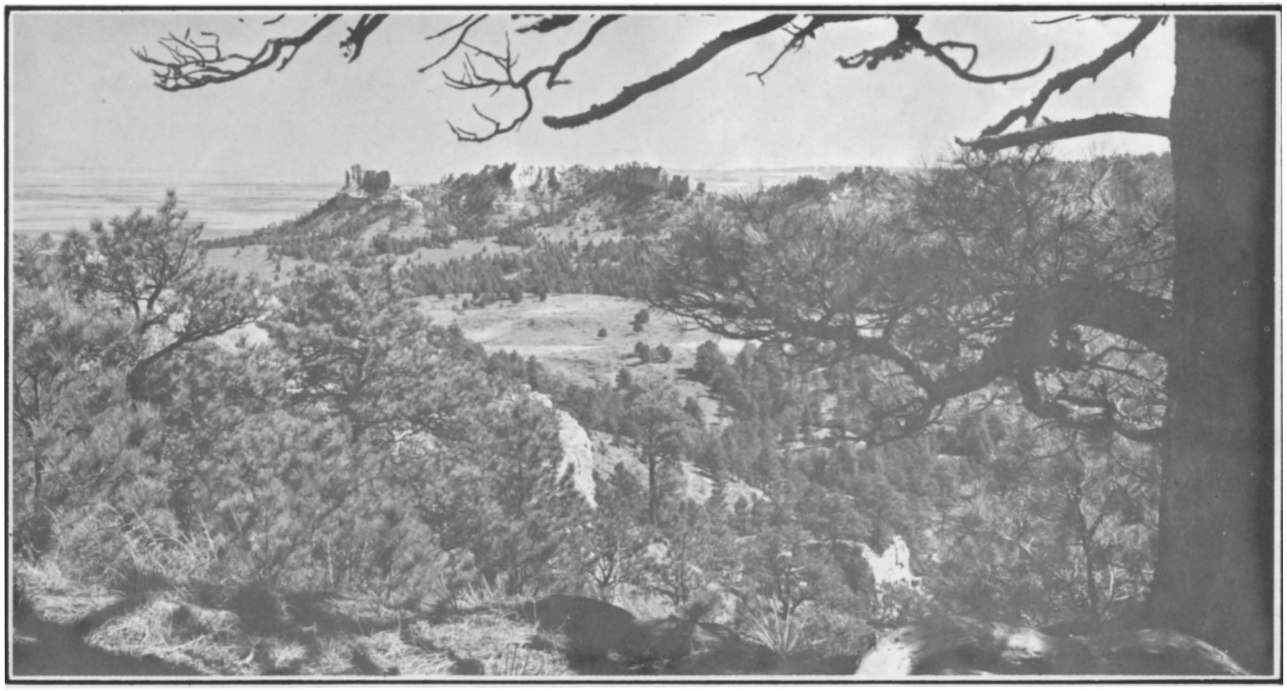
1978

Comprehensive Plan for Fish and Wildlife On Nebraska National Forest System Lands

Comprehensive Plan for Fish and Wildlife

ON NEBRASKA NATIONAL FOREST SYSTEM LANDS



FOREST SERVICE
U.S. DEPARTMENT OF AGRICULTURE
IN COOPERATION WITH
NEBRASKA GAME AND PARKS COMMISSION

Comprehensive Plan for Fish and Wildlife

ON NEBRASKA NATIONAL FOREST SYSTEM LANDS

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Foreword

Although fish and wildlife are no longer necessary for human survival in this country, they continue to play an important role in today's society. Fishing and hunting are primary recreational pursuits of a large segment of the public. Other types of recreation activity, aesthetics, recovery of threatened and endangered species, and control of depredating animals demonstrate the public's continuing interest in wildlife management. Maintaining these resources in suitable quantity and quality requires a cooperative effort by the Forest Service, USDA, responsible for the provision of suitable habitat, and the Nebraska Game and Parks Commission, responsible for managing the animals and licensing hunters and fishermen.

In 1974 Congress passed P.L. 93-452 (commonly known as the Sikes Act). Title II of this act provides for the improvement or maintenance of wildlife habitat on certain public lands, including those administered by the Forest Service. The intent was to establish a program whereby state wildlife and fish management agencies and certain federal land managing agencies could cooperatively develop and conduct programs for maintaining or improving wildlife habitat. The act requires that such programs be based on a comprehensive wildlife management plan for each state, prepared jointly by these agencies.

This particular plan has been prepared by the Forest Service and the Nebraska Game and Parks Commission for the lands and waters of the Nebraska National Forest in Nebraska. It is intended that this plan and the activities it generates will be coordinated with the mutual interests, land management planning, and resource management plans of the concerned agencies' units. Also, it will not conflict with previously established and applicable state and federal laws, the regulations and policies of the concerned agencies, or any previously established agreements. A general Memorandum of Understanding between the Rocky Mountain Region (Region 2) of the Forest Service and the Nebraska Game and Parks Commission exists and spells out the cooperative arrangement for wildlife and fish management.

Wildlife habitat and the abundance and variety of wildlife in Nebraska vary with the soil, water, and weather conditions that prevail in various parts of the state. The mixed deciduous forests of the east graduate into ponderosa pine forests in the west. The stable, fertile soils of the east support intensive agriculture, while the grasslands dominating the central and west generally favor the grazing of domestic livestock under current management technology.

The Nebraska Game and Parks Commission has determined the kinds, locations, and numbers of wildlife and their habitat requirements. From this information, the present and future status of wildlife species can be predicted and insight gained into current and future management needs. Management programs generated by this plan are intended to be coordinated with these needs and with the needs of the management and use of other resources and the general public benefit.

