lands available for outdoor recreation, activities provided, and relative participation in various activities were summarized and presented by socio-economic areas. Acres included in each class of recreation land as developed by ORRRC were given for each area and summarized by socio-economic areas.

Most public outdoor recreation areas of Nebraska are managed to provide basic activities which require little specialized equipment. The majority of these activities are oriented to water resources. Warm-water fishing and picnicking are the leading activities. Fishing was ranked as one of the top three activities on 60.5 per cent of the areas and picnicking on 48.7 per cent. Participation in each activity was listed for 72 per cent of the areas. Small game hunting, driving and sightseeing, camping, waterfowl hunting, nature study, boating and swimming were other leading activities listed in the order of relative participation as estimated by responsible management personnel.

Counties have not taken an active role in providing outdoor recreation facilities. Only one county has an active program although two counties have taken positive steps to develop an outdoor recreation program in the future.

Of 304 villages inventoried, 19 per cent had sufficient lands to meet minimum standards (25 acres per 1,000 population) and 3.6 per cent did not provide lands or facilities. Picnic facilities, playfields and playgrounds were the only significant facilities provided by villages.

Of 89 communities ranging in population from 1,000 to 5,000, 24.7 per cent had sufficient lands to meet minimum standards (20 acres per 1,000 population) and 18 per cent had less than five acres per 1,000 population. Picnic facilities, playfields, playgrounds and swimming pools were the only facilities reported in significant quantity.

Twenty-three cities of the first class (5,000 to 25,000 population) provided inventory data. Of these, four per cent had sufficient lands to meet minimum standards (15 acres per 1,000 population) and 13 per cent had less than five acres per 1,000. Each city provided picnic facilities, playgrounds and playfields and 14 provided one or more municipal swimming pools. Other reported facilities were shown.

Lincoln and Omaha are the only metropolitan areas of Nebraska. Based on the projected population for 1967, Lincoln had approximately 16.4 acres per 1,000 population and Omaha had about seven acres per 1,000. Both cities provide a wide range of activities on the available recreation lands.

Since over 97 per cent of the total state area is in private ownership, the excellent hunting opportunities currently enjoyed by hunters are a contribution of individual farmers and ranchers. Access to private lands for public fishing must be placed in the same category. Vacation farming is gaining impetus. Twenty-seven vacation farms were in operation or being developed in 1967. Typical activities and facilities included guest houses, horseback riding, camping, skeet shooting, games, fishing, hunting, nature study and participation in farm and ranch activities. Increased interest is being shown in development of private recreation facilities by rural groups. The Farm Home Administration provided financial assistance to 19 rural community groups in developing outdoor recreation areas during 1967. In addition to these, applications for association loans from five community groups were pending.

Data from the S.C.S. Conservation Needs Inventory provided information on 397 areas totaling approximately 400,000 acres of land and water which are being used for outdoor recreation activities. Seventy-three per cent of the areas listed and 84 per cent of the total land area listed are being used for fishing, hunting, vacation cabin and homesites and golf courses. Other significant developments are camping areas, field sports areas and water sports areas.

Data from other sources shows 156 private swimming pools, and 88 private golf courses. Forty-eight of 108 known sportsman's clubs provided data on 37 areas owned or leased by sportsman's groups. Property controlled totaled 1,640 acres. Picnic areas and target ranges were the most common developments occurring on 46 and 43 per cent of the areas, respectively.

The greatest potential for non-urban outdoor recreation lies in the development of water resources for recreational use. Proposed construction of six multi-purpose reservoirs and approximately 23 interconnected reservoirs of the mid-state complex will increase recreation waters significantly. With the completion of Interstate "80", these reservoirs will be readily available to residents of eastern Nebraska.

Development of small reservoirs under P.L. 566 offers excellent opportunity to provide water-oriented recreation which is readily available to people of local areas and municipalities. As of February 1, 1965, 101 small watersheds had been organized with activity centered in southeastern Nebraska. Data from 43 watersheds shows 409 structures impounding 11,464 surface acres in 50-year sediment pools. Many will have value for a relatively wide range of activities. All will have some value in the production of wildlife, hunting or related activities which may not be entirely water oriented.

The Missouri River has an untapped potential for pleasure boating with powered craft and is limited only by suitable access sites.

Use of easements may be used as a tool to provide access to streams or lakes.

The potential exists to develop major state parks in the Wildcat Hills of western Nebraska and the Sandhills of northcentral Nebraska. Fort Robinson of northwestern Nebraska could be expanded and developed into a major vacation area of northwestern Nebraska.

Nebraska has a rich history associated with development of the early west. Preservation and development of historic sites is important to both residents and non-residents. Several potential sites were identified which depict the history of the State from its early inhabitants to recent times.

The potential for increasing sport fishing opportunities lies in four basic areas: (1) Creation of new waters; (2) improved management of existing waters; (3) improved watershed management; and (4) development of tools to provide greater access and use of private waters.

The greatest potential for increasing hunting opportunity is in (1) development of agricultural programs which are amenable to the production of game; (2) development of public hunting areas, particularly for waterfowl; (3) utilization of the mourning dove as a game bird; and (4) use of exotic or non-indigenous game birds having desirable characteristics to bring into production game-bird deficient habitats.

Chapter VIII

Needs For

Outdoor Recreation

NEEDS FOR OUTDOOR RECREATION

LANDS AND WATERS

Needs have been calculated on the basis of demands for those recreation activities which can be readily adapted to the design load concept. Other activities, such as driving for pleasure, walking, attending outdoor events, etc., are treated in more general terms since the demand for these activities cannot be readily translated into facility and land needs. Standards have been used to estimate needs for acquisition and development of publicly financed recreational lands and facilities to establish general guidelines for public programs.

Standards

Standards, based on per capita needs for outdoor recreation areas, provide a useful guide in development of public outdoor recreation programs. The common method of expression is acres of recreation lands by type per 1,000 population. They are particularly useful in delineating areas of primary needs and illustrating where emphasis should be placed in acquisition and development of outdoor recreation areas and facilities.

However, standards should be viewed in this light; they serve as a guide -- not as a goal. Standards developed for one region may not be entirely applicable to another. The character of specific sites may alter the acreage required to provide the type and quality of outdoor recreation experience desired. The ultimate amount of land that should be devoted to outdoor recreation, fish and wildlife, whether public or private, will largely depend upon land use capabilities and the highest and best use.

This concept is most applicable to those areas which are primarily user-oriented. It is not applicable to those areas which are primarily resource-oriented. The latter will depend upon quality and its value to the people as a public resource. Consequently, use of standards in such instances is an artificial and unacceptable method of evaluation. However, qualitative criteria may be established to describe the relative value of resource-oriented areas to the public.

Following the concepts outlined above, per capita standards have been developed only for Class I, II and III recreation lands which may be acquired, developed and operated as municipal, county or state areas. Class I lands and waters are primarily user-oriented while Class II may be either user or resource-oriented. Class III lands will usually be resource based but designated for specific uses and oriented to segments of the recreation public, e.g. public hunting areas, natural areas, etc. (See footnotes of Table 8.1 for definition of Class I, II and III lands).

Development of standards for wayside parks was based on arbitrary time

Table 8.1. Standards for estimating land needs for outdoor recreation.

Land Class[1]	Planning Area	Standards
I and II	Metropolitan (over 100,000)	10 acres/1,000
	Cities of the first class (5,000 to 100,000)	15 acres/1,000
	Cities of the second class (1,000 to 5,000)	20 acres/1,000
	Villages (less than 1,000)	25 acres/1,000
	Non-urban areas	
	1967	0 acres/1,000
	1972	35 acres/1,000
	1980	40 acres/1,000
	2000	50 acres/1,000
I	State Wayside Areas	One 3-5 acre park per 50-60 miles of major highway[2]
III	Non-urban areas	
	1967	30 acres/1,000
	1972	35 acres/1,000
	1980	40 acres/1,000
	2000	50 acres/1,000

[1]Definitions of land classes:

Class I. High-Density Recreation Areas. Generally located near urban centers and user-oriented in design; diverse and varied recreation opportunities appropriate to terrain and location; mass accommodations provided.

Class II. General Outdoor Recreation Areas. The natural resource is utilized for the opportunity it provides, regardless of location; areas are readily accessible, equipped with a wide variety of man-made facilities which may vary from the simple to the elaborate; activities are generally of a localized nature and "mass" use is not generally a feature as in Class I.

Class III. Natural Environment Areas. Generally large areas which provide traditional outdoor recreation activities. The user is encouraged to use the area in its natural state with a minimum of man-made developments for access and sanitation. Scattered use is more likely than concentrated use. The area may be used in conjunction with other resource uses.

[2]On the Interstate "80" system of the Platte valley, wayside areas should be about 25 to 30 miles apart and may range in size from 10 acres to about 200 acres.

distance factors on major highways. For each major highway, a wayside park should be established for each one hour of travel or every 50 to 60 miles of highway. On Interstate "80" with its greater traffic flow, major wayside areas or road ranches should be established at distances of 25 to 30 miles. Other minor and less intensively developed areas may be established between major road ranches wherever the potential exists.

Since state parks are basically resource oriented and potential sites are highly limited, no attempt has been made to develop per capita needs. Lands and facilities available on state parks were included as part of the present supply, however, in determination of needs by socio-economic areas. Criteria for establishment of state parks have been defined by the legislature as those sites "of substantial area with the primary value of significant statewide scenic, scientific or historic interest, having a complete development potential and, where possible, a representative portion which can be retained in a natural or relatively undisturbed state." Basic policy restricts establishment of major state parks to those sites having a complete vacation potential, desired natural features, and representing a major geographical region of the State.

Although state park land needs are not shown in Table 8.2, immediate acquisition of additional lands will be needed in the Scottsbluff SEA to complete the 40,000 acre complex at Fort Robinson State Park and in the Beatrice SEA for the land identified for Indian Cave State Park. Active projects are currently in effect for both the Fort Robinson and Indian Cave State Parks. Additional land acquisition is also planned at Ponca State Park in the South Sioux City SEA.

Similarly, no attempt has been made to establish standards for Class IV, V, and VI sites. These resources are very limited and do not lend themselves to artificial criteria designed to guide acquisition programs. Most are unique and irreplaceable. Acquisition must be made where the site occurs and in relation to its value as a scenic, scientific or historic resource.

Standards developed by various recreation organizations and planners to guide land needs were reviewed in relation to conditions which exist in Nebraska. Development of standards involved many judgement considerations. Potential use and capacity in relation to site characteristics were given primary consideration.

As social and economic changes occur between 1972 and 2000, additional demand will be created from the same base population of 1,000 people. This was recognized by adopting higher standards for the period of 1972 to 2000 for metropolitan areas and regional or state areas.

Standards used in the present plan, Table 8.1, are higher than those developed by many other planning agencies, especially for non-urban sites. Again judgement determinations had to be made based on characteristics of existing and potential lands and waters. The following were primary considerations in development of standards:

(1) A substantial part of Class II and III non-urban areas are lands and waters included in large multi-purpose reservoirs, portions of which have only a limited capability of effectively satisfying recreation needs.

Table 8.2. Needs for non-urban recreational lands (Class I, II and III).

Socio-Economic Area	Present Supply	1967 Need	1967 Deficiency	1972 Need	1972 Deficiency	1980 Need	1980 Deficiency	2000 Need	2000 Deficiency
South Sioux City									
Class I & II	625	842	217	960	335	1,126	501	1,563	938
Class III	320	842	522	960	640	1,126	806	1,563	1,243
Total	945	1,684	739	1,920	975	2,252	1,307	3,126	2,181
Omaha									
Class I & II	4,474	16,447	11,973	21,292	16,818	29,601	25,127	63,143	58,669
Class III	8,257	16,447	8,190	21,292	13,035	29,601	21,344	63,143	54,886
Total	12,731	32,894	20,163	42,584	29,853	59,202	46,471	126,286	113,555
Lincoln									
Class I & II	6,402	7,419	1,017	9,256	2,854	12,305	5,903	24,200	17,798
Class III	7,353	7,419	66	9,256	1,903	12,305	4,952	24,200	16,847
Total	13,755	14,838	1,083	18,512	4,757	24,610	10,855	48,400	34,645
Beatrice									
Class I & II	200	1,899	1,699	2,010	1,810	2,082	1,882	1,500	1,300
Class III	2,851	1,899		2,010		2,082		1,500	
Total	3,051	3,798	1,699	4,020	1,810	4,164	1,882	3,000	1,300
Norfolk									
Class I & II	1,733	3,035	1,302	3,467	1,734	4,092	2,359	5,720	3,987
Class III	11,942	3,035		3,467		4,092		5,720	
Total	13,675	6,070	1,302	6,934	1,734	8,184	2,359	11,440	3,987
Columbus									
Class I & II	1,050	1,599	549	1,867	817	2,287	1,237	3,622	2,572
Class III	425	1,599	1,174	1,867	1,422	2,287	1,862	3,622	3,197
Total	1,475	3,198	1,723	3,734	2,239	4,574	3,099	7,244	5,769
Grand Island									
Class I & II	412	2,800	2,388	3,235	2,823	3,880	3,468	5,720	5,308
Class III	6,904	2,800		3,235		3,880		5,720	
Total	7,316	5,600	2,388	6,470	2,823	7,760	3,468	11,440	5,308
Hastings									
Class I & II	87	1,879	1,792	2,167	2,080	2,598	2,511	3,851	3,764
Class III	3,713	1,879		2,167		2,598		3,851	138
Total	3,800	3,758	1,792	4,334	2,080	5,196	2,511	7,702	3,902

Table 8.2. (continued)

Socio-Economic Area	Present Supply	1967 Need	1967 Deficiency	1972 Need	1972 Deficiency	1980 Need	1980 Deficiency	2000 Need	2000 Deficiency
Kearney									
Class I & II	1,726	1,614		1,879	153	2,280	554	3,533	1,807
Class III	33,939	1,614		1,879		2,280		3,533	
Total	35,665	3,228		3,758	153	4,560	554	7,066	1,807
McCook									
Class I & II	416	1,209	793	1,321	905	1,522	1,106	1,589	1,173
Class III	31,235	1,209		1,321		1,522		1,589	
Total	31,651	2,418	793	2,642	905	3,044	1,106	3,178	1,173
North Platte									
Class I & II	608	1,999	1,391	2,308	1,700	2,768	2,160	4,131	3,523
Class III	10,178	1,999		2,308		2,768		4,131	
Total	10,786	3,998	1,391	4,616	1,700	5,536	2,160	8,262	3,523
Ogallala									
Class I & II	394	566	172	616	222	680	286	737	343
Class III	94,266	566		616		680		737	
Total	94,660	1,132	172	1,232	222	1,360	286	1,474	343
Valentine									
Class I & II	1,303	1,542	239	1,636	333	1,706	403	1,309	6
Class III	312,198	1,542		1,636		1,706		1,309	
Total	313,501	3,084	239	3,272	333	3,412	403	2,618	6
Scottsbluff									
Class I & II	1,942	2,634	692	3,098	1,156	3,894	1,952	6,482	4,540
Class III	161,391	2,634		3,098		3,894		6,482	
Total	163,333	5,268	692	6,196	1,156	7,788	1,952	12,964	4,540
NEBRASKA									
Class I & II	21,372	45,484	24,224	55,112	33,740	70,821	49,449	127,100	105,728
Class III	684,972	45,484	9,952	55,112	17,000	70,821	28,964	127,100	76,311
Total	706,344	90,968	34,176	110,224	50,740	141,642	78,413	254,200	182,039

(2) The open character of many sites in Nebraska requires ample space for the user to obtain a satisfactory outdoor recreation experience.

Standards for cities and villages which have been suggested by the National Recreation Association[1] were used as guides in development of standards for Nebraska. These standards were modified slightly to reflect increasing demand for outdoor recreation and to conform with the classification of cities and villages within the State.

Standards used for estimated land needs for Class I, II and III lands are shown in Table 8.1.

As previously indicated, quantitative standards were not developed for Class IV, V and VI lands. Qualitative standards are defined, however, based on guidelines given in the definitions by ORRRC:

(1) Class IV. Outstanding Natural Areas

This class will include only those areas which have remarkable natural wonder, high scenic splendor, or features of scientific importance. The primary value is in the quality and uniqueness of the natural features. These areas should be managed to maintain an appropriate setting for sightseeing, enjoyment and study which is commensurate with preservation of the quality of the natural features.

(2) Class V. Primitive Areas

This class will include extensive natural areas which have not been disturbed and are without mechanized transportation. The area must be large enough to provide the user with a reasonable wilderness experience and have high inspirational, esthetic, scientific and cultural assets.

(3) Class VI. Historic and Cultural Sites

These sites will include those associated with the history, tradition, or cultural heritage of national, state or local interest and which are of enough significance to merit preservation or restoration. Management should be oriented to restoration, preservation and interpretation for sightseeing, enjoyment, and study of the historic and cultural features. Limited day-use facilities may be provided when such facilities do not detract from nor interfere with the primary purposes and values of the site.

Land Needs

Class I, II and III Non-urban Recreation Lands

Nebraska reflects the national problem of poor distribution of recreation

---

[1]Rodney, Lynn S. 1964. Administration of Public Recreation. The Ronald Press Co., New York.

resources in relation to the people. Existing recreation lands are located primarily in sparsely populated western Nebraska while the populous east is highly deficient in day-use areas. Except for vacation or weekend use the resources of western Nebraska are not readily available to the vast majority of the people, Figures 8.1 and 8.2.

Limited time and income are the greatest deterrents to participation in outdoor recreation activities. Distance of recreation areas from populations magnifies each of these problems: (1) limited travel time available may reduce or prohibit participation; and (2) greater distance increases the cost of participation. The basic problem lies in developing recreation resources and facilities closer to the source of demand -- the people. Analysis of demand and needs by socio-economic areas and time-distance factors provides the approach to obtain a balance between recreation resources and the people.