Grazing by domestic livestock has the single greatest impact on National Forest System lands in Nebraska, and it is reasonable to assume that grazing and grazing management systems will continue to have the greatest impact on forest wildlife habitat. Options available through various range management schemes can produce various types of grassland habitat, depending on the location and precipitation pattern. Wildlife habitat will be managed primarily through manipulation and adjustments in range management systems, but where habitat requirements cannot be met in this way, they will be accomplished through direct habitat improvement. Habitat capability, compatibility with other resources, public interest and needs, and public involvement are the factors that have been and will continue to be used in selecting the management prescription for a given piece of land for wildlife management.

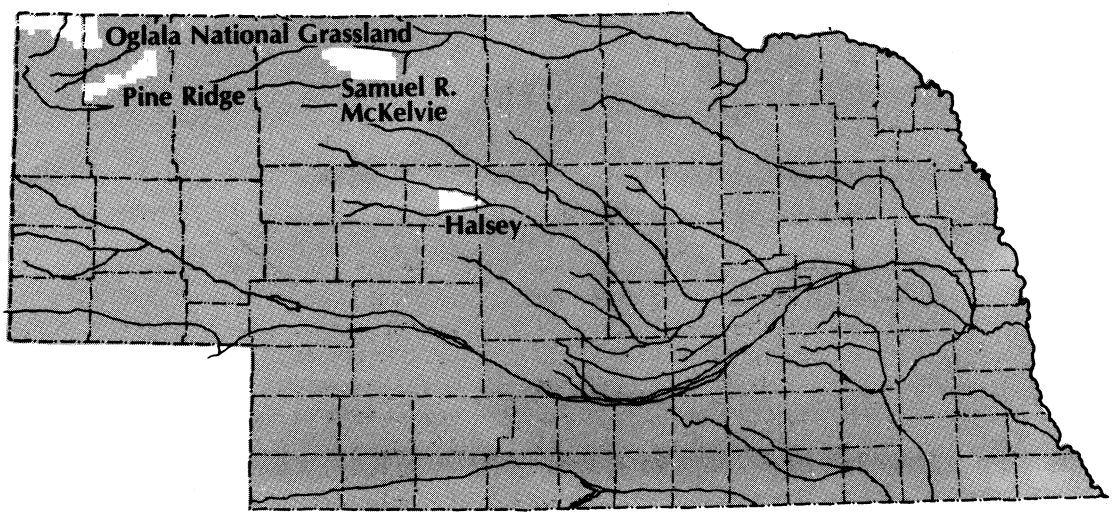
Although P.L. 93-452 prompted preparation of this plan, it merely expedites the process already under way by which quantified and objective programs are conducted. This plan is expected to be strengthened and expanded in succeeding years. Its goals and programs are subscribed to by:

Director
Nebraska Game and Parks Commission

February 15, 1978
Date

Regional Forester (R-2)
Forest Service, USDA

Feb. 10, 1978
Date



Chapter I

Purpose, Scope and Goals

Purpose

Wildlife and fish are integral and functional parts of forest and grassland environments. Application of this plan should improve and maintain habitats, as well as the types and populations of wildlife species within them.

Various types of habitat manipulation are effective means of improving such environments to produce a diversified and sustained supply of wildlife and fish. Direct habitat improvement and coordination with other resource management programs will be used to help realize the management objectives as they concern lands under Forest Service administration. However, this plan is not a "recipe book," requiring specified ingredients or actions. Rather it provides means by which well-considered actions may be proposed and executed and proper management decisions made.

Scope

This plan outlines in general terms a program of indeterminate length for fish and wildlife habitat improvement on National Forest System lands in Nebraska, as well as estimated costs. It is intended that a continuing program be initiated not later than FY 1978. Although it emphasizes habitat improvement initially, the plan will integrate other aspects of wildlife and fish management to product a total program.

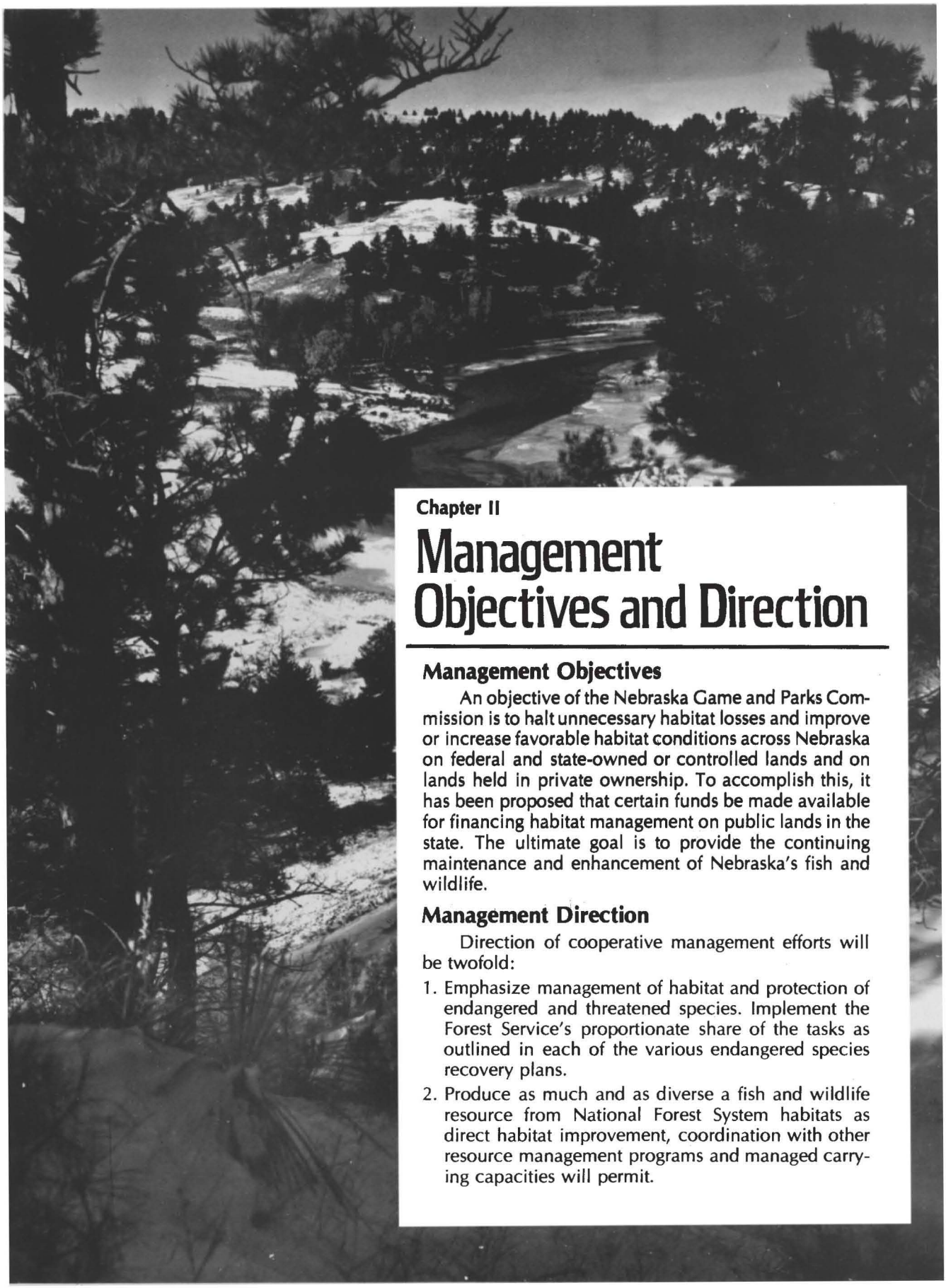
Basic source documents used in the preparation of this plan were Forest Wildlife Management Plans. Forest Multiple Use Plans, and State Wildlife Management Plans and Inventories. This plan will facilitate coordination, programming, and implementation of wildlife management activities on National Forest System lands in Nebraska from 1976 to 1981. It involves approximately 350,000 acres of public land on the Nebraska National Forest, the Samuel R. McKelvie National Forest, and the Oglala National Grasslands.

The Commission's wildlife resource inventories were compiled in two phases. The first categorizes the state by habitat types, while the second delineates wildlife ranges and densities and examines critical factors involved in maintaining or improving the wildlife resource.

Goals

Primary goal of this plan is to produce fish and wildlife and the associated recreation activities on public lands for the general public benefit. Its major thrust is to maintain, to the extent possible, a diversity of habitats and variety of species that meet the needs and desires of the people while at the same time maintaining a compatability with other resource uses on National Forest System lands in Nebraska. Specific objectives of the plan are:

1. To intensify wildlife and fish protection and management activities so existing populations are maintained or enhanced.
2. To actively coordinate all range programs and other resources to manipulate and enhance wildlife habitat. Habitat needs will be met by coordination with all other resources and by direct habitat improvement.
3. To apply habitat practices on the Ogalala National Grasslands that will product optimum levels of fish and wildlife and demonstrate how this can be accomplished on associated private and other public lands so as to:
   a. provide a base applicable to federal, private, and other public lands to meet wildlife habitat needs and
   b. contribute to the economic security and stability of the area.
4. To fully realize the recreational potential and related economic benefits derived from fish and wildlife resources.



Chapter II

Management Objectives and Direction

Management Objectives

An objective of the Nebraska Game and Parks Commission is to halt unnecessary habitat losses and improve or increase favorable habitat conditions across Nebraska on federal and state-owned or controlled lands and on lands held in private ownership. To accomplish this, it has been proposed that certain funds be made available for financing habitat management on public lands in the state. The ultimate goal is to provide the continuing maintenance and enhancement of Nebraska's fish and wildlife.

Management Direction

Direction of cooperative management efforts will be twofold:

1. Emphasize management of habitat and protection of endangered and threatened species. Implement the Forest Service's proportionate share of the tasks as outlined in each of the various endangered species recovery plans.
2. Produce as much and as diverse a fish and wildlife resource from National Forest System habitats as direct habitat improvement, coordination with other resource management programs and managed carrying capacities will permit.

Antelope currently are most numerous on the Oglala National Grasslands, where more than two antelope per square mile occur over the entire range. About 175 antelope were taken in 1974 from the North Sioux Unit (which includes the Oglala National Grassland, and the population continues to increase. This trend may be due partly to reductions in sheep grazing both on National Grasslands and adjacent private land areas. Consequently, there is less competition for the available browse. Antelope have also naturally extended their range.

Nebraska antelope were extensively trapped and transplanted in the Sand Hills in the late 1950's and early 1960's. This population has never really flourished and currently numbers less than 0.3 antelope per square mile. The population there is considered static or slightly declining.

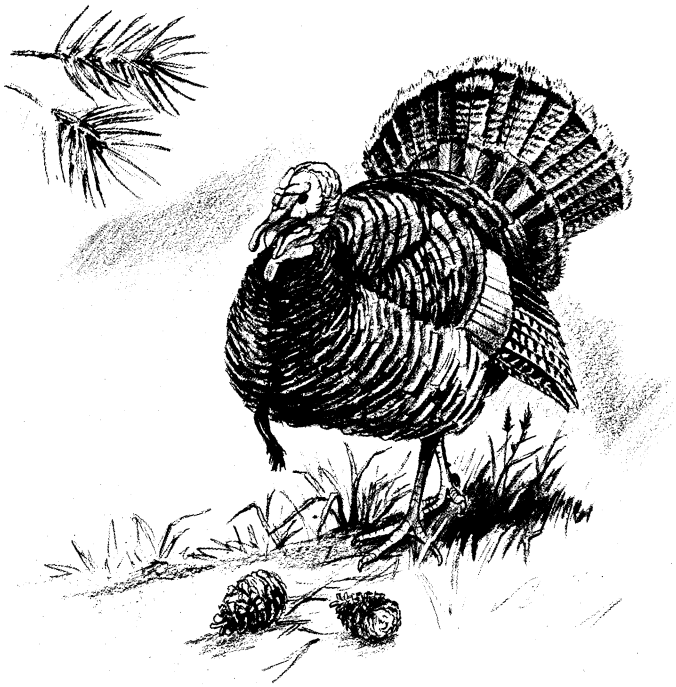
b. **Deer**

Both white-tailed and mule deer are indigenous to all units of the Nebraska National Forest. Historically, mule deer may have occurred only in the rougher hills, with the whitetails largely restricted to major river bottoms. Brushy draws, now a major habitat component for deer, were probably absent or were in very poor condition from periodic wild fires and the grazing, trampling, and bedding impact of bison. Deer numbers were lower prior to White Men entering this country than they are today.