This was the approach taken to analyze resident needs for Class I, II and III recreation lands in Nebraska. Responsibility for an action program to meet the identified needs may rest with either the federal, state, county or municipal governments, depending upon the scope of individual projects and the organizational and financial capabilities of local governments.

Existing and projected needs for non-urban recreation lands in these categories are summarized in Table 8.2. In most cases it will not be necessary to satisfy all the needs for lands in the socio-economic area in which the need has been identified. Lands acquired and developed in one area may serve a portion of the needs identified in another area. However, this approach shows where acquisition and development programs should be emphasized for the period considered. For those areas in which needs were identified, consideration should be given in the action phases to servicing the population within a one to one and one-half hour drive or a maximum of 75 miles from the population centers.

Based on methods used, existing deficiencies total 24,224 acres of Class I and II lands and 9,952 acres of Class III lands. Compared to existing lands, an additional 33,740 acres of Class I and II lands will be needed by 1972, 49,449 acres by 1980, and 105,728 acres by the year 2000. For Class III lands, an additional 17,000 acres will be needed by 1972, 28,964 by 1980 and 76,311 by the year 2000.

A review of Table 8.2 will show that the eastern quarter of the State is the region of primary need for the development of recreation lands and waters in Nebraska, Figure 8.3.

Class I and II Municipal Recreation Lands

Minimum needs for municipalities were estimated on the basis of standards shown in Table 8.1 in relation to the lands inventoried for communities in each population class. Although precise needs could not be determined for each community, this procedure based on resource capability and potential lands, does provide a reasonable measure of the magnitude of recreation land needs for municipalities. Data from which land needs and deficiencies were estimated are shown in Appendix C.1.

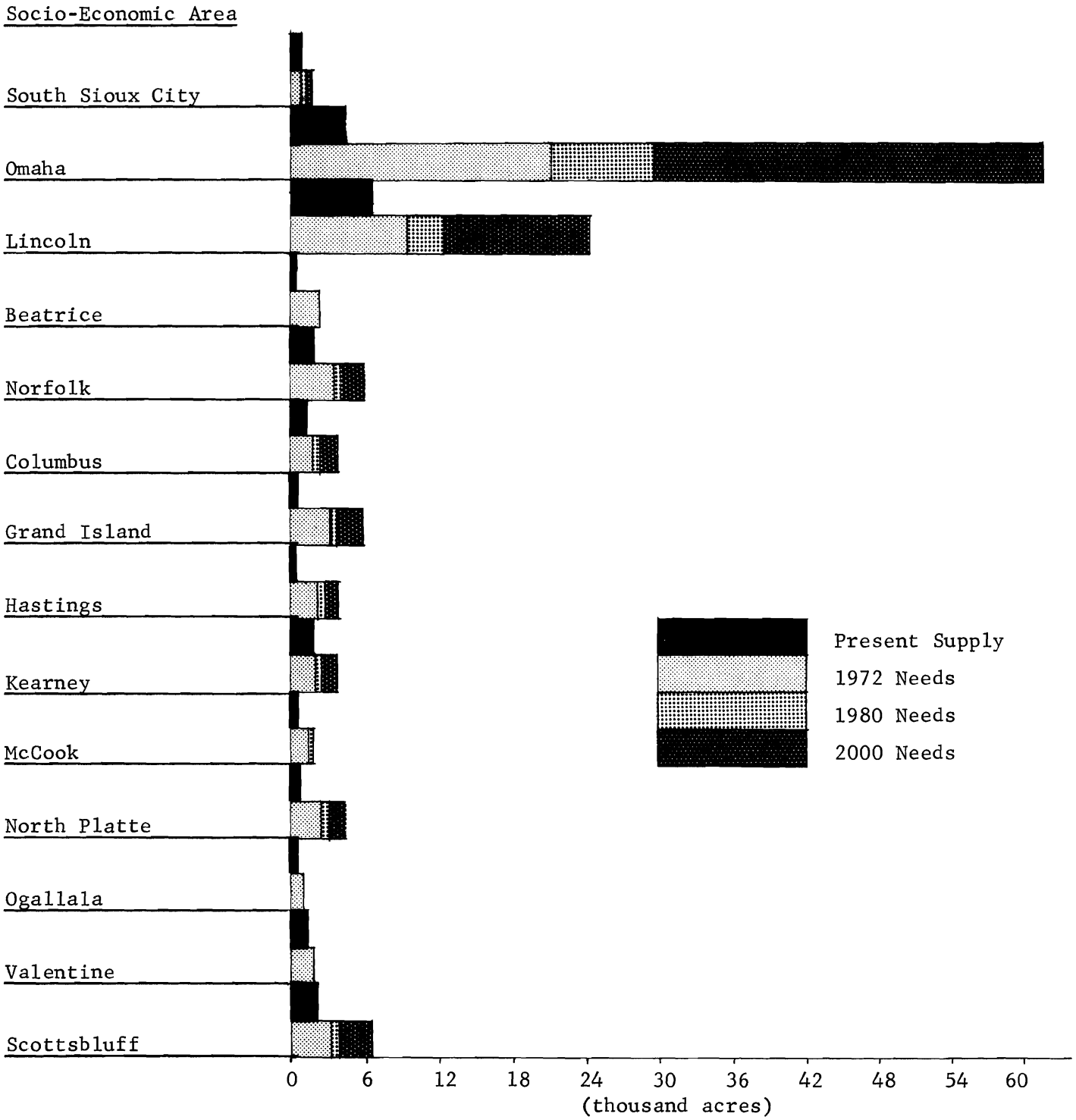


Figure 8.1: Class I and II non-urban land needs based on socio-economic area populations and non-urban land standards outlined in Table 8.1.

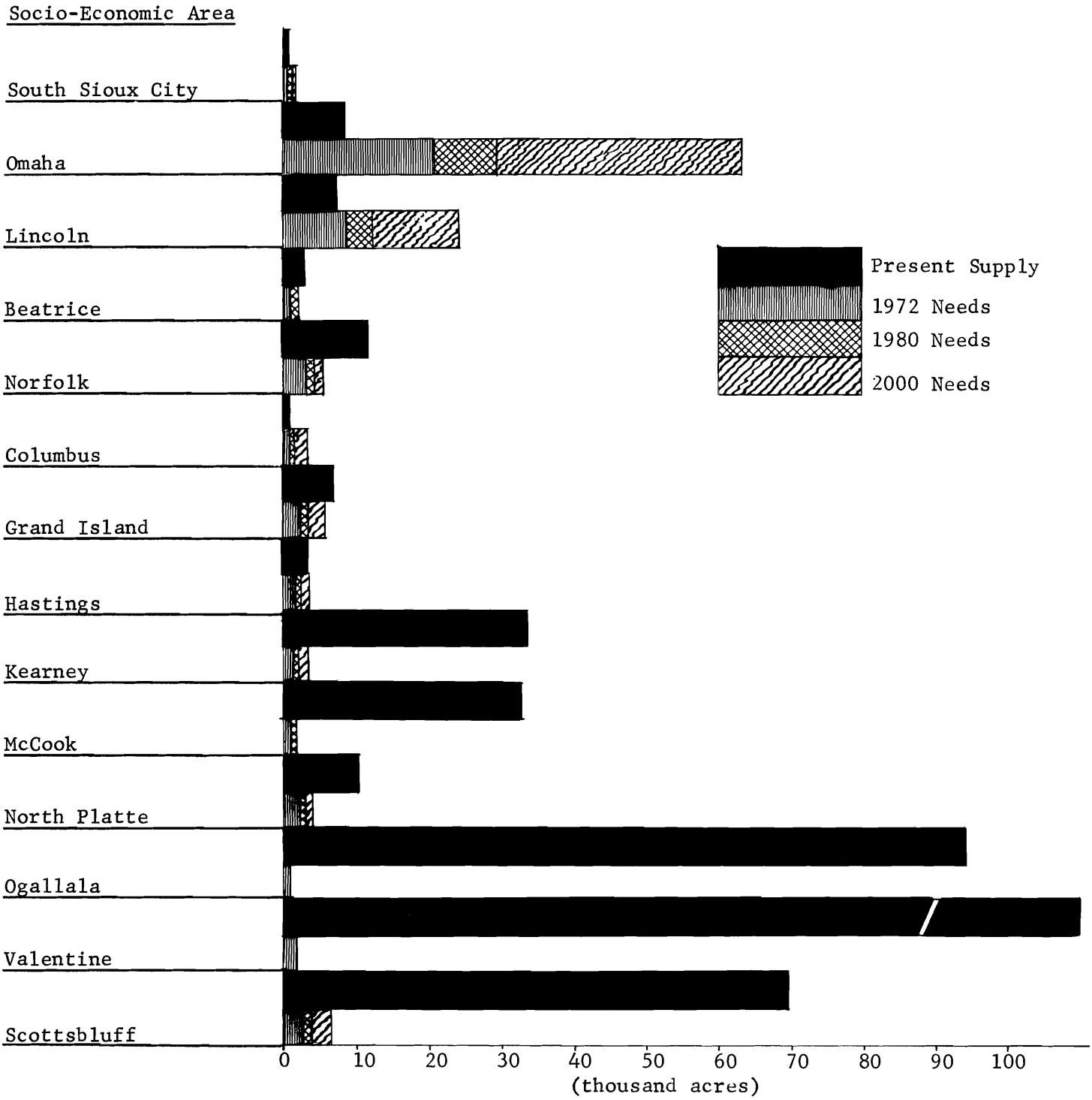
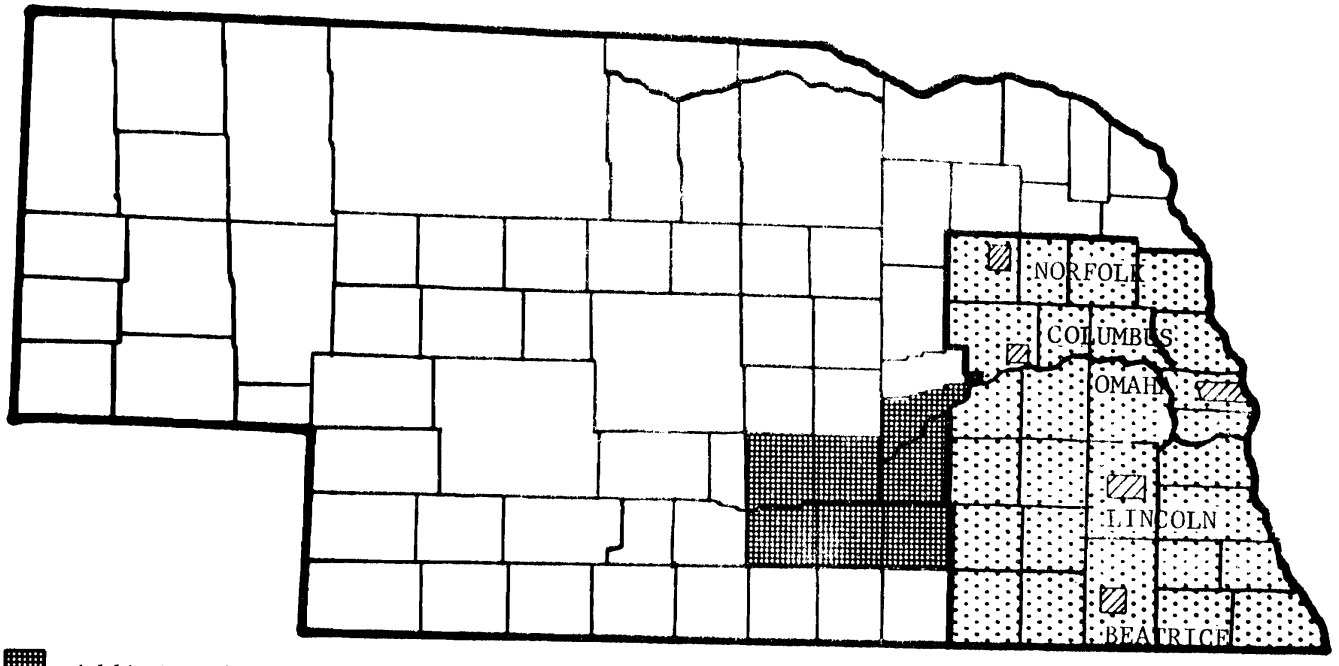


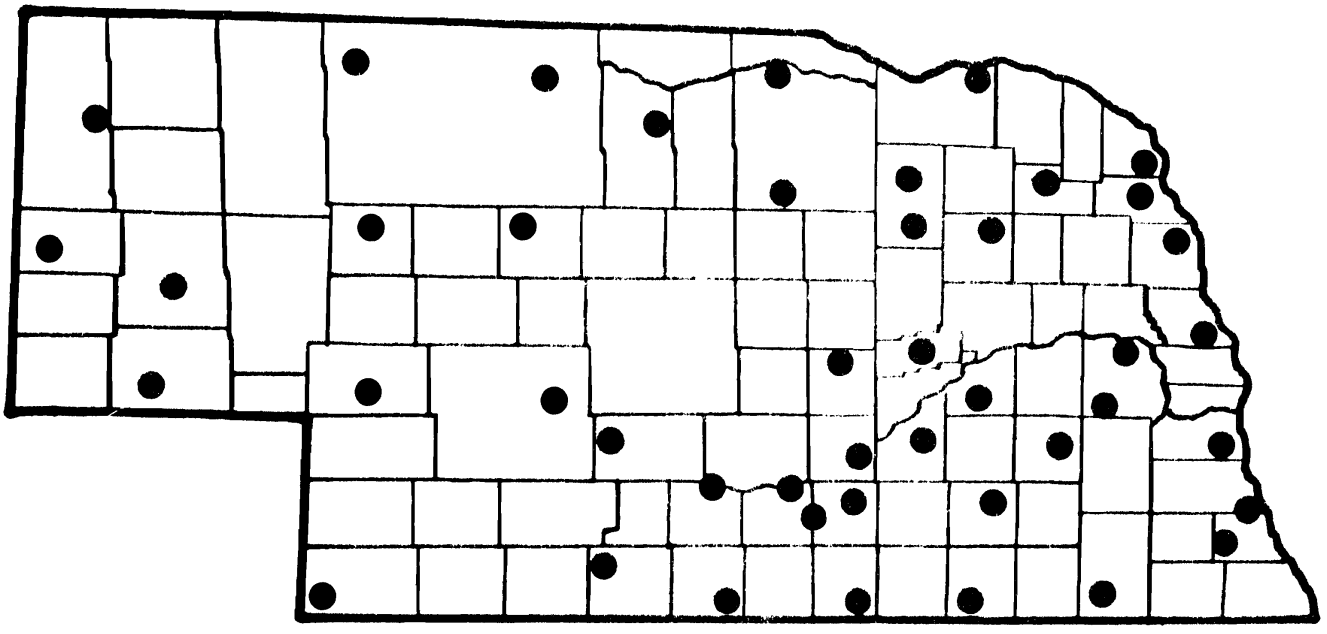
Figure 8.2: Class III non-urban recreation land needs based on socio-economic area populations and non-urban land standards outlined in Table 8.1.

Figure 8.3. Area of primary need for non-urban recreation lands.



Additional area which can meet some of the demand arising from metropolitan areas with completion of Interstate 80.

Figure 8.4. Needs for State Wayside Areas.



A summary of existing municipal needs for additional recreation lands is shown in Table 8.3 for municipalities over 200 in population. The total estimated present deficiency for these municipalities is 5,423 acres, which includes 1,608 acres for villages; 1,355 acres for cities of the second class; 1,789 acres for cities of the first class and 671 acres for the metropolitan cities. Considering past population trends, needs for villages and cities of the second class will remain relatively stable through 1972. Needs of cities of the first class and metropolitan cities will increase by 1972 and show substantial increases by 1980. Purchase of land now to satisfy future needs is often necessary to preclude payment of excessively high prices for land later on.

State Wayside Areas (Class I):

Since state wayside areas are designed and oriented to serve transient users, both resident and nonresident, the needs for this special facility have been considered separately from other areas providing primarily day use and overnight facilities for resident populations. Needs will be considered under two broad categories: (1) Interstate "80" which is the show window of Nebraska and the major transcontinental route from the populous east to the vacationland west; and (2) wayside areas located on other major state or U. S. highways.

Interstate "80": The Platte Valley of Nebraska, one of the great natural highways of the world, has been a major transcontinental route from early westward expansion to the present time. The Overland Trail, Pony Express, Mormon Trail and Oregon Trail, all originating in different locations to the east, converged in the Platte Valley near Kearney and followed the natural highway of the Valley on west. The first transcontinental railroad and the first improved transcontinental highway, U. S. 30, followed the Platte Valley. Today, with the completion of Interstate "80", Nebraska is at the crossroads of the Nation.

This highway and "feeder roads" begin at the extreme northeastern part of the United States at Augusta, Maine, and come down through Boston, New York City and Philadephia; westward through Harrisburg, Pittsburg, Cleveland and Chicago to Omaha. Another segment will come from Boston through Albany, Rochester, Buffalo and down to Cleveland. Interstate "80" will continue through Nebraska to the vicinity of Big Springs, where one branch will be built westward to Cheyenne and another southwestward to Denver.

Over 50 per cent of the American people live in the immediate vicinity of this system of super highways east of Omaha. More tourist travel will originate on Interstate "80" than any other transcontinental highway. The following identified needs are designed to provide the recreational services required by nonresidents and residents traveling through and to Nebraska by Interstate "80" and contribute to the full economic development of the Platte Valley.

Areas for acquisition and development along Interstate "80" have been considered in three broad categories: (1) Major recreation areas or "road ranches"; (2) day-use recreation areas; and (3) special use areas.