Increases in prairie herds during the last 5 to 10 years may be due, in part, to intensified livestock management systems. Rotation grazing with better water distribution keeps cattle out of the woody bottoms for a part of the growing season and allows the trees, shrubs, and grasslands to grow more vigorously.

The first modern deer hunting season in Nebraska was held in 1945 on the Bessey Division. Another season was not held until 1949. The Pine Ridge boasts excellent deer habitat and currently has the largest deer numbers in the state. Approximately 26 percent of the deer harvested in the Pine Ridge Management Unit are taken from Forest Service lands. The Bessey Division, with its large tree plantations, has a moderate deer population; the Samuel R. McKelvie National Forest and Oglala National Grasslands have only small deer herds. Harvest on National Forest System lands in Nebraska was slightly under 600 deer in 1974. The Sand Hills population is holding or slightly decreasing, while the Pine Ridge herd is stable to slightly increasing. The deer population on the Oglala National Grasslands, like the grasslands of South Dakota, is growing markedly.

Currently, demand for deer hunting on all units, administered as part of the Nebraska National Forest, exceeds the capability of the available resource.



c. **Turkey**

After the initial stocking of 28 Merriam's turkeys in 1959 on the Pine Ridge, the population mushroomed to an estimated 1,500 to 2,000 birds in just three breeding seasons. This simply illustrates what can happen to a turkey population in excellent habitat without competition. Turkeys now occupy most of the suitable habitat available and provide an annual harvest of 250 to 300 birds from the 50,000 acres of National Forest in the Pine Ridge area.

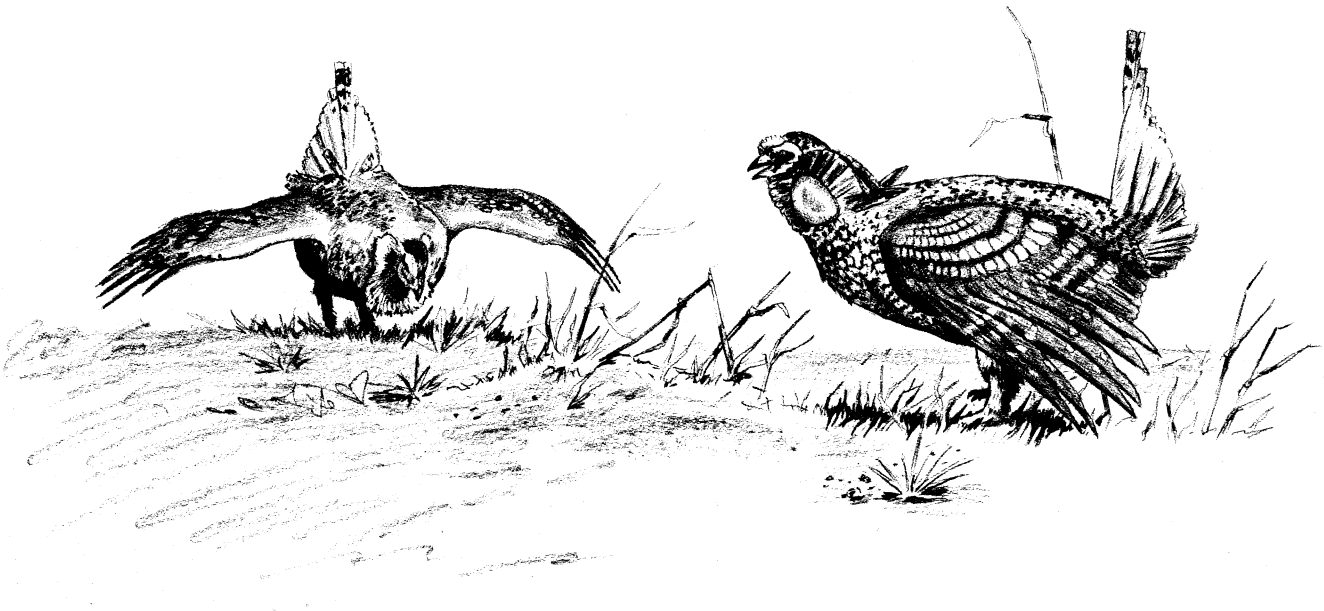
A release of turkeys made along the Niobrara River in 1960 now also provides a huntable population. Although the Samuel R. McKelvie National Forest is located just south of the river, birds are found on private land nearby.

Turkeys were also released on the Bessey Unit, where the population increased to over 150 birds before the big fire of 1965. Since then the population has remained below 50 birds. Why this population stays static mystifies biologists. Demand for turkey hunting during both spring and fall seasons exceeds present capability of the resource.

d. **Prairie Grouse**

Both sharp-tailed grouse and greater prairie chicken occur on lands administered as a part of the Nebraska National Forest. The greater prairie chicken is a tall to mid-grass species, while the sharp-tailed grouse occupies the mid to short grass areas.

The greater prairie chicken currently occupies only a fraction of its original range, due to cultivation of most of the tall grass prairie. Small numbers of prairie chickens are found on the Bessey and McKelvie units in the Sand Hills. The greater prairie chicken may never have been abundant on this western portion of its range.