1. Road ranches will be developed at major interchanges and oriented to lakes which have been created during highway construction. They will be

Table 8.3. Estimated minimum municipal needs for recreation lands for municipalities over 200 in population(1) in 1967.

Socio-Economic Area	Population Class of Municipality(2)	No. of Units	Per Cent With Adequate Lands	Total Estimated Deficiency (Acres)
South Sioux City	Villages	10	20	94
	Cities of 2nd Class	2	0	23
	Cities of 1st Class	1	0	97
Sub-total		13		214
Omaha	Villages	31	10	182
	Cities of 2nd Class	12	17	229
	Cities of 1st Class	4	0	420
	Metropolitan	1	0	671
Sub-total		48		1,502
Lincoln	Villages	28	10.7	150
	Cities of 2nd Class	9	22	181
	Cities of 1st Class	2	0	95
	Metropolitan	1	100	0
Sub-total		40		426
Beatrice	Villages	22	13.6	109
	Cities of 2nd Class	4	0	39
	Cities of 1st Class	3	33	131
Sub-total		29		279
Norfolk	Villages	24	12.5	162
	Cities of 2nd Class	12	33	162
	Cities of 1st Class	1	0	127
Sub-total		37		451
Columbus	Villages	15	20	80
	Cities of 2nd Class	4	50	22
	Cities of 1st Class	1	0	88
Sub-total		20		190
Grand Island	Villages	24	8.3	153
	Cities of 2nd Class	8	13	141
	Cities of 1st Class	1	0	257
Sub-total		33		551
Hastings	Villages	18	11	122
	Cities of 2nd Class	5	40	37
	Cities of 1st Class	1	0	139
Sub-total		24		298
Kearney	Villages	15	0	95
	Cities of 2nd Class	5	60	29
	Cities of 1st Class	2	0	256
Sub-total		22		380

Table 8.3. (continued)

Socio-Economic Area	Population Class of Municipality(2)	No. of Units	Per Cent With Adequate Lands	Total Estimated Deficiency (Acres)
McCook	Villages	17	34	99
	Cities of 2nd Class	5	40	51
	Cities of 1st Class	1	0	53
Sub-total		23		203
North Platte	Villages	18	16.6	104
	Cities of 2nd Class	3	0	115
	Cities of 1st Class	2	0	58
Sub-total		23		277
Ogallala	Villages	7	0	37
	Cities of 2nd Class	4	0	124
	Cities of 1st Class	0	0	0
Sub-total		11		161
Valentine	Villages	17	23.5	106
	Cities of 2nd Class	8	25.0	127
	Cities of 1st Class	0	0	0
Sub-total		25		233
Scottsbluff	Villages	12	8.3	115
	Cities of 2nd Class	5	40	75
	Cities of 1st Class	5	40	112
Sub-total		22		302
Nebraska (Summary)	Villages	258	13.6	1,608
	Cities of 2nd Class	86	25.6	1,355
	Cities of 1st Class	23	16.7	1,789
	Metropolitan	2	50.0	671
Total		369		5,423

(1) Needs of villages, cities of 2nd class and cities of 1st class were based on standards shown in Table 8.1. 1960 population data were used for towns of less than 2,500 population while the inventory of Nebraska Bureau of Business Research's 1966 estimates of population were used for towns over 2,500 population.

(2) Definitions of population classes:
Villages - less than 1,000 in population
City of 2nd Class - 1,000 to 5,000 population
City of 1st Class - 5,000 to 100,000 population
Metropolitan - over 100,000 in population

developed to serve both transients and area residents in order to provide a relatively wide range of opportunity for various outdoor recreation activities.

Five areas will be purchased and developed between Grand Island and Big Springs and two areas will be developed between Omaha and Grand Island, probably in Douglas and Lancaster Counties. The following are tentative locations of the areas between Grand Island and Big Springs.

(1) Grand Island Interchange, Hall County

(2) Gibbon Interchange, Buffalo County

(3) Elm Creek Interchange, Buffalo County

(4) Maxwell Interchange, Lincoln County

(5) Big Springs Interchange, Deuel County

Typical development of a road ranch complex will include 50 to 150 picnic units, 50 to 150 camp units, playground sites in relation to the picnic camping complex, modest interpretive and informational facilities, walking trails, fishing, swimming beaches, shower and laundry complexes for overnight users, comfort stations with adequate sewage facilities, water distribution system including irrigation, interior roads and parking lots, residences, maintenance and equipment buildings and seeding and landscaping.

2. Day-use areas will also be developed at interchanges and oriented to lakes created during highway construction. Activities will be more limited than on road ranch complexes and will be directed to day use. Each of these areas will be located between Grand Island and Big Springs at the following tentative locations:

(1) Alda Interchange, Hall County

(2) Wood River Interchange, Hall County

(3) Shelton Interchange, Buffalo County

(4) Odessa Interchange, Buffalo County

(5) Gothenburg Interchange, Dawson County

(6) Hershey Interchange, Lincoln County

(7) One undetermined location between Hershey and Big Springs

(8) One undetermined location in Cheyenne or Kimball County

Typical development of these sites will include 15 to 20 picnic units, shelters, fishing, comfort stations, potable water supplies, interior roads and parking lots, seeding and landscaping.

3. Special use areas may be located either adjacent to Interstate "80", at interchanges or within three or four miles of the highway and easily accessible. They will be oriented to lakes created during highway construction, sand-pit lakes from gravel mining or frontage and accretion along the Platte River. Compared to the categories discussed previously, developments will be minimal and oriented to activities such as fishing, hunting, nature study, primitive camping, hiking and walking. Typical developments will include comfort stations, interior roads and limited picnic facilities. Up to 3,000 acres may be acquired and included in this category.

Most of the sites which are to be acquired for these purposes are presently owned by the Department of Roads.

Other Wayside Areas: Needs for state wayside areas which will be located on major highways other than Interstate "80" were determined on the basis of standards given in Table 8.1 and in relation to other recreation lands which may serve transients. Needs for these areas have been identified previously in a 10-year capital improvement plan for state parks which was prepared by the Nebraska Game and Parks Commission and received the concurrence of the State Legislature.

Approximate locations of 48 wayside areas as identified in the 10-year capital improvement plan are shown in Figure 8.4. Of these, 20 have been acquired. Estimated minimum land needs for the remaining areas are 420 acres, all of which will be developed for high density use.

These sites should be intensively developed as day-use and overnight areas which feature interpretive facilities when appropriate, picnic units and adequate camping sites. Playground facilities should be provided in relation to the camping-picnicking complex. Sanitation units, water distribution systems, adequate roads and parking areas must be provided.

Typical development of these areas will include ten picnic units, shelters, a capacity for 10 camp units, vault latrine toilets, playground equipment, a minimum of one well for drinking water, a parking lot capable of servicing 15 to 20 vehicles at any given time and adequate landscaping to enhance the quality of the area.

Historic, Scientific and Cultural Sites (Class VI)

Development and interpretation of these sites is of inestimatable value to the tourist program in Nebraska. As previously indicated, no attempt has been made to establish minimum quantitative needs. As sites are identified and their significance determined, they should be acquired, preserved, restored, interpreted and developed to insure future generations a physical link to their heritage. Emphasis should be placed on acquisition of areas which, when properly interpreted, present a representative cross section of historic and prehistoric times. Areas of local historic significance should be acquired and developed by political subdivisions. The Nebraska Historical Society and its local chapters can provide valuable assistance in the interpretation of these sites.

The following areas are of sufficient value and significance to be identified as needs. Each site should be acquired, developed and interpreted to

convey its significance in the historic and cultural development of the area and State. The sites listed provide a cross section of prehistoric and historic times.

A. Prehistoric.

1. Nehawka Flint Quarries, Cass County

2. Signal Butte Prehistoric Indian Site, Scotts Bluff County

3. Leary Site Oneota Culture, Richardson County

B. Early fur trade and explorations.

1. Ft. Charles (Not yet located), thought to be in Dakota County

2. Ft. Atkinson, Washington County

C. Interpretation of Plains Indian culture.

1. The most suitable site located thus far is the Pawnee Village east of Red Cloud in Webster County. The site which is ultimately developed should be a representative village or camp site, preferably a village, which depicts continuous or intermittent habitation for a considerable period of time. The sequence of cultural occupation should be illustrated.

2. Wright Site Protohistoric Pawnee Village, Nance County.

3. Linwood Site - historic Pawnee village located near Skull Creek, Butler County.

D. Interpretation of the history of the Missouri River.

This should be an interpretive installation which illustrates the geological development of the Missouri River, the Indian population, the fur trade, exploration, early river traffic and present uses. The installation should be located in a natural river setting with good access. The area should be a logical visitation point along the Lewis and Clark Trailway. In view of the environmental requirements and access, Nemaha County near Brownville would be the logical location.

E. Expansion and westward migrations.

1. Completion of acquisition, restoration and interpretation of Ash Hollow and Windlass Hill, Garden County.

2. Acquisition and interpretation of a "satellite camp" of Fort Kearny, Kearney County.

3. Location, acquisition and interpretation of Fort Sanford.

4. Acquisition, development and interpretation of a massacre site in Hitchcock County or site of a battle between Indians and/or emigrant wagon trains and cavalry.

5. Robidoux Pass, Scotts Bluff County

6. Pony Express Stations - Gothenburg, Alkali, Diamond Springs, Mud Springs.

F. Military-Settler phase.

1. Completion of restoration and interpretation of Fort Hartsuff, Valley County.

2. Development and interpretation of Rock Creek Station in Jefferson County which has significance as a site along the Oregon Trail, a Pony Express Station, Overland Stage and Freighting Station and the site of the Hickock-McCanles fight.

3. Restoration and interpretation of a Kinkaider Cabin.

4. Haumont Sod House, Custer County. This is a two story sod house in excellent condition which is unique rather than representative.

G. Industry.

1. Acquisition, restoration and interpretation of Lime Kiln near Fairbury in Jefferson County which supplied Fort Kearny with lime for building construction.

2. Interpretation of potash industry in western Nebraska.

3. Past and present agricultural industry.

H. Cultural.

1. Development of a state historical park to illustrate and interpret the air age with emphasis on the retaliatory and deterrent capabilities of the Strategic Air Command and its preceding air arms. The opportunity exists to develop such a facility at Offutt Air Force Base, Omaha, in cooperation with the U. S. Air Force which will contribute various air frames and weaponry, as well as technical assistance in support of the project.

2. Development of a typical rural school house in a proper outdoor setting in which day-use areas may also be provided.

3. Acquire, stabilize and provide interpretation of octagonal brick house southeast of Nebraska City in Otoe County. Day-use area may be provided also.

4. Mobile unit to illustrate the cultural and historic development of Nebraska.

This unit should be flexible and mobile enough to satisfy the requirements of all areas. It may be used at major state areas to supplement existing interpretive facilities or for maximum use periods at sites which have no interpretive facilities.

FACILITIES AND PROGRAM NEEDS BY ACTIVITIES

As with recreation lands, facilities should be provided in relation to the people -- the source of demand. The ultimate objective of the total outdoor recreation program should be to provide a wide range of activities which will allow a relatively free choice of recreation pursuits by the users. Adequate day-use facilities should be available within a reasonable distance of population centers. Travel time to such facilities should not exceed one to one and one-half hours for regional non-urban sites.

Picnicking

Picnicking is a traditional family activity which is highly popular in Nebraska both as a primary and a complementary activity. The major portion of picnicking demand occurs during the summer months from Memorial Day to Labor Day. Peak season demand is expected to increase by 17 per cent during the next five years, 40 per cent by 1980, and 134 per cent by the year 2000, Table 6.14.

Data from an on-site user survey conducted by the Nebraska Game and Parks Commission during the summer of 1967 indicate that about 17 per cent of the visitors interviewed at large reservoirs and state parks picnicked. At state parks 10.6 per cent indicated that picnicking was their primary activity while 6.7 per cent picnicked in conjunction with other primary activities, Table 6.8. Only 6.5 per cent of visitors to water-based recreation areas listed picnicking as their primary activity while an additional 10.4 per cent mentioned picnicking as a secondary or complementary activity in which they also participated during their visit, Table 6.7.

Quantitative needs have been calculated on the basis of peak day capacity. It is estimated that 60 per cent of picnicking occasions during the peak season occur on the 14 peak days. Each picnic table can accommodate an average of eight persons per day (two groups of four people). For the purpose of calculating land needs, it was estimated that seven tables can be located on an acre of land. The design load factors obtained from these assumptions were then applied to the peak season resident demand for each socio-economic area for the years 1972, 1980 and 2000 to obtain estimated gross needs for picnic tables and acres of picnicking grounds for each SEA. Deficiencies were obtained by finding the difference between estimated needs for the years used and present capacity, both urban and non-urban, in each socio-economic area, Table 8.4.

Based upon the methods outlined above, Nebraska will need an additional 1,632 acres of developed picnic areas by 1972, 2,373 acres by 1980, and 5,419 acres by the year 2000. Over 90 per cent of these needs occur in the Omaha and Lincoln SEA's, where the majority of Nebraskans live. Some areas such as the Valentine, North Platte, Norfolk, Columbus, and Grand Island SEA's appear to have a sufficient amount of land devoted to picnicking areas for the near future. However, more picnic facilities will be needed to provide for resident picnicking demand, since the number of tables per acre is less than the standard density per acre used in calculating needs.

Needs shown in Table 8.4 reflect gross needs for picnicking facilities necessary to satisfy peak use periods at both urban and non-urban publicly developed sites as well as privately owned picnicking facilities. Consequently, all deficiencies shown in this table will not need to be satisfied by additional public developments. The primary purpose of Table 8.4 is to illustrate relative needs in each socio-economic area and to show to what extent these needs are presently being satisfied by public picnicking facilities.

Much of the present deficiency in picnicking facilities could be met by developing existing public recreation lands. There are many areas in Nebraska which can provide good locations for picnicking grounds. Open spaces in urban areas, town and village parks, natural lakes and reservoirs, scenic overlooks, wooded areas near streams, and numerous other places can be utilized for picnic sites.

An increasing number of picnic tables, grills, etc. are being installed in private homes. These family facilities will tend to relieve some of the use pressure at public picnicking grounds, but attractive and well maintained public picnic areas will be needed to serve the major portion of picnicking demand in Nebraska.

The main needs for picnicking facilities in Nebraska are:

(1) Additional picnicking facilities to satisfy local resident demand. These needs originate primarily near the larger urban areas and should be satisfied through urban public developments and by private facilities. Non-urban user-oriented areas located near population centers can also serve a portion of these needs.

(2) Picnicking facilities at non-urban recreation areas to serve visitors to these areas. Most picnicking demand at these areas results from picnicking serving as a secondary and complementary activity to other outdoor recreational activities such as fishing, camping and boating. Thus, facilities for this activity are needed at non-urban outdoor recreation areas to fully service the users.

(3) Picnicking facilities at recreational areas designed primarily to service transients, particularly along Interstate "80".

Camping

Both state and national data indicate that demand for camping facilities by residents and nonresidents will continue to rise rapidly. Resident demand for camping in Nebraska during the peak season will increase by an estimated 46 per cent over the next five years, 96 per cent by 1980 and 308 per cent by 2000. During this time demand by residents for camping will rise from an estimated 797,000 occasions to over three million by 2000.

Camping was the third most important reason for visiting state parks listed by participants in the Nebraska Game and Parks Commission on-site user survey. Camping was cited as the primary activity by 15.5 per cent of the visitors interviewed, while an additional 5.4 per cent rated it as a secondary activity.

Table 8.4. Gross picnicking needs and estimated deficiencies by socio-economic area.

Socio-Economic Area	Peak Season Demand (Activity Occasions)			Estimated Needs					
				1972		1980		2000	
	1972	1980	2000	Acres	Tables	Acres	Tables	Acres	Tables
South Sioux City	68,572	74,001	91,896	51	367	57	397	70	492
Omaha	2,147,561	2,748,956	5,274,754	1,644	11,505	2,105	14,727	4,041	28,257
Lincoln	944,957	1,162,519	2,090,609	723	5,062	890	6,228	1,602	11,200
Beatrice	149,644	142,247	91,040	115	802	109	762	70	488
Norfolk	243,725	264,313	329,215	186	1,305	203	1,416	252	1,763
Columbus	133,204	150,015	212,354	102	713	115	803	163	1,004
Grand Island	230,522	254,375	335,028	177	1,235	194	1,363	257	1,795
Hastings	158,614	174,824	231,045	122	850	134	937	177	1,238
Kearney	137,888	153,901	212,995	105	738	118	825	163	1,141
McCook	93,096	98,467	91,370	71	498	75	528	70	490
North Platte	166,467	183,448	243,860	128	892	140	983	187	1,307
Ogallala	42,692	43,212	41,700	33	228	33	232	32	223
Valentine	111,654	106,913	72,972	85	598	82	573	56	391
Scottsbluff	220,547	254,224	379,341	169	1,182	195	1,362	290	2,032
Nebraska	4,848,803	5,811,415	9,698,179	3,711	25,975	4,451	31,136	7,430	51,956

Per cent of picnicking occasions on peak days = 60%

Turnover rate = 2

Peak days = 14

Persons per table = 4

Tables per acre = 7

Calculated activity days = (D)

Present Capacity		Estimated Deficiencies					
		1972		1980		2000	
Acres	Tables	Acres	Tables	Acres	Tables	Acres	Tables
61	371	-	-	-	26	9	121
369	2,262	1,275	9,243	1,736	12,465	3,672	25,995
448	1,655	275	3,407	442	4,573	1,154	9,545
127	794	-	8	-	-	-	-
184	1,176	2	129	19	240	68	587
103	484	-	229	12	319	60	520
161	843	-	392	33	520	96	952
83	587	39	263	51	350	94	651
83	712	22	-	35	113	80	429
276	511	-	-	-	17	-	-
141	671	-	221	-	312	46	636
68	248	-	-	-	-	-	-
115	470	-	128	-	103	-	-
150	939	19	243	45	423	140	1,093
2,369	11,723	1,632	14,263	2,373	19,461	5,419	40,529

$$\text{Table needs} = (D) \times \frac{.6}{14 \times 2 \times 4} = (D) \times .6 \div 112 = (D) \times .0053571$$

$$\text{Acre needs} = \frac{\text{Table needs}}{7}$$

Visitors to water-based recreation areas viewed camping more as a complementary activity, since nine per cent of the visitors listed it as such, while only 6.7 per cent designated camping as the primary purpose of their visit.