During the late 1800's and early 1900's large numbers of sharptails were harvested for market and sport. Coupled with the drought of the 1930's, prairie grouse populations fell to an all-time low, and hunting was greatly restricted. Not until 1950 were restrictions lifted. Since then, Nebraska has had an annual season. Populations of sharp-tailed grouse vary from 40 birds per square mile on the Bessey Unit to less than one bird per square mile on parts of the Oglala National Grasslands.

Prime sharptail habitat occurs in the 15 to 19-inch precipitation belt. This rainfall zone supports a mixed grass prairie where mid-grass species dominate and brushy draws, with a variety of fruit-bearing species, cut the rolling grasslands. Grouse numbers tend to reflect range condition. Range that can be maintained in good to excellent condition will be most productive of prairie grouse, particularly the sharptail.

Harvest data on sharptails is available only for the Bessey Unit. Average harvest for eight years (1962-1969) was 722 birds, with a low of 302 and a high of 1,459. Research data from intensive investigations on the Bessey Unit indicates that sharptail populations presently sustain the maximum hunting pressure compatible with their reproductive potential. Harvest on other units of the forest is lower, but the sharp-tailed grouse is the most heavily hunted upland game bird on the Nebraska National Forest.

e. **Waterfowl**

Historically very few waterfowl nested in areas now part of the Nebraska National Forest. Water occurred only in the major river drainages. Today, tens of thousands of stockwater developments occur on public and private land in the western prairies of Nebraska and the Dakotas. This has resulted in a new breeding ground and flyway, although it is minor when compared to the entire Central Flyway. Very little waterfowl hunting is done on land administered as a part of the Nebraska National Forest.

A giant Canada Goose restoration project has been ongoing in the Sandhills area for several years. Portions of the Oglala National Grasslands have potential for restoration of this species through water and nesting site development.

f. **Mourning Dove**

From the mid-1950's to 1975, hunting of mourning doves was prohibited by act of the Legislature. The law was repealed in 1975, and a season was held that fall.

High mourning dove numbers are associated with all units administered as a part of the Nebraska National Forest. The birds are very apparent during late summer and early fall. Nesting habitat, both ground and above-ground, is readily available on all units. Other habitat for loafing, feeding, and roosting is in good supply.

The potential is high for increasing both dove numbers and harvest through minor land modification and water development.

g. **Other Game Species**

Several other game species are found on the units, including pheasant, bobwhite quail, cottontail rabbits, and fox squirrel. For the most part, none of these species occur in large enough numbers or attract enough interest to be considered primary game species.

The pheasant is a marginal species there, except where land-use changes have provided an intrusion of agricultural use into or near National Forest System lands. Pheasant numbers will probably remain static on all the units during the next 10 years. Bobwhites exist on the units almost entirely as a whim of nature. All units are outside the usual quail range in the state. When habitat conditions are favorable, bobwhite numbers can be expected to increase, as happened for several years following

the 1965 fire on the Bessey Unit. Otherwise, quail numbers will remain marginal, and are not expected to contribute to the hunting resource.

Both cottontails and fox squirrels are found on all units. Neither species experiences much hunting pressure. When habitat conditions are favorable, both will show population increases. For the forest visitor, both species provide observational value.

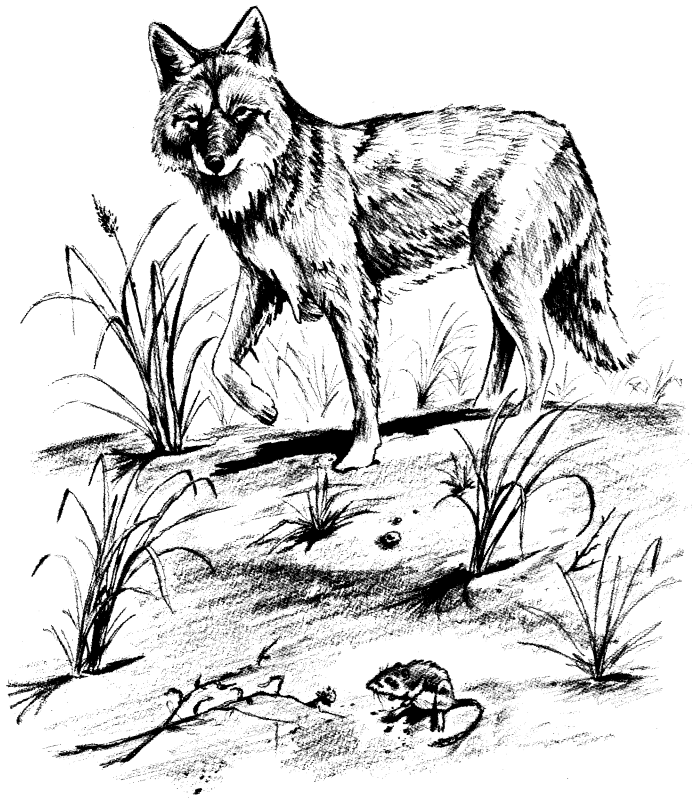
2. Nongame Species

a. **Mammals**

A variety of small mammals occupy the ecosystems of the Nebraska National Forest System lands. Some are abundant but are seldom observed because of low visibility and lack of interest by most people. A list of mammals on the Pine Ridge and Oglala National Grasslands was completed in 1976 by Jay Druecker and associates of Chadron State College. This was a big step in developing interest and consideration of these mammals in management programs. Very little is known on management methods for these species.

b. **Birds**

All units provide a diverse habitat for a great variety of nongame birds. The Pine Ridge and Sandhills units provide habitat areas where a mixing of both eastern and western species occur. This transition zone is ecologically unique as well as having significant scientific value. Species lists have been compiled for the Bessey and Pine Ridge units. The habitat requirements for most of these species are not well known, nor is any management currently directed toward nongame birds. For the forest user, species such as the swallows, magpie, long-billed curlew, and warblers provide a high-value experience.



c. **Furbearers**

Furs were the principal reason the early explorers ventured up some of the major drainages like the Cheyenne and White Rivers of South Dakota and the Niobrara of Nebraska, but furs have contributed relatively little to the economy during the past. Most recently, with fur prices at all-time highs, the outlook for a continued economic impact is favorable.