In addition to resident demand, a considerable amount of non-resident demand for camping is evidenced in the State, particularly along Interstate "80". Of the total interviewed at 15 recreational areas in the on-site survey, 15.5 per cent of the residents camped, as compared to 26.7 per cent of the non-residents interviewed. Techniques for estimating non-resident demand have not yet been sufficiently refined to include in the quantitative demand estimates; but it must be a primary consideration in development of areas along Interstate "80" and other major highways.

Quantitative resident needs were calculated on the basis of facilities required to service peak day demand. These results are shown in Table 8.5. It was estimated that 60 per cent of the camping occasions during the peak season (Memorial Day to Labor Day) occur on the 14 peak days; each camping unit will accommodate an average of four persons per day and that five units can be located on each acre of developed campgrounds. The design load factors obtained from these assumptions were then applied to the peak season resident demand for each socio-economic area for the years 1972, 1980 and 2000 to obtain estimated needs for camping units and acres of developed campgrounds needed in each socio-economic area. Deficiencies listed are based on the difference between estimated needs for the respective target years and the present capacity in each socio-economic area.

Since camping is usually enjoyed on short vacations or weekend trips, campers may travel outside of their socio-economic area for camping excursions. Table 8.3 shows the origin of resident demand, but not necessarily the area where all of the need should be satisfied. Primitive camping grounds will satisfy and are satisfying a significant portion of the total demand for outdoor camping.

Many of the existing camp sites require additional development. Some areas which have been designated for camping presently provide few or no facilities. A significant portion of the present camping occurs on undeveloped sites. In addition to the needs identified for new facilities, emphasis should be given to the development and improvement of facilities on existing major areas, particularly on the reservoir sites. General guidelines in development of camp sites should be as follows:

Mean camp units per acre = 5

Approximate square feet per camp unit = 8,000

Facilities to be included for each camp unit:

(1) level tent space or trailer space,

(2) picnic table,

(3) fireplace or waist-high stove,

(4) parking space for vehicle,

(5) wood storage (optional), and

(6) trash disposal units.

ORRRC data[2] indicated that camping is strongly associated with water activity, e.g. fishing, boating, swimming, water-skiing, etc. Therefore, emphasis should be placed on development of camp sites at areas where water-based activities may be provided. Other data presented in this report show that the greatest participation in camping occurs in the younger age groups with those 12 to 17 years of age having the highest per cent of participation. Some emphasis should be given to development of sites which will be readily available to young people from urban population centers.

Total needs for group camps have not been determined. However, pressure on existing group camps operated by the State is quite heavy. This sytem should be expanded to provide public facilities which will be available to all groups. Group camps will be provided at all major state parks, Niobrara and Chadron State Parks already have such facilities. Organizations such as 4-H Clubs, Boy Scouts, etc. should be encouraged to develop facilities which will meet their specific needs and requirements.

Day camps in which youngsters can be given some camping and outdoor experience without having to be away from home overnight should also be developed near urban centers. Activities built around nature study, crafts and physical activities such as games and hiking could be provided at such camps. Day camps should be designed primarily to serve urban youngsters in lower income groups and those too young to attend regular camps to give them a chance to gain outdoor recreational experiences in semi-natural surroundings.

Most camping facilities in Nebraska are provided by public entities. However, an increasing number of private and commercial campgrounds have been started in recent years, particularly along the Platte River Valley near Interstate "80".

Campgrounds to meet the needs of tourists should be located near enough to major highways to provide convenient access, yet far enough removed to retain a restful environment. Transient campsites should also be located a reasonable distance from commercial facilities.

Camping needs can be grouped as follows:

(1) Developed campgrounds near large urban centers to provide for weekend camping,
(2) Developed campgrounds to service vacation campers as well as weekend campers,

---

[2]Outdoor Recreation Resources Review Commission. 1962. Participation in Outdoor Recreation: Factors Affecting Demand Among American Adults. U.S. Government Printing Office, Washington, D.C. Report No. 19 and 20.

Table 8.5. Gross camping needs and estimated deficiencies by socio-economic area.

Socio-Economic Area	Peak Season Demand (Activity Occasions)			Estimated Needs					
				1972		1980		2000	
	1972	1980	2000	Acres	Units	Acres	Units	Acres	Units
South Sioux City	15,034	19,178	33,585	32	161	41	205	72	360
Omaha	537,159	752,568	1,721,689	1,151	5,755	1,613	8,063	3,689	18,447
Lincoln	232,545	314,471	678,934	498	2,492	674	3,369	1,455	7,274
Beatrice	33,734	36,343	30,164	72	361	78	389	65	323
Norfolk	44,599	56,766	98,033	96	478	122	608	210	1,050
Columbus	29,362	38,472	74,342	63	314	83	412	159	797
Grand Island	51,587	66,443	119,897	110	552	142	712	257	1,284
Hastings	39,844	50,739	90,620	86	428	109	543	194	971
Kearney	33,765	43,801	82,931	72	362	94	469	178	889
McCook	16,406	20,023	24,984	35	176	43	214	54	268
North Platte	46,750	58,900	103,541	100	501	126	631	202	1,009
Ogallala	7,903	9,186	11,960	17	84	20	99	26	128
Valentine	15,585	17,392	16,090	33	167	37	187	34	172
Scottsbluff	61,883	79,236	163,981	133	663	170	849	351	1,757
Nebraska	1,166,196	1,563,519	3,250,751	2,498	12,494	3,352	16,750	6,946	34,729

Per cent of camping occasions on peak days = 60%

Turnover rate = 1

Number of peak days in season = 14

Campers per unit = 4

Units per acre = 5

Calculated activity days = (D)

Present Capacity		Estimated Deficiencies					
		1972		1980		2000	
Acres	Units	Acres	Units	Acres	Units	Acres	Units
19	95	13	66	22	110	53	265
171	855	980	4,900	1,442	7,208	3,518	17,592
86	430	412	2,062	588	2,939	1,369	6,844
12	60	60	301	66	329	53	263
117	585	-	-	5	23	93	465
18	90	45	224	65	322	141	707
15	75	95	477	127	637	242	1,209
11	55	75	373	98	488	183	916
21	105	51	257	73	364	157	784
27	135	8	41	16	79	27	133
20	100	80	401	106	531	182	909
26	105	-	-	-	-	-	23
36	180	-	-	1	7	-	-
54	270	79	393	116	579	297	1,487
633	3,165	1,898	9,495	2,725	13,616	6,315	31,597

$$\text{Number of units} = (D) \times \frac{.6}{14 \times 1 \times 4} = (D) \times .0107143$$

$$\text{Number of developed acres} = \frac{\text{Number of units}}{5}$$

Table 8.6. Gross needs and deficiencies for boating waters by socio-economic area.

Socio-Economic Area	Peak Season Demand (Activity Occasions)			Estimated Needs (Surface Acres)		
	1972	1980	2000	1972 Acres	1980 Acres	2000 Acres
South Sioux City	51,451	61,956	99,148	1,078	1,298	2,077
Omaha	1,554,610	2,099,689	4,568,189	32,572	43,993	95,713
Lincoln	682,911	888,108	1,813,085	14,308	18,608	37,988
Beatrice	113,912	117,358	91,104	2,387	2,459	1,907
Norfolk	162,118	194,454	306,609	3,397	4,074	6,424
Columbus	99,715	123,833	220,360	2,089	2,595	4,617
Grand Island	174,663	213,126	354,109	3,660	4,465	7,419
Hastings	130,475	158,206	262,105	2,734	3,315	5,492
Kearney	111,359	137,330	240,238	2,333	2,877	5,033
McCook	60,888	70,395	80,758	1,276	1,475	1,692
North Platte	147,230	177,494	291,853	3,085	3,719	6,115
Ogallala	28,686	31,659	37,919	601	663	794
Valentine	63,463	66,469	55,947	1,330	1,393	1,172
Scottsbluff	194,856	240,351	459,417	4,083	5,036	9,626
Nebraska	3,576,337	4,580,428	8,880,841	74,933	95,970	186,069

Per cent of boating occasions on peak days = 55%

Peak days in season = 14

Turnover rate = 1.25

Persons per boat = 3

Acres per boat = 2

Calculated activity days = (D)

Present Capacity	Estimated Deficiencies (Surface Acres)		
	1972	1980	2000
Acres	Acres	Acres	Acres
30	1,048	1,268	2,047
1,945	30,627	42,048	93,768
4,513	9,795	14,095	33,475
285	2,102	2,174	1,622
7,450	-	-	-
946	1,143	1,649	3,671
3,083	577	1,382	4,336
102	2,632	3,183	5,360
13,188	-	-	-
12,255	-	-	-
7,416	-	-	-
36,620	-	-	-
14,914	-	-	-
3,898	185	1,138	5,728
106,645	48,109	66,937	150,007

$$\text{Water acres needed} = (D) \times \frac{.55 \times 2}{14 \times 1.25 \times 3} = (D) \times \frac{1.1}{52.5} = (D) \times .020952$$

Table 8.7. Gross water-skiing needs and deficiencies by socio-economic area.

Socio-Economic Area	Peak Season Demand (Activity Occasions) 1972	1980	2000	Estimated Water Needs (Surface Acres) 1972 Acres	1980 Acres	2000 Acres
South Sioux City	10,250	13,169	31,234	366	470	1,116
Omaha	636,422	942,173	2,385,296	22,729	33,649	85,489
Lincoln	266,854	383,006	931,639	9,531	13,679	33,273
Beatrice	21,363	23,633	27,437	763	844	980
Norfolk	32,148	41,348	93,687	1,148	1,477	3,346
Columbus	18,393	23,294	64,914	657	832	2,318
Grand Island	32,940	42,800	106,694	1,176	1,529	3,811
Hastings	24,751	32,199	81,752	884	1,150	2,920
Kearney	21,250	28,027	74,698	759	1,001	2,668
McCook	13,143	16,243	25,629	469	580	915
North Platte	25,183	32,697	87,099	899	1,168	3,111
Ogallala	5,871	6,939	11,720	210	248	419
Valentine	13,912	15,477	16,952	497	553	605
Scottsbluff	33,136	43,728	135,223	1,183	1,562	4,829
Nebraska	1,155,616	1,645,733	4,073,974	41,271	58,742	145,800

Per cent of water-skiing occasions on peak days = 60%

Peak days = 14

Turnover rate = 2

Persons per boat = 3

Acres per boat = 5

Calculated activity days = (D)

Present Capacity (Surface Acres)	Estimated Deficiencies (Surface Acres)		
	1972	1980	2000
Acres	Acres	Acres	Acres
30	336	440	1,086
1,945	20,784	31,704	83,544
4,513	5,018	9,166	28,760
285	478	559	695
7,450	-	-	-
946	-	-	1,372
3,083	-	-	728
102	782	1,048	2,818
13,188	-	-	-
12,255	-	-	-
7,416	-	-	-
36,620	-	-	-
14,914	-	-	-
3,898	-	-	931
106,645	27,398	42,917	119,934

$$\text{Acres water} = (D) \times \frac{.6 \times 5}{14 \times 2 \times 3} = \frac{3.0}{84} \times (D) = (D) \times .0357143$$

(3) Primitive campgrounds,
(4) Transient campgrounds, particularly along Interstate "80" and other major highways. (Treated under State Wayside Areas on pages 212 to 216).
(5) Group camps,
(6) Day camp facilities. Private enterprise can provide for a substantial portion of the camping needs, especially for transient campers.

Boating and Water-skiing

Boating and water-skiing are considered together in this section since facilities developed for boating will normally service water-skiers. Many of the facilities which service boaters on large reservoirs will also meet some of the needs for development of the fishing potential.

Boating and water-skiing are rapidly gaining in popularity and participation in these activities will increase greatly over the next few years. Water-skiing demand on a percentage basis, is estimated to increase faster than demand for any other outdoor recreational activity. An increase in peak season demand of 59 per cent is expected by 1972, 127 per cent by 1980 and 462 per cent by the year 2000.

Twenty-one per cent of visitors interviewed at 12 reservoirs surveyed by the Nebraska Game and Parks Commission during the summer of 1967 indicated that they participated in boating. Eleven per cent of those interviewed listed water-skiing as an activity in which they participated. Thirteen per cent of the total indicated that either boating or water-skiing was the primary purpose of their visit to these reservoirs.

Quantitative estimates of resident needs for water to satisfy boating and water-skiing demands were made using the design load concept. Estimated needs for each socio-economic area are shown in Table 8.6 for boating and Table 8.7 for water-skiing. Figure 8.5 illustrates these needs graphically.

It was estimated that 55 per cent of the boating occasions and 60 per cent of water-skiing occasions occur on the 14 peak demand days for boating and water-skiing. An average of three persons per boat was used for both activities. Standards of two acres per boat for boating and five acres per boat for water-skiing were used to convert these figures into needs for the target years of 1972, 1980 and 2000. Deficiencies listed reflect the difference between calculated needs for each of the target years and the present supply of water in each socio-economic area.

The greatest need for recreational water development is in the eastern part of the State, primarily to satisfy the demand of residents in the Omaha and Lincoln SEA's. The present supply of developed water areas in the Omaha SEA will satisfy less than one-sixteenth of the demand generated in that socio-economic area by 1972.

In addition to the great needs for development of recreational waters in the Omaha and Lincoln SEA's, there should be additional developments in the

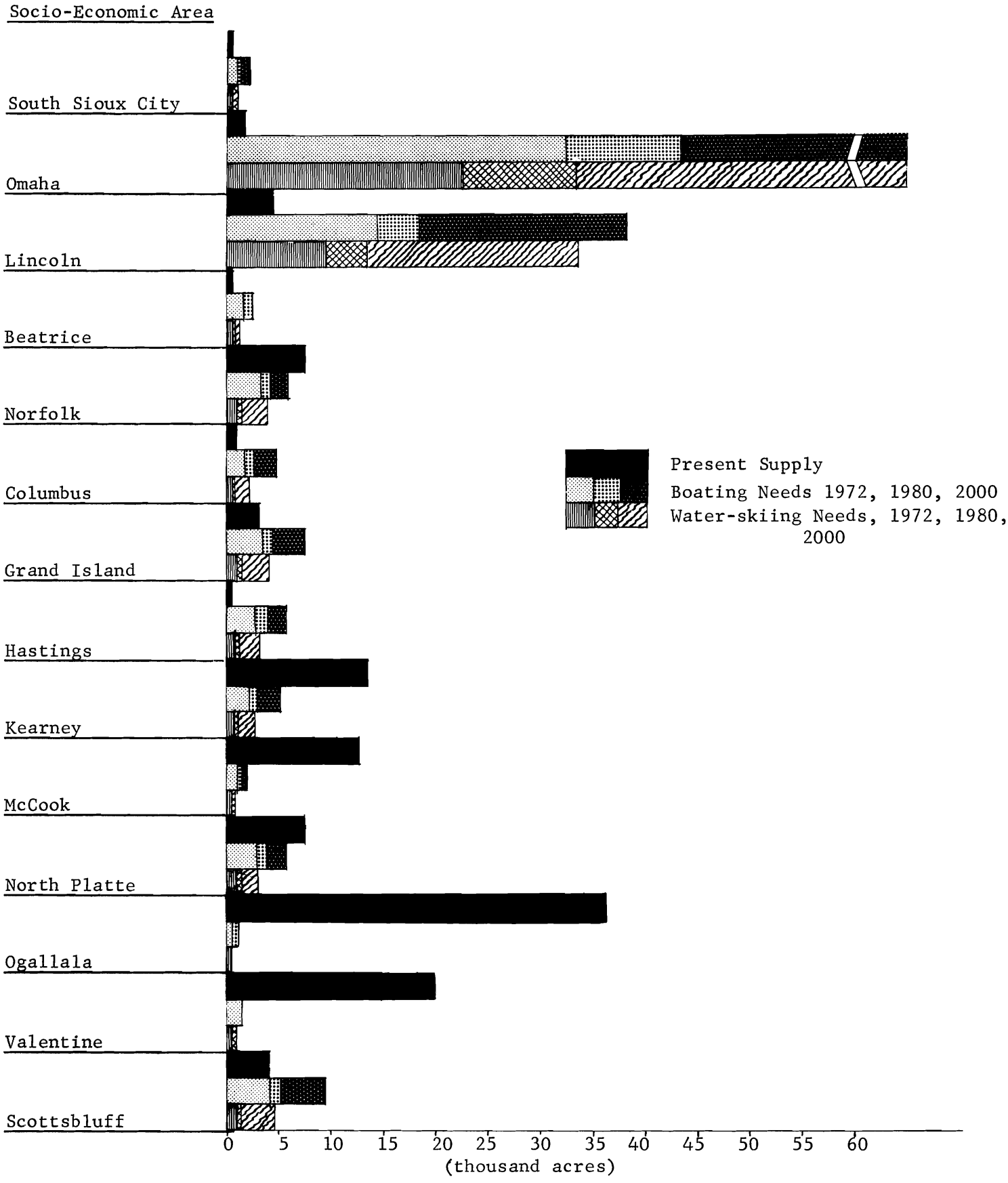


Figure 8.5: Boating and water-skiing needs by socio-economic area for 1972, 1980, 2000 compared to present supply.

South Sioux City, Beatrice, Columbus, Grand Island, Hastings and Scottsbluff SEA's in order to satisfy the resident demand evidenced in those areas.

Some of the deficiencies in water-based recreational developments in the areas recognized above can be met in those socio-economic areas where the present supply exceeds the demand of area residents. However, much of the weekend and day-use demand must be satisfied near the origin of demand.

Substantial out-of-state demand for water-based recreational activities can be expected, especially along Interstate "80". However, estimation of the extent of this demand in quantitative terms is not possible at this time. Therefore, demand potential of nonresidents must be considered primarily on the basis of individual site developments.

Reservoirs built for flood control purposes and to furnish water supplies for municipal, industrial, and agricultural uses can also meet recreation needs when they are properly developed and managed. The tremendous interest and participation in these and other water-oriented activities make it imperative that outdoor recreation be given full consideration in any program involving the development of water resources. A need for development of additional waters which can satisfy the desire for boating and water-skiing is particularly evident in eastern Nebraska. Completion of the multi-purpose reservoirs and small watershed programs identified under Potential Supply of Outdoor Recreation Resources should satisfy most of the needs for boating waters in eastern Nebraska. In addition to those identified, a much discussed reservoir on the Platte River between Omaha and Lincoln would be located in a very strategic place for recreational purposes. The impact of such a reservoir on outdoor recreation would be highly significant. It would be located in the midst of our metropolitan complexes where the demand for all water-oriented activities is very high.

Immediate development needs at existing reservoirs include approximately 20 boat ramps with adequate parking spaces provided for each site. These needs have been identified by responsible management personnel and were estimated to permit desirable use of existing water areas.

In addition to development of existing reservoirs for boating, fishing and water-skiing, a minimum of eight access sites including ramps and boat access parking spaces should be provided along the Missouri River as indicated in Figure 7.34. These sites should be developed with limited camping facilities and located in such a manner that overnight and weekend boating excursions on the river would be facilitated.

There are many potential sites for development of additional water-based recreational areas throughout the State which can be utilized to meet the needs of Nebraskans. Continued cooperative action on the part of federal, state and local governmental units will be necessary in order to adequately provide for these recreational needs.

Outdoor Swimming

Needs for outdoor swimming facilities have been broken into two separate categories, outdoor swimming pools and swimming beaches. It was assumed that about 15 per cent of the total demand for swimming will be satisfied by swimming beaches and the remainder by swimming pools.

Overall demand for outdoor swimming in Nebraska is high and will increase in popularity in the future. On a peak season basis, outdoor swimming is the second most popular activity, trailing only driving for pleasure. Demand for this activity in 1967 was estimated at over six million activity days. This demand is expected to more than triple by the year 2000 with over 20 million activity days per season.

Needs for additional municipal swimming pools were determined from standards based on population and population distribution. A summary of the present supply of existing municipal swimming pools is presented in Table 8.8 along with the calculated minimum needs for swimming pools in each socio-economic area. The standards used were:

(1) Metropolitan -- one municipal pool of about 7,500 sq. ft., or its equivalent for each 10,000 population.

(2) Cities of the 1st class -- 7,500 sq. ft. for each 10,000 population[3] or major fraction.

(3) Cities of the 2nd class -- one pool.

(4) Village needs were determined on the basis of distribution with one pool per village in each area which does not have another swimming pool within ten miles.

The most glaring need for swimming pools is for a better distribution of pools, especially within the larger cities and between villages in the more sparsely populated areas. A good distribution of swimming pools is especially important because of the high proportion of youngsters who participate. The greatest rate of participation is by teenagers in the 12 to 17 year age group with 85 per cent of the boys and 27 per cent of the girls in this age group participating in the North Central Census Region.

With the high participation by younger age groups and the necessary adult supervision for children, it is important that swimming opportunities be made available at the community level. In most cases, pools supplied by villages and smaller towns also service a relatively large farm population, as well as servicing other nearby villages.

Another need which must not be overlooked and will become increasingly important in the near future is the renovation or replacement of swimming pools in cities and villages where present pools are becoming obsolete. No attempt has been made to quantitatively identify the number of pools in this condition, but where the need exists, it must be considered in the implementation of this plan.

The results of the on-site user survey conducted by the Nebraska Game and Parks Commission during the summer of 1967 showed that outdoor swimming is a popular activity at non-urban recreation areas. Over 37 per cent of those

---

[3]Based on serving three per cent of the population at any given time with 25 sq. ft. of water surface allotted for each user.

Table 8.8. Outdoor municipal swimming pool needs by socio-economic area.

	Number Of Towns In Each Class	Existing Municipal Pools	Needs Based On Standards	Number Of Towns With Insufficient Pools	Per Cent Of Municipalities With Insufficient Pools	Minimum* Additional Municipal Pools Needed
South Sioux City SEA						
1st Class	1	0	1	1	100	1
2nd Class	2	1	2	1	50	1
Villages	17	1	3	2	12	2
Total	20	2	6	4	20	4
Omaha SEA						
Municipal	1	9	34	1	100	25
1st Class	4	4	7	2	50	4
2nd Class	12	7	12	5	42	5
Villages	41	3	5	2	5	2
Total	58	23	58	10	17	36
Lincoln SEA						
Municipal	1	8	15	1	100	7
1st Class	2	2	2	0	0	0
2nd Class	9	6	9	3	33	3
Villages	44	1	3	2	5	2
Total	56	17	29	6	11	12
Beatrice SEA						
1st Class	3	3	3	0	0	0
2nd Class	4	4	4	0	0	0
Villages	40	1	2	1	3	1
Total	47	8	9	1	2	1
Norfolk SEA						
1st Class	1	0	2	1	100	2
2nd Class	12	12	12	0	0	0
Villages	36	8	10	2	6	2
Total	49	20	24	3	6	4
Columbus SEA						
1st Class	1	1	2	1	100	1
2nd Class	4	4	4	0	0	0
Villages	26	2	2	0	0	0
Total	31	7	8	1	3	1
Grand Island SEA						
1st Class	1	1	3	1	100	2
2nd Class	8	7	8	1	12	1
Villages	34	3	4	1	3	1
Total	43	11	15	3	7	4

Table 8.8. (continued)

	Number Of Towns In Each Class	Existing Municipal Pools	Needs Based On Standards	Number Of Towns With Insufficient Pools	Per Cent Of Municipalities With Insufficient Pools	Minimum* Additional Municipal Pools Needed
Hastings SEA						
1st Class	1	0	2	1	100	2
2nd Class	5	5	5	0	0	0
Villages	31	4	5	1	3	1
Total	37	9	12	2	5	3
Kearney SEA						
1st Class	2	2	3	1	50	1
2nd Class	5	4	5	1	20	1
Villages	25	4	6	2	8	2
Total	32	10	14	4	12	4
McCook SEA						
1st Class	1	1	1	0	0	0
2nd Class	5	4	5	1	20	1
Villages	25	7	10	3	12	3
Total	31	12	16	4	13	4
North Platte SEA						
1st Class	2	2	3	1	50	1
2nd Class	3	3	3	0	0	0
Villages	22	2	9	7	32	7
Total	27	7	15	8	30	8
Ogallala SEA						
2nd Class	4	4	4	0	0	0
Villages	7	3	4	1	14	1
Total	11	7	8	1	9	1
Valentine SEA						
2nd Class	8	7	8	1	12	1
Villages	37	1	14	13	35	13
Total	45	8	22	14	31	14
Scottsbluff SEA						
1st Class	5	5	6	1	20	1
2nd Class	5	5	5	0	0	0
Villages	19	0	4	4	21	4
Total	29	10	15	5	17	5

Table 8.8. (continued)

	Number Of Towns In Each Class	Existing Municipal Pools	Needs Based On Standards	Number Of Towns With Insufficient Pools	Per Cent Of Municipalities With Insufficient Pools	Minimum* Additional Municipal Pools Needed
Nebraska						
Metropolitan	2	17	49	2	100	32
1st Class	24	21	35	10	42	15
2nd Class	86	73	86	13	15	13
Villages	404	40	81	41	10	41
Total	516	151	251	66	13	101

*Pool needs for metropolitan and first class areas are based upon 7,500 square feet pool or the equivalent, i.e. two 3,750 square feet pools, etc.

interviewed at three state parks participated in swimming; 22.5 per cent listed swimming as the primary purpose for their visit to the park. Each of these areas provides a swimming pool.

Over 23 per cent of interviewees at 12 reservoirs participated in outdoor swimming; over 12 per cent of the visitors listed this activity as the primary reason of their visit. High participation in swimming at reservoirs occurred in spite of the fact that very little development of swimming facilities has been made on these areas. Participation would undoubtedly be even higher if these areas were more fully developed. Change and shower facilities, clean beaches, and roped swimming areas are the primary developments needed to increase the enjoyment, availability and safety of outdoor swimming at water-based recreation areas.

These high participation rates in swimming indicate that facilities for swimming should be provided at non-urban recreation areas oriented to high density use, either by providing pools or developed beaches wherever possible.

Needs for non-urban outdoor swimming beaches have been calculated on a basis of design load capacity and are shown in Table 8.9. These needs were calculated under the following assumptions:

(1) 15 per cent of peak season swimming occurs at beaches,

(2) 60 per cent of these occasions occur on 12 peak days,

(3) the turnover rate is three persons per day,

(4) a minimum of 150 square feet of water is needed per swimmer, and

(5) 287 swimmers can be accommodated each day on an acre of swimming water.

The acres of water shown under present capacity are in various stages of development, with the majority having very little in the way of developed swimming facilities. Thus, the development needs in Table 8.9 are somewhat understated. Even so, this table does point out the primary areas of need for development of non-urban swimming beaches. Over three-fourths of the needs are in the Omaha and Lincoln SEA's.

There are a variety of needs for outdoor swimming facilities in Nebraska. Additional municipal swimming pools are needed, mainly to service those people who presently do not have pools in their vicinity. Replacement of existing municipal swimming pools will be needed, mainly to service those people who presently do not have pools in their vicinity. Replacement of existing municipal swimming pools will be needed in the future since some pools are over 40 years old and are deteriorating. Non-urban recreational areas must provide adequately developed swimming facilities to satisfy the demand of visitors to these areas. Pools should be available on highly used areas such as state parks. Swimming beaches and facilities at major water-based recreational areas which are presently being used for swimming should be further developed. Additional swimming beaches are needed, particularly in the Omaha and Lincoln SEA's.

Table 8.9. Gross needs for swimming beaches by socio-economic area in acres of water.

Socio-Economic Area	Peak Season Demand (Activity Occasions) 1972	1980	2000	Estimated Needs 1972 Acres	1980 Acres	2000 Acres
South Sioux City	126,287	148,967	225,608	1	1	2
Omaha	2,541,243	4,829,199	10,540,835	31	42	92
Lincoln	1,564,673	2,052,253	4,195,747	14	18	37
Beatrice	267,205	273,850	207,306	2	2	2
Norfolk	416,634	492,174	741,170	4	4	6
Columbus	232,973	284,030	478,965	2	2	4
Grand Island	411,953	493,400	778,742	4	4	6
Hastings	299,113	358,791	572,890	3	3	5
Kearney	258,127	313,671	525,102	2	3	5
McCook	166,303	189,935	209,245	1	2	2
North Platte	306,121	366,922	588,474	3	3	5
Ogallala	74,897	81,835	94,113	1	1	1
Valentine	185,627	191,045	152,933	2	2	2
Scottsbluff	403,739	497,163	905,422	4	4	8
Nebraska	8,254,895	10,573,235	20,216,552	74	91	177

Per cent of swimming occasions at beaches = 15%

Per cent of swimming occasions on peak days at beaches = 60%

Number of peak days in season = 12

Turnover rate = 3

Square feet per swimmer = 150

Swimmers per acre = 287

Calculated activity days = (D)

Present Capacity	Estimated Deficiencies		
	1972	1980	2000
Acres	Acres	Acres	Acres
1	-	-	1
13	18	29	79
8	6	10	29
0	2	2	2
2	2	2	4
15	-	-	-
5	-	-	1
0	3	3	5
13	-	-	-
9	-	-	-
7	-	-	-
73	-	-	-
7	-	-	-
29	-	-	-
182	31	46	121

$$\text{Needs in acres} = (D) \times \frac{.15 \times .6}{12 \times 3 \times 287} = \frac{.09}{10{,}332} \times (D) = (D) \times .000008711$$

Hunting

More than 97 per cent of the land area in Nebraska is under private ownership and classified as farms. These private lands support the hunting opportunity in Nebraska.

Needs are necessarily related to the pattern of land ownership in the State.

The problems of supplying public hunting revolve about two basic issues: (1) production of a sufficient quantity and variety of game to meet future demand, and (2) access to the game for public hunting.

Production of Game

Production of sufficient quantities of game to meet the future demand will be largely dependent upon the management of private lands, particularly for upland game and big game. As demand increases and pressures become greater, management will have to be more intensive to supply the quantity of game which will be required. Private lands will continue to offer the greatest potential for production, and it is these lands which will make or break hunting as a traditional outdoor recreation activity in Nebraska. Intensive management of widely scattered public lands will not be sufficient.

In recent federal agricultural programs, wildlife has been receiving increasing recognition as a product of the land. One of the major benefits of the recent soil-bank program was the provision for critical upland game bird cover in agricultural areas. The Agricultural Stabilization and Conservation Service currently provides incentive payments for development of certain types of wildlife areas. Since wildlife is truly a public resource, both traditionally and by law, it is imperative that these practices continue to be provided in any incentive program for conservation practices on private lands.

It is equally imperative that necessary elements of farm game habitat are considered at federal and local levels in development of public programs for land conversion. These programs have the potential of affecting vast acreages over large areas at a given time. Therefore, the potential impact on game production is highly significant. Depending on the framework of the program and initial decisions, the impact may be beneficial to wildlife species. Since wildlife is a product of the land and a public resource, every effort should be made to insure benefits of land conversion projects to wildlife.

As indicated under potential, use of exotic game birds which have desirable characteristics is one method that has been used to increase the supply of upland game hunting. This tool is particularly important in development of ranges which are deficient in game birds.

The outstanding example of a game-bird deficient range in Nebraska is the short-grass plains area of the panhandle. The agricultural lands of this region produce good populations of ring-necked pheasants. However, the grassland areas which have not been converted to croplands support only mourning doves and a highly limited population of sharp-tailed grouse. A particular effort is being

made to find an exotic species which can be adapted to short-grass habitat and which has the potential for surviving and producing a huntable population in the environment of western Nebraska. Success of such a project would have the potential of bringing into production vast acreages of range lands currently non-productive for upland game birds.

Access to Game

Access for public hunting is controlled by the private landowner. In relation to game range and the patterns of hunting pressure in Nebraska, the de ity of hunters per unit of land is not excessive at the present time. However, problems of access, involving landholder-sportsman relationships, are prevalent in eastern Nebraska near large metropolitan centers.

Landholder-sportsman problems have been recognized nationally for many years. Several programs have been developed to acquaint sportsmen with landholder problems, and the necessity for good sportsmanship and conduct while hunting on private lands. The "Hunt America" program of the Izaak Walton League of America is an excellent example of a functional program on a national and state level. It is highly desirable that existing programs be continued and that new active programs be developed which are oriented to both action and education. Organized sportsmen should assume the leadership in stimulating and developing programs in this area.

With the pattern of land ownership in Nebraska, it is obvious that few significant public hunting areas, particularly for upland game and waterfowl, are available. The problem is most acute with waterfowl since the vast majority of waterfowl hunting sites are leased to groups or individuals. The problem is most critical along the Platte Valley and in eastern Nebraska.

Public waterfowl management units are critically needed in eastern Nebraska. It is virtually impossible to forecast the lands required to meet demand. Participation will be a direct function of opportunity. The State does not have the financial capacity to provide sufficient lands to satisfy all the needs for waterfowl hunting. However, the opportunity can be increased significantly. At least three waterfowl management units should be provided in the eastern and east-central portion of the State, where they will be readily available to populations of metropolitan areas. These areas should be a minimum of 2,000 acres in size, preferably much larger, and managed intensively to provide maximum hunting opportunity. In most cases, such waterfowl management units will also provide upland game hunting.

In addition to waterfowl management units which require intensive development, efforts should be made to obtain easements along streams and marshes which have significant waterfowl hunting potential. In areas where access lands can be purchased with river frontage, fee title should be obtained. School lands may offer considerable potential in this area.

Development of public waterfowl management units, easements, and purchase of river frontage in fee title offers considerable potential for other outdoor recreation activities in addition to hunting. These areas may also be used for nature study, outdoor photography, hiking, fishing, and other outdoor activities.

Hunting of mourning doves in Nebraska is prohibited by legislation. Exceptionally high populations of this species occur in the State and its range extends into all geographic regions and virtually every habitat type. If legislation should be enacted which allows the Nebraska Game and Parks Commission to declare open mourning dove seasons, the opportunity for additional hunting throughout the State can be increased significantly. With existing management practices and the status of mourning dove populations this species can add materially to hunting opportunity without jeopardizing the status of the resource.

Fishing

Total available fishing capacity, including both public and private waters, for each socio-economic area of the State were shown in Chapter VII. Based on these data, needs are defined in Table 8.10. Total needs in fisherman days by socio-economic area are over three million. It is recognized that a portion of these needs are presently being met in those western areas where an excess capacity is indicated; however, for planning purposes the needs by socio-economic area must be accepted as they represent a large contiguous portion of the State where opportunity is not provided within the time-distance concepts expressed previously.