3. Endangered and Threatened Species

The protection and improvement of the habitat of endangered or threatened species will be given high priority on National Forest System lands. The intent is to restore such species to a nonendangered or nonthreatened status, or at least to secure their populations on Forest Service administered lands.

a. **Endangered mammals:**

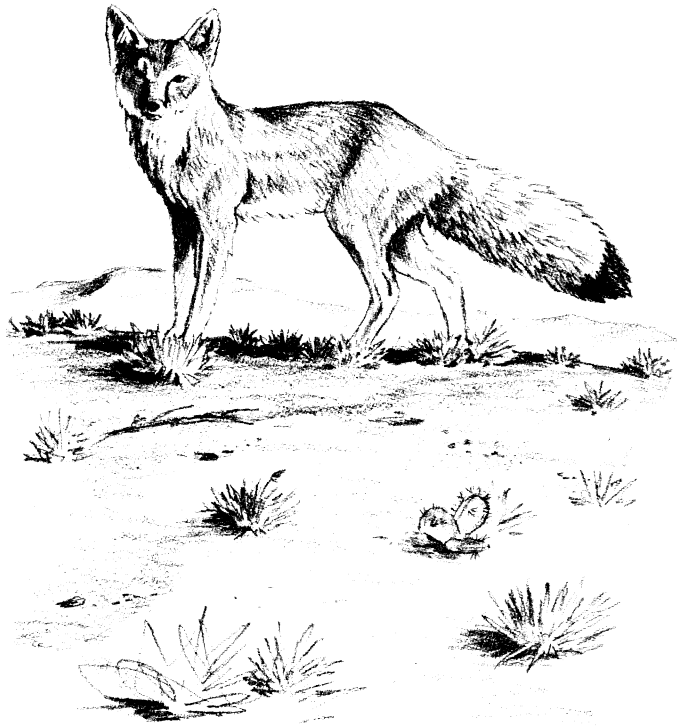
(1) **Black-footed ferret** (federally designated)—A highly selective predator, the black-footed ferret probably never was numerous. Its habitat is principally prairie dog towns. There is some likelihood of black-footed ferrets on National Forest System lands in Nebraska, although the last recorded sighting was in 1959. Prairie dog towns are common only in the western part of the State.

(2) **Swift Fox** (state designated)—The Nebraska National Forest is within the historical range of the swift fox. Current sightings in the Nebraska Panhandle, plus a road-kill in Logan County near Stapleton, in the last six years would indicate that there may be an occasional swift fox on the National Forest System lands in Nebraska.

b. **Birds** in the endangered category are:
   (1) Whooping crane
   (2) Eskimo curlew
   (3) Arctic peregrine falcon
   (4) American peregrine falcon

c. There are no *endangered fish* species in Nebraska, but the following are considered threatened:
   (1) Lake sturgeon (Acipenser fulvescens)
   (2) Pallid sturgeon (Scaphirynchus albus)
   (3) Northern redbelly dace (Chrosomus eos)
   (4) Finescale dace (Chrosomus neogaeus)
   (5) Pearl dace (Semotilus margarita)
   (6) Brook stickleback (Culaea inconstans)

d. **Other species considered threatened** in Nebraska are
   (1) Birds
      (a) Interior least tern
      (b) Mountain plover



4. Species deserving special attention
   a. **Raptors**
   A variety of predatory birds are found on and over the units of the Nebraska National Forest. Prairie falcon, golden eagle, and ferruginous hawk nest in the area and need special attention.
      (1) Bald Eagle—The bald eagle does not nest in this area but winter sightings occur frequently. We have no historical nesting records of this bird. It is a species of national interest occasionally seen during migration.
      (2) Golden Eagle—There were three known active golden eagle nests on the Nebraska National Forest in 1975. Several other nests occur on lands adjacent to the National Forest. The history of the golden eagle in this area is not known.
      (3) Ferruginous Hawk—The population level of this large hawk has been declining. One of its preferred nesting locations is the lower limbs of trees in the Great Plains. This makes their nest highly visible and vulnerable to destruction by shooting. The increased interest in large raptors coupled with stricter laws and better law enforcement in recent years may be reversing the downward trend, but it is not yet measurable.
      (4) Prairie Falcon—At the present time, there are five known active prairie falcon nests on the Nebraska National Forest. There is no data on the history of their distribution and abundance in this area.

b. **Great Blue Heron**

Reports on heron numbers and colony locations on the Bessey unit appeared in the literature as early as the early 1900's. Early maps of the unit indicate locations of four heronries. Presence of this species is directly tied to the existence of isolated patches of suitable hardwood trees in the "hills". Small groves of hackberry, usually from 4 to 12 trees, have usually been the key to heron use. Many times these areas will be located several miles from the Dismal or Middle Loup rivers. Within the past 20 years normal mortality of hardwoods as well as the increasing weight of nests themselves has caused the gradual disappearance of more prominent heronries. While fencing cattle out of the areas has prolonged tree life, heron numbers are declining. Adaptation to conifers as alternative nesting sites may be possible since an isolated colony was discovered in a pine stand during 1974. Nonconsumptive use of the heron by the public, from the birdwatcher's standpoint, is quite high. The bird has a special appeal to the nature-oriented forest visitor.

c. **Trumpeter Swan**

The trumpeter swan is a native to the Great Plains of North America. One restoration area is located around LaCreek National Wildlife Refuge near Martin, South Dakota. Birds that winter on the refuge seek nesting ponds nearby. Nesting pairs use the Valentine National Wildlife Refuge area and the Sand Hills perimeter area. Some areas on the Oglala National Grasslands have potential for trumpeter restoration.

d. **Elk**

Periodic records of elk exist for the Pine Ridge. Sightings and records have increased particularly since 1972. Approximately seven years ago, a four-point bull was shot north of Hay Springs, Nebraska. The bull (ear-tagged) had been transplanted as a yearling from Yellowstone National Park to an area south of Lusk, Wyoming, the previous year. Four cows and one bull spent the winter of 1973-74 approximately 1.5 miles east of Pasture 39 on the Pine Ridge. One bull was shot near the Kings Canyon Road during the 1973 deer season. One cow was seen in Pasture 24 during the fall of 1972.