If the total present needs of over three million fisherman days, as indicated in Table 8.10, are related to capacities as defined in Chapter VII, approximately 75 to 120 thousand acres of additional fishing waters are needed to meet existing demand. By 2000 approximately 200 to 265 thousand acres will be needed.

The 1967 on-site survey conducted by the Nebraska Game and Parks Commission indicated that fishing was the most important activity participated in at 12 major reservoirs in Nebraska. Twenty-nine per cent of the interviewees indicated fishing was the primary activity; 8.4 per cent listed fishing as a secondary activity. Excluding sightseeing as an active use of reservoir areas, it is interesting to note that the number of people who indicated fishing as the primary or secondary activity was almost twice the number listing the second most common active use of the areas, i.e., swimming. The number listing fishing as a primary activity was almost three times as great as those listing swimming.

Opportunities for Supplying Needs

Creation of New Waters. The most significant opportunity to meet needs for additional fishing water is construction of multiple purpose reservoirs for which full consideration is given to recreational development and public access. Participation in these projects for enhancement of fishing opportunity should be related to the needs as defined by socio-economic area in Table 8.10.

The Kearney, McCook, Ogallala and Valentine SEA's have sufficient fishing capacity at present to satisfy demand beyond the year 2000. Generally, the southwestern and western socio-economic areas have sufficient fishing capacity at present to satisfy resident demand beyond the year 2000.

In central Nebraska, the proposed Mid-State Reclamation Project with 24,000 acres of water could increase capacity by 600,000 fisherman days, thus satisfying most of the deficiencies shown for the Grand Island, Hastings, and North Platte SEA's by the year 2000.

Table 8.10. Gross needs for additional fishing capacity in fisherman days by socio-economic areas in Nebraska (Demand, present capacity and deficiencies expressed as activity occasions).

	Demand				Present	Deficiencies			
	1967	1972	1980	2000	Capacity	1967	1972	1980	2000
South Sioux City	103,290	104,753	111,522	131,317	51,140	52,150	53,613	60,382	80,177
Omaha	1,643,278	1,861,444	2,281,127	3,834,620	104,985	1,538,293	1,756,459	2,176,142	3,729,635
Lincoln	797,216	868,083	1,016,123	1,567,132	236,065	561,151	632,018	780,058	1,331,067
Beatrice	242,343	225,569	209,455	125,892	94,325	148,018	131,244	115,130	31,567
Norfolk	351,188	355,019	378,562	443,381	282,325	68,863	72,694	96,237	161,056
Columbus	192,175	198,432	219,154	289,656	66,735	125,440	131,697	152,419	222,921
Grand Island	339,730	347,429	376,535	464,753	127,335	212,395	220,094	249,200	337,418
Hastings	242,239	247,511	268,248	333,756	51,465	190,594	196,046	216,783	282,291
Kearney	207,336	213,972	234,973	306,630	377,360	-	-	-	-
McCook	143,744	138,284	143,052	123,445	289,790	-	-	-	-
North Platte	253,180	258,745	280,166	349,790	278,855	-	-	1,311	70,935
Ogallala	65,512	63,021	62,367	56,092	1,090,070	-	-	-	-
Valentine	169,779	92,586	147,848	93,128	1,568,025	-	-	-	-
Scottsbluff	328,735	342,020	383,029	541,995	202,405	126,330	139,615	180,624	339,590
Totals	5,079,745	5,316,868	6,112,161	8,661,587	4,821,060	3,023,234	3,333,480	4,028,286	6,586,657

Potential reservoir projects in other SEA's would also help to alleviate present and future deficiencies. The Omaha SEA could realize approximately 140,000 additional fisherman days from the eight reservoirs in the Papillion Creek and Tributaries Project planned by the Corps of Engineers. The 64,000 acre Lower Platte Project may provide up to 1.6 million or more fisherman days at total capacity. Completion of the planned Beaver Crossing Reservoir in Seward and York Counties would add an additional 195,325 fisherman days to the Lincoln SEA. Angus Reservoir located in Clay and Adams Counties would add 126,000 fisherman days to the Hastings SEA which, at present, is extremely lacking in good fishing opportunity. The three major Bureau of Reclamation reservoirs planned for the Elkhorn River Basin would supply over 600,000 fisherman days to the Norfolk, South Sioux City and Omaha SEA's.

The small watershed projects are located in an area of primary need. Because of their location and susceptibility to fisheries management, these sites offer an excellent opportunity to provide well distributed fishing waters, as well as other water-oriented activities, close to the populations.

Responsibility for public acquisition and development of those sites having substantial potential must rest primarily with political subdivisions. However, little interest has been shown by local governments in providing non-urban recreational services. Nor can the State bear the full development and maintenance costs of so many small areas that provide primarily highly local services. A state grant-in-aid program to political subdivisions for recreational development of reservoirs developed under the P.L. 566 program could be initiated as an incentive to take advantage of the opportunities offered under this program.

Most of the sites developed under the Small Watershed Program will remain under private ownership and control. For those having fisheries potential, technical assistance and access easements may provide a tool to increase the opportunity for public fishing.

Improved Management of Existing Waters. The reservoirs of southwestern Nebraska and natural lakes of northcentral Nebraska are largely underharvested due primarily to remoteness from population centers. Greater utilization of the sport fish population in these areas would be highly desirable. Completion of Interstate "80" has encouraged increased utilization of the southwest reservoirs. However, no super highways are planned for northcentral Nebraska where better access roads are needed to direct anglers to those areas having significant potential.

Smaller reservoirs, farm ponds and natural lakes, particularly those under private ownership, offer the greatest opportunity for significant increases in the quality and quantity of sport fishing through improved management techniques. Increased production and utilization of these waters for sport fishing can contribute significantly to fishing opportunities in some areas, particularly rural areas. This will require extension services for private waters since the State cannot physically carry out all the needed management efforts.

Water pollution is an ever increasing problem. Pollutants may result from agricultural practices or industrial, municipal, or other wastes. Clean water is necessary for all forms of water-oriented recreation including the production of sport fishes.

Pollution from insecticides, particularly chlorinated hydrocarbons, has been recognized at both the state and national levels. It is fully recognized that these programs have made significant contributions in production of food and fiber and abatement of insect-borne diseases. However, it is becoming increasingly important that total long term effects be considered and that control programs be developed which do not contribute to long-term environmental pollution. The need for extreme caution and continuing research in this area is evident.

Improved watershed management is needed in many areas, not only to realize the maximum fishing potential on streams and reservoirs but to adequately manage water resources for all uses. Intensive watershed management and stream improvements will be necessary to substantially increase production of the cold water fishery in western Nebraska and to save hatchery dollars.

The fishery potential of both large and small reservoirs will be largely dependent upon adequate watershed control and the quality of water produced on watersheds. It is imperative that the present intensive programs for watershed management be continued and expanded.

Increasing Public Access. A majority of fishable waters in eastern Nebraska are under private ownership. Because of poor access, many of these areas are not available to the general public and the potential for sport fishing is not realized. As with waterfowl hunting, access easements or purchase may be the only method available to open these waters for additional public use. Particular emphasis should be placed on access to major stream courses in eastern Nebraska. In many cases, purchase in fee title of strategically located waters will be the only method to provide for public use. In these instances, strategically located sites should be acquired and made available for public fishing or other water-oriented activities.

Additional Needs for Fish Hatchery Production

With the increased tempo of lake renovations under existing fisheries programs and the number of water development projects in progress or planning stages, it has become obvious that the demand for hatchery reared fish for management purposes will soon surpass the capacity of existing hatchery facilities.

Nebraska presently maintains five hatchery installations in the State. Rearing facilities for warmwater fish total approximately 85 acres, with about 16 acres of ponds and raceways used in the production of coldwater fish.

Warmwater production is geared to the production of fingerling fish which are used to stock new public lakes, renovated lakes, lakes in which problem species have been reduced by seining, maintenance stocking of heavily used lakes and private waters.

Coldwater production is geared primarily to the production of catchable size fish used in the stocking of a public pay lake, with a limited production of fingerling fish for use in maintenance stocking of trout lakes and trout streams.

Warmwater Production and Stocking

Hatchery production records for the four-year period 1963 through 1966 shows an average production of 1,930,000 fingerling fish. Under the present stocking program an average of 700 warmwater fingerling per acre are stocked in all new and renovated waters. This gives an average annual stocking capacity of about 2,800 acres.

Stocking demand for this four-year period, including the acreage of new lakes, renovated lakes, and lakes on maintenance stocking, averaged 2,900 acres with new lakes making up 900 acres. This average acreage was exceeded in two of the four years. The extra demand in these years was met by trading excess production of northern pike and walleye fry to other states for needed fish, plus cooperative stocking and trade agreements with the Federal Hatchery Service.

If past trends continue, present hatchery capacity would be adequate only so long as present trade and cooperative stocking capacity could be maintained. However, it appears that these trends will not continue in the area of new lake development. Water resource development projects for purposes of flood control, irrigation and power production, which are now under consideration or being constructed total about 200,000 acres. Present average stocking rates of 700 fingerling fish per acre for new waters represents a future demand of 140 million fish.

Present base demand needed for stocking renovated waters, manipulated waters, private waters and maintenance stocking of heavily used waters, will, if average conditions prevail, require an annual stocking of 1.4 million fish. This leaves an annual excess production, at existing production rates, of 500 thousand fish for stocking new waters. It is predicted that this reserve capacity plus capacity from trading and cooperative stocking will not meet the potential demand represented by new reservoir developments.

Coldwater Production and Stocking

Hatchery production records for the four-year period 1963 through 1966 show an average annual production of 6,000 fingerling trout and 170,000 catchable trout. This represents maximum production of catchable trout with present facilities.

Present production capacity of catchable trout is adequate; however, demand at the Two Rivers Trout Lake shows a seven per cent annual increase in the period 1964 through 1966. Projecting this rate of increase into the future indicates additional production capacity for catchable trout will be needed within the next five years. The development of additional put and take trout facilities which are in the planning stage will also increase the need for additional capacity for production of coldwater species.

Table 8.11. Gross needs and deficiencies for nature trails by socio-economic area.

Socio-Economic Area	Peak Season Demand (Activity Occasions) 1972	1980	2000	Gross Needs 1972 Miles	1980 Miles	2000 Miles	Present Supply (In Miles)	Deficiencies 1972 Miles	1980 Miles	2000 Miles
South Sioux City	10,468	11,658	15,780	1	2	2	0	1	2	2
Omaha	408,146	533,342	1,061,507	54	71	142	6	48	65	136
Lincoln	175,993	221,833	471,396	24	30	56	2	22	28	54
Beatrice	21,519	22,512	21,823	3	3	3	0	3	3	3
Norfolk	35,127	39,207	52,727	5	5	7	0	5	5	7
Columbus	19,768	22,810	34,603	3	3	5	0	3	3	5
Grand Island	34,670	39,269	55,648	5	5	7	1	4	4	6
Hastings	24,871	28,151	40,209	3	4	5	0	3	4	5
Kearney	21,474	24,636	36,916	3	3	5	0	3	3	5
McCook	13,710	14,837	14,663	2	2	2	0	2	2	2
North Platte	26,056	29,425	42,188	3	4	6	0	3	4	6
Ogallala	6,249	6,466	6,665	1	1	1	0	1	1	1
Valentine	15,533	15,190	10,950	2	2	1	0	2	2	1
Scottsbluff	34,432	40,140	65,373	5	5	9	1	4	4	8
Total	849,009	1,048,787	1,869,453	114	140	251	10	104	130	241

Per cent demand on peak days = 30%
Peak days in season = 14
Turnover rate = 1
Persons per group = 4
Groups per day = 40 (Based on 10 hour day and 1 group per 15 minutes)
Calculated activity days = (D)

Miles of trails needed = (D) $\frac{.3}{14 \times 1 \times 4 \times 40}$ = (D) $\frac{.3}{2240}$ = .000133929 (D)

Hiking, Nature Study and Walking for Pleasure

Walking for pleasure is estimated to be the second most popular outdoor recreational activity of Nebraskans, based upon participation rates developed by ORRRC in 1962. Although projections show that this activity will slip to third in popularity by the year 2000, participation will more than double during this period. Even though this activity is listed as highly popular, there is little need for further development of facilities to specifically accommodate this demand since walking can take place almost anywhere by utilizing existing streets, parks, etc. Urban subdivision developments may provide additional facilities by constructing walkways within residential areas and between these areas and nearby commercial facilities, such as shopping centers or recreation areas.

Hiking demand is expected to increase at a more rapid pace than walking for pleasure and nature walks, reflecting the apparent trend away from the more passive pursuits toward the more active and strenuous activities. Hiking occasions are expected to triple from the present 370,000 to about 1.3 million occasions by 2000, with a 43 per cent increase occurring during the next five years.

Demand for nature walks will also increase, but at a substantially slower pace than the increase in hiking demand with a 16 per cent increase predicted for the next five years, 41 per cent by 1980, and a 128 per cent increase by the year 2000.

Results from visitor surveys at 12 reservoirs to determine use patterns show that over 15 per cent of the visitors participated in hiking; two per cent listed this activity as their primary reason for visiting the area while 13 per cent indicated that hiking had been a secondary activity in which they had also participated. Nature walks were listed by less than two per cent of the visitors as an activity in which they participated.

Needs for development of nature trails were estimated for each socio-economic area by using peak season demand for this activity and the design load concept. Estimated needs are shown in Table 8.11. The primary areas of need are in the eastern part of the State in the Omaha and Lincoln SEA's. Since only fully developed and designated nature trails are listed under the present supply column, overall needs may be somewhat overstated, because many additional areas suitable for the pursuit of nature study presently exist in the State although the primary function of these areas are not designated as nature trails. Further development of existing areas may be more feasible than trying to develop new areas for nature study. Participation in a network of trails as outlined in the Lewis and Clark Trail System would satisfy a substantial portion of the demand for nature walk facilities in the eastern part of the State, where the majority of the needs for this activity originate.

Full advantage should be taken in development of interpretive facilities of flora and fauna at major wildlife management areas, or other areas of significant natural phenomenon. Of particular significance in this area is development of an overlook at Plattsmouth Waterfowl Management Area to view the large concentrations of geese. Interpretation of life history, migrations and management should be provided. The spectacular spring flights of sandhill cranes and their

concentrations in the Platte Valley offer a unique experience in observation of wildlife. Interpretive facilities should be provided at key points along Interstate "80", especially at road ranches and other wayside areas near concentration sites. These examples are illustrative and do not exhaust the need or possibilities. Similar facilities can be developed at many other sites.

Natural areas should be provided which can be used for outdoor photography and study of the flora and fauna. Emphasis should be placed on acquisition of these areas in or near urban centers. However, sufficient areas should be acquired to illustrate native flora and fauna in each of the major ecological types.

Hiking needs have also been estimated through the use of the design load concept, Table 8.12. Need estimates in this category are also complicated by the fact that only areas specifically designated as hiking trails were used in the supply column, whereas many additional non-designated areas suitable for hiking trips are presently available, particularly in the western half of Nebraska.

There is a great potential for hiking trails in Nebraska along shorelines of lakes and reservoirs, municipal and state parks, forest lands, near historic areas and along major rivers, particularly the Niobrara, Platte and Missouri Rivers. Utility rights-of-way, levees, flood dikes, etc. provide many opportunities for walking and hiking areas. Many of the needs for hiking trails originating in eastern Nebraska could be satisfied by development of hiking and horseback riding trails along the route of the Lewis and Clark expenditionary route which roughly parallels the Missouri River in Nebraska.

Development of hiking trails should take into consideration the needs of youth groups, such as the Boy Scouts, so that sufficient areas are available to meet the needs of this important segment of the population.

Horseback Riding

Resident demand for horseback riding is estimated to be over 1.2 million activity days per year. Demand for this activity among residents is expected to increase, but only at about the rate which population increases. Much of this demand originates from Nebraska's youth and most of this demand is presently being satisfied through private sources, particularly in the rural areas of the State.

The greatest need for developments to satisfy resident needs for horseback riding originates in the more heavily populated areas in eastern Nebraska. Full participation in the Lewis and Clark Trail System would considerably aid the satisfaction of these needs. Additional horseback riding facilities on or near major recreational areas should be developed through action by public agencies and commercial enterprise.

Preliminary results from a mail survey of outdoor tourists conducted by the Nebraska Game and Parks Commission during the summer of 1967 shows a substantial desire by tourists to have the opportunity to go horseback riding during their visit to the State. In response to the question, "What additional commercial facilities would you have liked to have been provided close to the recreational

Table 8.12. Gross needs and deficiencies for hiking trails by socio-economic areas (miles).

	Demand (Activity Occasions)			Need			Present Supply	Deficiency		
	1972	1980	2000	1972 Miles	1980 Miles	2000 Miles	Miles	1972 Miles	1980 Miles	2000 Miles
South Sioux City	9,119	11,142	17,739	6	7	12	0	6	7	12
Omaha	102,347	137,009	278,810	69	92	187	0	69	92	187
Lincoln	50,412	64,482	118,717	34	43	79	0	34	43	79
Beatrice	18,254	19,150	14,858	12	13	10	0	12	13	10
Norfolk	27,133	33,439	53,069	18	22	36	2	16	20	34
Columbus	15,398	19,298	33,495	10	13	22	0	10	13	22
Grand Island	28,220	34,801	56,861	19	23	38	0	19	23	38
Hastings	21,976	27,129	45,135	15	18	30	0	15	18	30
Kearney	18,826	23,552	41,103	13	16	28	0	13	16	28
McCook	11,753	13,766	15,557	8	9	10	0	8	9	10
North Platte	21,201	26,208	44,036	14	18	29	0	14	18	29
Ogallala	5,104	5,725	6,801	3	4	5	0	3	4	5
Valentine	11,854	12,508	10,142	8	8	7	2	6	6	5
Scottsbluff	27,750	34,429	66,434	19	23	44	0	19	23	44
Nebraska	369,230	462,638	802,757	248	309	537	4	244	305	533

Per cent of demand on peak days = 30%

Peak days in season = 14

Turnover rate = 1

Persons per group = 4

Groups per day = 8

Calculated activity days = (D)

$$\text{Miles of trails needed} = (D)\ \frac{.30}{14 \times 1 \times 4 \times 8} = .000669643\ (D)$$

areas which you visited?", thirteen per cent of the total respondents indicated that they would liked to have had the opportunity to rent saddle horses. This was the second greatest "need" identified by responses to this particular question.