Approximately 24 elk were observed four miles northeast of Chadron in February of 1973. These elk are believed to have returned to (or drifted into) South Dakota.

The small amount of public land and the interspersed ownership pattern results in no large blocks of public land in the Pine Ridge area. Elk are very gregarious, and large herds are common in the western mountain states. Large herds of these animals could cause significant damage to haystacks and crops during deep snow winters in this area.

Elk will probably continue in small numbers in the Pine Ridge area, but large numbers will not be tolerated by farmers and ranchers.

e. **Prairie Dog**

The prairie dog population (10 towns, 129 acres) on the Bessey Division is relatively static. In the Sand Hills, prairie dogs are restricted to hard sand bottoms because their burrows cave in in the loose sands. Consequently, future expansion is quite limited. The two prairie dog towns occupying 134 acres on the Oglala National Grassland are expanding. The hard clay soils of the grasslands make most of this area potential prairie dog habitat. According to local people, much of the grasslands was once occupied by prairie dogs. The size and locations of a prairie dog town must be managed in conjunction with other grassland uses.

f. **Sage Grouse**

The sage grouse is on the eastern fringe of its natural range in northwestern Nebraska. A few have been observed on the Oglala National Grasslands during the last five years.

Northwestern Nebraska apparently had at least a huntable population of sage grouse up until the 1930's, according to local ranchers and conservation officers. Present management practices are not thought to be detrimental.

g. **Burrowing Owl**
The burrowing owl, like the black-footed ferret, is mainly a resident of prairie dog towns. Most of the older prairie dog towns of the National Forest have a burrowing owl population. Their history and status is unknown, but because of their association with prairie dogs, their numbers must have been substantially larger when there were more acres of prairie dog towns.

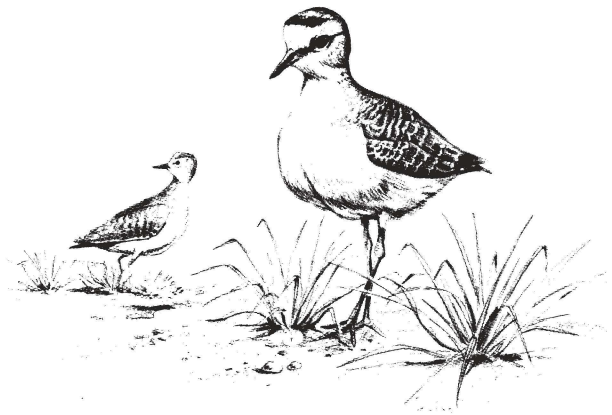
h. **Mountain Plover**
The short grass prairies of the Nebraska National Forest are within the historical range of the mountain plover. A recent sighting of this bird was made in the Nebraska Panhandle.

5. Fish

a. **Game Fish Species**
Surveys of all units on the Nebraska National Forest indicate that trout on the Pine Ridge Unit would constitute the primary area of fisheries interest. Soldier Creek provides suitable habitat for limited numbers of rainbow, brown, and brook trout. Populations are maintained by annual stocking programs. Other streams within the area will assist in bringing about the increase. Use is presently high and is anticipated to increase. Numerous stream improvement structures have been placed on Soldier Creek to provide pools and shaded areas; this and properly managed grazing and stream protection enhancement in selected areas can produce increased carrying capacity in the stream.

Fisheries have also been developed on selected stockwater ponds on the Oglala National Grasslands. Fisheries management has been directed toward the largemouth bass, although some selected deep ponds have been stocked with trout or northern pike.

Short stretches of the Dismal and Middle Loup rivers adjacent to the Bessey Unit provide limited recreational fisheries. The potential for improvement is not considered feasible at this time, because of the nature of these streams (i.e., shifting sand substrate with little available suitable fish habitat).



6. Reptiles and Amphibians

A wide variety of reptiles and amphibians occur on all units of the Nebraska National Forest. From fauna listings for similar physiographic areas and from University of Nebraska publications, it would appear that no rare or endangered species in this category occur on any units of the forest.