Results of the on-site user survey also showed a high interest in horseback riding at the three state parks which provide horseback riding opportunity. Over 10 per cent of the parties interviewed at these areas listed horseback riding as one of the activities in which they participated during their visit to the park.

Potential horseback riding trail routes are numerous throughout the State. In addition to the areas designated along the Missouri River as possible development sites in conjunction with the Lewis and Clark Trail System, the Platte River Valley provides several potential areas along Interstate "80" for both public and private development of horseback riding facilities. (Guided trail rides could be promoted as tourist attractions in these areas as well as other picturesque areas such as Fort Robinson State Park in the Pine Ridge Area.)

Perhaps the greatest opportunity to take action to meet these needs lies in the private sector. Dude ranches, tourist farms and commercial recreation enterprises could derive additional income by providing saddle horses and riding areas for a fee. Farms and ranches located near large population centers might also derive supplemental incomes in this manner.

Use of horses is both a recreational and an occupational tool in Nebraska. Horses are still used by the ranchers in the vast cattle country of the Sandhills and short-grass plains. On weekends the ranchers' vocation often becomes his avocation. Formal organized rodeos, impromptu gatherings for calf-roping and cutting horse contests are both participant and spectator activities for many rural people of northcentral and western Nebraska.

Needs for facilities to satisfy this activity have not been fully determined. However, several communities have indicated a need for arenas as a facility for these and other associated activities. Although demand has not been fully determined, it is expected that such facilities would be fully justified on the basis of participation. To these people, rodeo is a primary recreation activity, just as baseball is a primary sport to younger people of more populated areas.

Bicycling

Demand for bicycling will continue to grow at a steady rate in the future with participation increasing from the present estimated five million activity occasions demanded to over seven million by 1980 and 11 million by the year 2000. At present there are no especially designated bicycle trails in Nebraska, although an extensive bikeway system is currently under development by the City of Omaha. Most of the present demand is being satisfied on city streets, highways, country roads and public parks.

Additional bicycling areas could be developed in urban areas to divert cyclists away from heavy traffic areas and provide more satisfactory opportunities for bicycling.

Most of Nebraska's demand for bicycling originates in the eastern half of the State. Development of bicycling trails along the Missouri River in conjunction with the Lewis and Clark Trail System would help to satisfy a large proportion of this demand.

In addition to the needs outlined above, perhaps the most important need is to provide places for children to bicycle. Opportunities for bicycling are needed near residential areas. Neighborhood parks and trailways built into residential areas could satisfy a considerable proportion of these needs and reduce the dangers inherent in the situation where children have no place to ride their bicycles except on streets and sidewalks.

Recent urban development concepts incorporating a trail system that provides areas for walking and bicycling where these activities will not be in conflict with automobile traffic have much merit and deserve further consideration in private and public planning efforts.

Driving for Pleasure and Sightseeing

Resident demand for both of these activities is expected to continue increasing in magnitude as population, incomes and the amount of leisure time available for outdoor recreation increase. Nonresident demand for these activities, particularly sightseeing, will increase substantially with the completion of the major east to west super highway, Interstate "80". Further increases in demand can be expected if a major north to south interstate route is developed in the next 10 to 20 years.

Preliminary results of a nonresident tourist survey conducted by the Nebraska Game and Parks Commission during the summer of 1967 show that the three most popular activities listed by these tourists were: driving for sightseeing, visiting historical sites, and outdoor photography. Of those surveyed 64 per cent listed driving for sightseeing, 50 per cent indicated that they visited one or more historical sites and 40 per cent said that they participated in outdoor photography.

Sightseeing was listed most often by visitors to the 15 state recreational areas in the on-site survey with nearly 31 per cent indicating that this was their primary reason for visiting the area.

Scenic highways have been under study by the State Department of Roads and the Nebraska Game and Parks Commission. Landscaping of existing highways is needed in many areas. Scenic overlooks could be developed to provide better viewing points and to enhance photography opportunities. Effective billboard control is currently practiced on Interstate "80" and should be extended to other highways having high scenic value.

Development of historic and interpretive facilities provide the greatest potential for enhancement of sightseeing. Areas and facilities identified in the previous section under needs for historic, scientific and cultural sites are of particular significance. Interpretive facilities should be provided at key sites along the Oregon Trail, Mormon Trail, Lewis and Clark Trail, and the Sidney-Black Hills Trail.

Winter Sports

Ice skating, skiing, sledding and tobogganing are the major outdoor winter sports preferred by Nebraskans. Practically no skiing facilities exist in the State and the potential for future development is limited by the lack of sustained periods of snow cover and a shortage of natural slopes suitable for skiing. The major portion of skiing demand which originates in Nebraska must be satisfied outside of the State. Therefore, skiing has not been considered very extensively in this plan.

Ice skating is the most popular outdoor winter sport in Nebraska. According to peak season demand estimates, Table 6.14, the demand for ice skating totals over one million activity days. This demand is expected to increase by 44 per cent during the next five years, 93 per cent by 1980 and 297 per cent before the turn of the century. Sledding and tobogganing demand is only about one-fourth of the ice skating demand (267,000 occasions in 1967) and is expected to increase in popularity at a lesser rate.

Minimum needs for developed ice skating areas in each socio-economic area, shown in Table 8.13, are based upon a comparison of presently developed sites and a standard of one acre developed for ice skating per 2,500 population over 12 years of age. These data indicate that the area of primary need for development of ice skating facilities is in the eastern part of the State, particularly in the Omaha and Lincoln SEA's. Since ice skating is primarily a day use activity, the needs originating in one socio-economic area should be satisfied in that area, preferably within or near municipalities. It is estimated that 301 additional acres of developed ice skating areas could be utilized in the State by 1972. Some of these needs will have to be satisfied on private lands, which were not included in the summary of lands presently available for ice skating.

Demand for sledding and tobogganing will also continue to grow. The primary need for public development of lands for these activities will be for use by young people living in urban areas.

Games and Sports

Participation in games and sports is expected to increase approximately 31 per cent by 1972, 71 per cent by 1980 and 226 per cent by the year 2000. The present demand of about 14 million activity days will more than triple by the year 2000. Provision of specialized facilities for these activities rests almost entirely with local governments and the private sector. Demand and needs will be particularly evident in the urban areas.

Table 8.13. Gross needs and deficiencies for ice skating areas based upon one surface acre per 2,500 population 12 years and older.

	Estimated Population			Gross Needs (Surface Acres)			Present Supply Acres	Deficiencies (Surface Acres)		
	1972	1980	2000	1972	1980	2000		1972	1980	2000
South Sioux City	21,317	21,867	24,294	9	9	10	30	21	21	20
Omaha	454,985	553,022	941,861	182	221	377	37	145	184	340
Lincoln	208,202	241,927	380,371	83	97	152	37	46	60	115
Beatrice	46,220	41,891	24,147	18	17	10	9	9	8	1
Norfolk	76,463	78,980	88,309	31	32	35	13	18	19	22
Columbus	41,131	44,079	55,857	16	18	22	206	-	-	-
Grand Island	71,255	74,783	88,195	29	30	35	5	24	25	30
Hastings	48,675	51,058	60,540	19	20	24	17	2	3	7
Kearney	42,414	45,025	55,828	17	18	22	8	9	10	14
McCook	29,443	29,683	24,784	12	12	10	219	-	-	-
North Platte	50,192	52,667	68,870	20	21	28	43	-	-	-
Ogallala	13,418	12,948	11,235	5	5	5	3	2	2	2
Valentine	35,660	32,547	19,978	14	13	8	109	-	-	-
Scottsbluff	66,470	73,110	97,361	27	29	39	2	25	27	37
Nebraska	1,205,845	1,353,587	1,935,630	482	542	777	738	301	359	588

Golf Courses

The commonly recognized standard of one golf hole for each 3,000 people is not an adequate guideline for rural areas. With the great variation in population density within the State, development of any standard must be a compromise. Guidelines which may be developed for the metropolitan areas will not reflect the need for similar facilities in the sparsely populated areas of rural Nebraska. In rural areas, the county or population serviced within 25 to 30 miles must be used as the basic planning unit when determining needs.

The following standards will be used as guidelines in development of golf courses under the Nebraska Comprehensive Outdoor Recreation Plan:

(1) Rural areas and cities less than 30,000 population. One golf hole per 1,000 county population (population within a 25-mile service radius may be substituted for the county).

(2) Metropolitan areas. One golf hole per 2,000 people.

All golf courses which are available to the public, whether operated by private or public agencies, have been included in determination of needs.

Golfing needs are outlined in Table 8.14 based upon the standards shown above and upon an inventory of existing golf courses by number of golf holes in each socio-economic area. In this inventory all golf courses except those known to be open to members only were considered together. Consequently, sand green courses were given the same status as grassed greens and no differentiation was made between municipal and privately owned golf courses open to the public.

The primary needs for future developments to satisfy golfing demand are:

(1) Development of new courses particularly in the Omaha SEA, as shown in Table 8.14, to service primarily urban areas which do not have adequate public facilities.

(2) Improvement of existing golf courses including conversion of sand green to grass green courses.

Golf courses available for public play are well distributed within the State. However, 56 per cent of the courses and approximately 50 per cent of the golf holes are sand greens. Excluding courses in the South Sioux City, Omaha and Lincoln SEA's, 70.5 per cent of the remaining courses and about 68 per cent of the golf holes are sand greens. The quality of many sand green courses is less than desirable and there has been a significant trend to replace or convert these courses to grass greens. This trend to more sophisticated and higher quality courses is expected to continue and will represent a substantial part of the golfing needs in Nebraska.

Table 8.14. Needs for new golf courses based on available courses for public use and identified standards.

Socio-Economic Area	Existing Supply				Estimated Needs	
	Sand Greens		Grass Greens			
	Courses	Holes	Courses	Holes	Courses	Holes
South Sioux City	0	0	1	18	1	9
Omaha	2	18	12	162	7	117
Lincoln	3	27	11	117	1	18
Beatrice	3	27	1	9	1	18
Norfolk	3	27	5	54	1	18
Columbus	4	36	1	18	1	9
Grand Island	6	54	1	9	1	18
Hastings	6	54	1	9	1	18
Kearney	5	45	2	18	0	0
McCook	7	63	1	9	0	0
North Platte	5	45	3	27	1	18
Ogallala	4	36	0	0	0	0
Valentine	8	72	2	18	0	0
Scottsbluff	5	45	3	36	1	18
Total	61	549	48	540	16	261

Playfields and Playgrounds

Needs for playfields, playgrounds, tennis courts, ballfields and basketball courts will be identified in general terms since the inventory of facilities and lands shows only publicly owned, non-school facilities. In many villages and smaller cities a considerable proportion of the demand for games and sports is satisfied by school owned playgrounds and sport facilities.

The most evident need for specialized facilities for these activities both now and in the future, is within the metropolitan areas and larger cities. Small cities and villages which do not provide these facilities, either at the municipal level or through their school system, should develop basic facilities for games and sports which will serve the town population as well as the surrounding rural area.

Most of the facilities for these activities should be provided on areas classed either as playgrounds or playfields as defined below and under the concepts identified in Table 8.15.

Playgrounds. Neighborhood playgrounds are primarily designed to serve the play needs of children 6 to 14 years old. Size of playgrounds vary according to the size of the city but normally are from three to seven acres. If the population calls for a much larger area, two or more smaller playgrounds, well-distributed throughout the municipality will better serve the needs of the people. Playgrounds should be located within a quarter mile of the homes which they are designed to serve. Since the playground is used to a large extent by dhildren of grammar school age, a good location may be at or adjoining the elementary school site.

Well developed playgrounds should provide an area for pre-school children, an apparatus area, open spaces for informal play, fields and courts for a variety of games, shaded areas for quiet activities, and a shelter area. Most playgrounds should be fenced, and trees and other plant materials introduced.

Playfields provide facilities that make possible diversified recreation activities for young people and adults, although a section is normally set aside for the use of children. A portion of the playfield is sometimes set aside as an athletic field for highly specialized sports, but it differs from the athletic field in the diversity of uses which it provides for people of all ages.

The minimum size for a playfield will depend upon the population serviced and activities planned. There should be a playfield within a half mile of every home, the distance depending upon population density and ease of access. In general, a playfield will meet the needs of the people living in a district served by four neighborhood playgrounds. Since the playfield provides many facilities used by junior and senior high school students, there are advantages in locating the playfield on or adjoining a high school site.

Among the common playfield features are a children's playground, areas for field games and sports, and batteries of game courts.

Table 8.15. Minimum criteria for playgrounds and playfields in municipalities.

	SMSA	1st Class Cities	2nd Class Cities	Villages
I. Playgrounds	One acre per 800 population	One acre per 800 population	One acre per 800 population	One acre per village
II. Playfields				
(1) Fields	One field per 20,000 population	One field per 10,000 population	One per City	One per village
(2) Acreage	One acre per 800 population	One acre per 800 population	One acre per 800 population minimum 5 acres	Five acres
(3) Special Areas				
a. Ballfields	One field per 6,000 population	One field per 6,000 population	One ball-field	One ball-field
b. Tennis Courts	One per 2,000 population	One per 2,000 population	One per 2,000 population	

Other games and sports facilities, such as rifle ranges, trap and skeet ranges, and pistol ranges should receive consideration in municipal planning efforts when local needs can be shown. The State should provide areas, particularly in eastern Nebraska, for both big-bore and small-bore rifle ranges and designate certain areas as hand-trap ranges.

Facilities for attending outdoor sporting events, concerts, dramas, etc. will also need to be developed to satisfy the growing demand for these spectator activities. Most of these needs should continue to be provided at the local level.

Handicapped Needs

Special consideration should be given to providing outdoor recreation opportunities to Nebraska's physically and mentally handicapped persons. Several special needs can be served through increased participation in outdoor recreational activities. Recreational opportunities can help these people develop their physical and emotional potential as well as enriching their leisure time and helping them achieve added self-confidence, become more self-sufficient and improve their physical coordination.

Available statistics indicate that approximately 10 per cent of Nebraska's population may suffer from some sort of physical or mental handicap. An estimated 45,000 to 72,000 people in the State suffer some degree of mental retardation. Of this latter group, about 60 per cent are mildly retarded and suffer only a few accompanying physical handicaps, the remaining 40 per cent suffer from more severe mental retardation and usually accompany physical handicaps as well.

Buildings constructed with public funds in Nebraska are required, whenever practical, to incorporate design features which will permit access by physically handicapped people. This concept will be followed in future development of public outdoor recreation areas, especially parks. Architectural features which may constitute only an inconvenience to the public in general may become an insurmountable barrier to use of the facility by someone who is physically handicapped. Sanitary facilities are often difficult to get to, and are usually constructed with minimum floor space and narrow doorways. These facilities in particular should be readily accessible to the handicapped. The physical layout of recreation areas can and should be designed so that people do not have to cross traffic to get to picnic tables, restrooms and recreation areas.

The physically and mentally handicapped usually participate in the less strenuous activities. Especially designated time periods for group visits by the mentally retarded, especially children, might be arranged to increase their enjoyment, since they seem to be less inhibited while with their own group. However, most physically handicapped appear to prefer that they be treated as anyone else, so long as the basic facilities are designed to permit easy access.

Special features such as fishing piers for physically handicapped, trails marked in braille for the blind, and pathways built to accommodate the handicapped should also be considered in future development of public outdoor recreational areas.

Action on the part of all levels of government and by the private sector will be necessary if the needs of this important, though often neglected, segment of Nebraska's population are to be met sufficiently.

Special Needs for the Elderly

Special consideration should also be given to persons whose age makes it more difficult to participate in the outdoor recreational activities most popular with the majority of the population. In many cases it will not be necessary to provide special facilities for this group, but more a matter of adapting present and potential facilities so that they can better serve the needs of this group. Built-in safety features, convenient locations, ease of access and attractive surroundings are probably the main factors to consider for older persons.

Needs of Low-Income Groups

People in low-income groups cannot afford to participate in expensive outdoor recreation activities, nor travel far from their neighborhood to take part in recreational activities. Consequently, special emphasis should be given to providing outdoor recreational opportunities close to their homes and within disadvantaged areas. Priority should be given to developing those facilities which can best be utilized by these people.

Providing for the needs of the youth from low-income areas should be of particular concern in development of recreational facilities and programs, particularly in the urban areas. Special programs to provide these youngsters with outdoor recreational experiences comparable to those enjoyed by other children are especially worthy of consideration by public entities. Special group camps and recreational areas could be developed to meet these needs. Transportation services could be provided to carry these youngsters to areas which are presently inaccessible to them.

Other Programs Needed

Conservation education must be a continuing and integral part of any public program associated with development of resources. Our way of life and the continued economic and social progress of the Nation is dependent upon the wise use and management of natural resources. The great technological advances in agriculture and its contributions to the social and economic progress; the dependency of all life on water, the many uses of water and the necessity for wise water management; our dependence upon the soil and its products; concepts and contributions of modern wildlife management, range management, forestry and other land uses -- all are imperfectly understood even though the future is largely dependent upon how well the land and related resources are managed.

The story of agriculture, conservation and resource management can be illustrated and interpreted in an outdoor setting. It can be entertaining as well as informative. It is a story that can and should be told in the out-of-doors. The opportunity exists to tell this story to a large segment of the American people who travel through Nebraska on Interstate "80".

Preservation of Nebraska's pioneer heritage will provide a vital link between past and future development of Nebraska. Restoring historic sites, etc. will contribute much toward this goal. Re-creating some aspects of frontier life in Nebraska would add realism and provide a flavor of the times to these historic sites and help Nebraskans and visitors to the State more readily identify with the character of the western frontier.

Re-creating Buffalo Bill's Wild West Show for exhibition throughout the summer would be one way in which this goal could be achieved. Such a show could be provided in conjunction with the Buffalo Bill's Ranch State Historic Park near North Platte. This living memorial to the western frontier days would provide considerable recreational and cultural enjoyment to visitors to the State as well as to Nebraskans.

SUMMARY

Non-urban public land and water needs for Class I, II and III lands, based on population standards, were estimated at 50,740 acres for 1972. These needs are expected to increase to 182,200 acres by the year 2000. The greatest identified needs originate from the Omaha and Lincoln SEA's which account for 69 per cent of the needs for non-urban lands.

Resource based land needs for major state parks are estimated at 33,000 acres. This includes lands necessary to complete a 40,000-acre Fort Robinson State Park Complex in northwestern Nebraska, and land required for expansion or completion of Ponca and Indian Cave State Parks.

The total estimated existing need for municipal recreation lands is 5,423 acres which includes 1,608 acres for villages, 1,355 acres for cities of the second class, 1,789 acres for cities of the first class and 671 acres for the metropolitan cities. Considering past population trends, needs for villages and cities of the second class will remain relatively static through 1972. Needs of cities of the first class and metropolitan cities will increase by 1972 and show substantial increases by 1980 and 2000.

Needs for state wayside areas oriented to the needs of transients are divided into two broad categories; (1) areas along Interstate "80", and (2) wayside areas along other major routes. Interstate "80" needs are of three types; (1) seven road ranches, (2) eight day-use areas, and (3) special use areas with an estimated requirement of 3,000 acres. Twenty-eight additional wayside areas, totaling 420 acres, need to be acquired and developed to serve the transient needs along other major highways.

Significant and identified historic, scientific and cultural sites should be purchased to insure future generations with a physical link to their heritage.

As with recreation lands, facilities will need to be provided in relation to the people. Needs for a wide range of outdoor recreational activities have been examined to identify what facilities are needed and where the need for these facilities originated. Although some of the facility needs for these various activities can be satisfied outside of the socio-economic area in which the need originates, the majority must be provided within one to one and one-half hours drive of the major population center or within the municipalities. Table 8.16 shows gross needs for developed lands and waters in each socio-economic area based upon the combined needs at all levels for each activity as determined by the design load concept used in the discussion of needs for each activity. These needs represent acres of lands and waters which would be ideally needed to satisfy all of the expected outdoor recreation demand within the socio-economic area in which the demand originated.

Although these figures cannot be interpreted as the precise needs for recreational land development in each area, they do illustrate the geographic region in which user-oriented recreation developments should be concentrated in the future. The gross summary of developed land and water needs by recreational activity indicates that 244,480 acres will be needed by 1972, 322,369 acres by 1980 and 651,457 acres by 2000. Gross needs include needs to be satisfied by either the federal, state, county or municipal governments or the private sector and should not be confused with the needs shown previously based on standards. Approximately 83 per cent of the 1972 needs will originate from the Omaha and Lincoln SEA's.

Recreation needs are not limited to additional land and the facility needs which are directly related to individual outdoor recreation activities. Provision must be made for general facility developments at recreation areas, such as (1) access and interior road systems, (2) sewage treatment facilities, (3) water distribution systems, (4) toilets and (5) outdoor lighting facilities to increase public safety and lengthen the available use periods.

Some special programs, such as development of interpretive facilities, are needed to enhance the quality of the recreational and cultural environment of the State. Groups such as the aged, handicapped and low-income groups must be given special consideration to satisfy the total outdoor recreation needs of the people of Nebraska.

Table 8.16. Summary of gross developed land and water needs by socio-economic area (based on design-load calculations and data from Tables 8.4 through 8.13).

	Acres of Deficiency by Activity							Total Deficiencies in Acres		
	Picnicking	Camping	Boating	Water-skiing	Swimming	Fishing	Ice Skating	Total Land*	Total Water	Total
South Sioux City										
1972	0	13	1,048	336	0	2,145	21	130	3,550	3,680
1980	0	22	1,268	440	0	2,415	21	220	4,144	4,364
2000	9	53	2,047	1,086	1	3,207	20	620	6,361	6,981
Omaha										
1972	1,275	980	30,627	20,784	18	70,258	145	22,550	121,832	144,382
1980	1,736	1,442	42,048	31,704	29	87,046	184	31,780	161,011	192,791
2000	3,672	3,518	93,768	83,544	79	149,185	340	71,900	326,916	398,816
Lincoln										
1972	275	412	9,795	5,018	6	25,281	46	6,870	40,146	47,016
1980	442	588	14,095	9,166	10	31,202	60	10,300	54,533	64,833
2000	1,154	1,369	33,475	28,760	29	53,243	115	25,230	115,622	140,852
Beatrice										
1972	0	60	2,102	478	2	5,250	9	600	7,841	8,441
1980	0	66	2,174	559	2	4,605	8	660	7,348	8,008
2000	0	53	1,622	695	2	1,263	1	530	3,583	4,113
Norfolk										
1972	2	0	0	0	2	2,908	18	20	2,928	2,948
1980	19	5	0	0	2	3,849	19	240	3,870	4,110
2000	68	93	0	0	4	6,442	22	1,610	6,468	8,078
Columbus										
1972	0	45	1,143	0	0	5,268	0	450	6,411	6,861
1980	12	65	1,649	0	0	6,097	0	770	7,746	8,516
2000	60	141	3,671	1,372	0	8,917	0	2,010	13,960	15,970
Grand Island										
1972	0	95	577	0	0	8,804	24	950	9,405	10,355
1980	33	127	1,382	0	0	9,968	25	1,600	11,375	12,975
2000	96	242	4,336	728	1	13,497	30	3,380	18,592	21,972

Table 8.16. (continued)

	Acres of Deficiency by Activity							Total Deficiencies in Acres		
	Picnicking	Camping	Boating	Water-skiing	Swimming	Fishing	Ice Skating	Total Land*	Total Water	Total
Hastings										
1972	39	75	2,632	782	3	7,842	2	1,140	11,261	12,401
1980	51	98	3,183	1,048	3	8,671	3	1,490	12,908	14,398
2000	94	183	5,360	2,818	5	11,292	7	2,770	19,482	22,252
Kearney										
1972	22	51	0	0	0	0	9	730	9	739
1980	35	73	0	0	0	0	10	1,080	10	1,090
2000	80	157	0	0	0	0	14	2,370	14	2,384
McCook										
1972	0	8	0	0	0	0	0	80	0	80
1980	0	16	0	0	0	0	0	160	0	160
2000	0	27	0	0	0	0	0	270	0	270
North Platte										
1972	0	80	0	0	0	0	0	800	0	800
1980	0	160	0	0	0	52	0	1,060	52	1,112
2000	46	182	0	0	0	2,837	0	2,280	2,837	5,117
Ogallala										
1972	0	0	0	0	0	0	2	0	2	2
1980	0	0	0	0	0	0	2	0	2	2
2000	0	0	0	0	0	0	2	0	2	2
Valentine										
1972	0	0	0	0	0	0	0	0	0	0
1980	0	1	0	0	0	0	0	10	0	10
2000	0	0	0	0	0	0	0	0	0	0
Scottsbluff										
1972	19	79	185	0	0	5,585	25	980	5,795	6,775
1980	45	116	1,138	0	0	7,225	27	1,610	8,390	10,000
2000	140	297	5,728	931	0	13,584	37	4,370	20,280	24,650

Table 8.16. (continued)

	Acres of Deficiency by Activity							Total Deficiencies in Acres		
	Picnicking	Camping	Boating	Water-skiing	Swimming	Fishing	Ice Skating	Total Land*	Total Water	Total
Nebraska										
1972	1,632	1,898	48,109	27,398	31	133,341	301	35,300	209,180	244,480
1980	2,373	2,725	66,947	42,917	46	161,130	359	50,980	271,389	322,369
2000	5,419	6,315	150,007	119,934	121	263,467	588	117,340	534,117	651,457

*Total land needs are equal to acres needed for developed picnicking and camping grounds times ten, (based upon the ratio of nine undeveloped acres to each developed acre).

Chapter IX

Delineation Of

Recreation Responsibilities

DELINEATION OF RECREATION RESPONSIBILITIES

The Nebraska Comprehensive Outdoor Recreation Plan envisions the participation of all levels of government and the private sector in meeting the present and future needs for outdoor recreation. Responsibility for supplying outdoor recreation facilities will rest at the lowest level of government which is financially and legally capable of acquiring, developing and maintaining outdoor recreation areas.

Federal agencies shall have the responsibility of acquiring, developing and maintaining needed recreation facilities on existing land owned and managed by these agencies and of acquiring and developing those areas of national significance which are within the policy framework of the various agencies.

The State shall have the responsibility of developing and maintaining those types of outdoor recreation areas and facilities which have national, statewide or regional significance, and which extend beyond the financial and organizational capabilities of counties or municipalities. Such areas and facilities may include but are not limited to major state parks, regional and state recreation areas, wayside parks, historical parks, public hunting areas, access sites to navigable and fishable waters, picnic areas and natural areas. The State shall also have the responsibility for maintaining and updating the Comprehensive Statewide Outdoor Recreation Plan, and coordination and administration of activities under the Land and Water Conservation Fund program.

Counties of the State have not assumed an active role in development and administration of outdoor recreation programs to satisfy regional or local demands. Consequently, this responsibility has been assumed largely by the State, as evidenced by many small recreation areas which primarily serve a local demand.

Counties will be urged to assume leadership in acquisition, development and maintenance of parks, and outdoor recreation programs that would serve the needs of communities broader than a municipality but less than statewide or regional in scope.

In Nebraska, however, it is doubtful that individual counties will or can assume this role. Limited populations, low tax bases and the small size of most counties prohibit an active program. Those counties which do have the necessary financial and organizational capabilities, however, are being urged to establish an active outdoor recreation program that will satisfy local needs. Without reorganization of the present county system, counties with these capabilities are limited to the larger and more populus units, which are located primarily in the eastern one-third of Nebraska. If a regional approach could be undertaken by smaller counties, cooperation of two or more counties might provide the necessary financial capability to initiate and maintain a program. A similar city-county approach would be advantageous in supplying highly local non-urban recreation facilities which may also be used by members of the county community who are not included in the municipality.

Until outdoor recreation becomes an integral part and function of county government, the State must program to meet local needs for non-urban outdoor recreation. But such demands must assume lower priority in an action program than those which will have regional or statewide significance.

Outdoor recreation programs of counties should include but not be limited to regional or county parks and recreation areas offering a wide range of activities, historic areas of local significance, natural and scenic areas, maintenance of access roads to recreation areas, and local leadership.

The role of the municipalities is obvious. They must assume the responsibility of providing outdoor recreation facilities which satisfy primarily the needs of a given urban community. Provision of facilities to satisfy the needs of youth, senior citizens, or other non-mobile groups is of particular significance.

Existing state legislation pertaining to the Land and Water Conservation Fund Act provides that 60 per cent of the monies received under this Act will be allocated to state projects, and 40 per cent will be allocated to political subdivisions. It also provides that the State will make grants-in-aid up to 25 per cent of approved projects.

The provision of grants-in-aid from federal and state funds should provide sufficient stimulus to political subdivisions to acquire and develop outdoor recreation facilities needed to satisfy local demand.

Public agencies cannot meet all the needs for outdoor recreation activities. Driving and sightseeing is a primary activity. The landscape is the showcase of the State to recreationists and tourists of the Nation. With over 97 per cent of the state area in private ownership, maintenance of a high quality landscape must rest primarily with private landowners. Other private groups, such as wildlife clubs, garden clubs, service organizations, etc., working in cooperation with public agencies, should provide the stimulus and leadership in awakening the need for high quality landscape.

Provision of specialized outdoor recreation facilities by the private sector to the general public revolves about a profit motive. Therefore, specific responsibilities cannot be assigned to private enterprise. Provision of these facilities is dependent upon monetary return in profit to the operator.

Public agencies, however, do have a responsibility to those individuals or groups who provide outdoor recreation facilities to the public as a business venture. The State or its political subdivisions should not be a competitor to private enterprise in those areas in which private developments for public use can be provided profitably at reasonable fees. Coordination of developments between public agencies and private groups is necessary to insure the best results in overall public benefits.

In many instances, it will be necessary and desirable to develop private facilities on public lands. In these cases, the concessionaire will have the responsibility of developing facilities to meet the need for which the concession was granted and of sufficient quantity and quality to meet the public needs.

Those groups who engage in providing outdoor recreation activities to the public have a responsibility to assure adequate facilities for sanitation and safe use by the public. State and local governmental agencies will have the responsibility of inspection to assure provision of adequate facilities in accordance with state laws or local ordinances.

Private non-profit associations often assume responsibility for providing certain facilities to its members. Often the association is based on a specific specialized activity such as golf, skeet shooting, trap shooting, archery, swimming or boating. These organizations should be encouraged to continue providing facilities which will satisfy the specialized needs of their members.

Land developers may make valuable contributions to community resources if outdoor recreation is incorporated in planning and development. Some developers now provide certain outdoor recreation facilities such as membership swimming pools, lakes, or open space within housing developments. These features are used to advantage in their promotional programs. Development of these facilities pays dividends in appeal to the buyer and increased property value. Local zoning regulations and policies should encourage recreation and open space planning by developers.

BIBLIOGRAPHY

BIBLIOGRAPHY

Condra, G. E. 1923. Geography of Nebraska. University Publishing Co., Lincoln.

_____, and E. C. Reed. 1959. The Geological Section of Nebraska. University of Nebraska Press, Lincoln.

_____, E. C. Reed and E. D. Gordon. 1950. Correlation of Pleistocene Deposits of Nebraska. University of Nebraska Press, Lincoln.

Knox, Alan B., and A. H. Anderson. 1964. Living in Nebraska - A Report on Characteristics and Interests of Nebraska Adults. Adult Education Research, University of Nebraska, Lincoln.

Lincoln Sunday Journal and Star. Nebraska Almanac. January 29, 1967 and January 28, 1968. Lincoln, Nebraska.

Morton, J. S. and A. Watkins. 1918. History of Nebraska. Western Publishing and Engraving Co., Lincoln.

Nebraska Bureau of Business Research, Bulletin, April, 1967, Lincoln.

Nebraska Game and Parks Commission. Nebraska Game Laws, 1967-1969. Lincoln.

Nebraska Legislative Council. Nebraska Blue Book 1966. Joe Christensen, Inc. Lincoln, Nebraska.

Olson, James C. 1955. History of Nebraska. University of Nebraska Press, Lincoln.

Ottoson, Howard W., Eleanor Birch, and Phillip A. Henderson. 1965. Land and People in the Northern Plains Transition Area. University of Nebraska Press, Lincoln.

Outdoor Recreation Resources Review Commission. 1962. Outdoor Recreation for America. U. S. Government Printing Office, Washington, D. C.

_____. 1962. Participation in Outdoor Recreation: Factors Affecting Demand Among American Adults. U. S. Government Printing Office, Washington, D. C. Report No. 19 and 20.

_____. 1962. Projections to the Years 1976 and 2000: Economic Growth, Population, Labor Force and Leisure, and Transportation. U. S. Government Printing Office, Washington, D. C. Report No. 23.

Palmer, Edgar Z. 1960. Recreational Aspects of Three Nebraska Lakes. Bureau of Business Research, University of Nebraska. Community Study Number Three, Lincoln.

Putnam, John W. 1964. Some Economic Aspects of Irrigation Development in the Blue River Basin. Nebraska Farm and Ranch Economics No. 197. Extension Services. University of Nebraska, Lincoln.

Rodney, Lynn S. 1964. Administration of Public Recreation. The Ronald Press Co., N. Y.

Searcy, N. D. and A. R. Longwell. 1964. Nebraska Atlas. Nebraska Atlas Publishing Company, Kearney.

State of Wisconsin. 1962. Recreation in Wisconsin. Wisconsin Department of Resource Development, Madison.

University of Nebraska. 1963. Climatic Atlas of Irrigated Regions in Nebraska. University of Nebraska Press, Lincoln.

U. S. Department of Commerce. 1959. Climatography of the United States, No. 60-25. U. S. Government Printing Office, Washington, D. C.

_____, Bureau of Census. 1965. Illustrative Projections of the Populations of States: 1970 to 1985. Revised current population reports, Population Estimates, Series P-25, No. 362. U. S. Government Printing Office, Washington, D. C.

U. S. Department of the Interior, National Park Service. 1964. Parks for America. U. S. Government Printing Office, Washington, D. C.

U. S. Bureau of Census, U. S. Census of Population: 1960. Number of Inhabitants, Nebraska Final Report PC (1) - 29A, U. S. Government Printing Office, Washington, D. C. 1960.

Van Doren, C. S. Recreational Usage and Visitors Expenditures Gavins Point Dam and Reservoir Summer, 1959. Business Research Bureau, University of South Dakota, Bulletin No. 65, Vermillion.

Wallace, L. T., and V. W. Ruttan. 1962. Area Development and Industrial Decentralization Proceedings of a Conference on Area Development. University of Georgia, Athens.

Walsh, Richard G. 1960. Changing Our Minds About Recreational Use of Rural Land and Water Resources. Nebraska Farm and Ranch Economics No. 152. Extension Service, University of Nebraska, Lincoln.