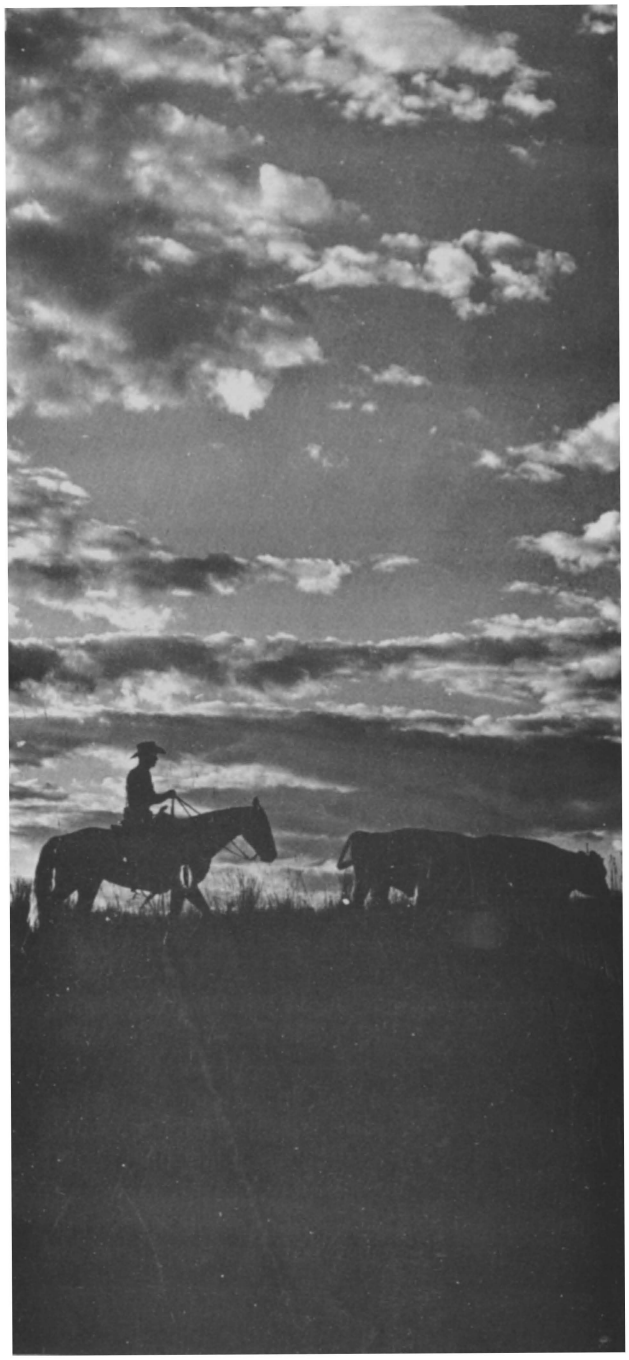
No particular management action is currently employed for any of these species, nor is any change anticipated. The turtles, lizards and snakes, particularly of the Sand Hills Units, provide more than casual interest to the forest visitor, since some are unusual in appearance and behavior. Problems with an occasional rattlesnake in high-use areas have occurred; otherwise, all members of this category provide an added dimension of interest to the forest and range environment.

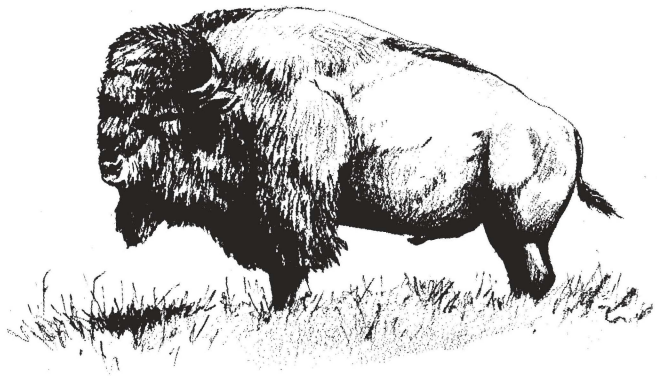
7. Extirpated and Extinct Species

The American bison, grizzly bear, mountain lion, black bear, and wolf are species that historically occurred on the area now administered as a part of the Nebraska National Forest. These species were in competition with the White Man and were eliminated from the area by his activities.

The Audubon bighorn sheep is an extinct species of western Nebraska. This species historically occurred along the Pine Ridge and the area that is now the Oglala National Grasslands.

The mountain sucker *(Pantosteus platyrynchus)* and cutthroat trout *(Salmo clarkii)*, also former Nebraska residents, are considered to be extirpated.





8. Special Management Problems

a. **The Range Resource**

Most of the cattle grazed under permit are cow-calf pairs, but there has been a trend toward yearling management in recent years. In 1974, 22 percent of the cattle grazed under permit were yearlings.

Improved range management systems were implemented on much of the land areas now administered as a part of the Nebraska National Forest, starting in the late 1940's. The Land Utilization Project was turned over to the Forest Service for administration in 1954. Under administration by the Forest Service, improvement in range management systems has progressed. Grazing on the National Forest and Grasslands averages five months from mid-May through mid-October. However, there is much variation in the season of the individual grazing allotments. Typically, cattle are kept on the home ranch during winter and through the spring calving season. There are only a few winter grazing permits. These are mostly on allotments easily accessible from the home ranch where cattle may be looked after during stormy winter weather.

Grazing use in 1975 amounted to 95,653 animal unit months. This included livestock under both grazing permit and special use pasture permit. Total livestock grazed was 20,919 head. Grazing permits were issued to 99 individual ranchers. In addition, there is one grazing agreement in effect with Sugarloaf Grazing District on the Oglala National Grasslands. This grazing district issued 43 grazing permits to its members.

A relatively low percentage of Nebraska ranchers and farmers depend on National Forest System lands to provide livestock forage. In the counties where there are National Forest System lands, 8 percent of the ranchers hold grazing permits. The permits cover only 3.7 percent of the livestock in those counties.

b. **Planted Forests**

Nebraska is one of the few states containing both western softwoods and eastern hardwoods. The two largest tracts of ponderosa pine are located in the Pine Ridge and Wildcat Hills. Hardwoods predominate throughout the remainder of the state, mostly in narrow ribbons along each drainage system. However, no large concentrations occur in any area. A man-planted coniferous forest of approximately 16,000 acres is located on the Bessey District of the Nebraska National Forest. An additional, smaller acreage is located on the McKelvie National Forest. Another 0.8 percent of the state is in shelterbelts and windbreaks. A comparatively small area of badlands is located in the northwest corner of the state and involves a portion of the Oglala National Grasslands. It is composed of highly eroded and parched soils largely devoid of vegetation. This area has limited value to wildlife, although occasional use is made by antelope and deer.

c. **Agricultural Practices**

Agricultural practices have probably influenced Nebraska's current wildlife resources more than any other activity. Some form of farming takes place in every county. Wheat, corn, sorghum, and alfalfa are the primary crops. Some portions of the state have limited production potentials because of poor soil or low rainfall. Improved farming practices and the extensive use of irrigation has led to increased cropland acreages in some areas. Winter wheat is the major crop of the high western plains, while alfalfa and other hay crops occupy significant acreages in the central and western portions of the state.

The Sand Hills, a 20,000 square-mile area, is characterized by undulating, wind-formed dunes covered by mixed grasses. The Bessey District and McKelvie National Forest are located within this area of sandy soil that is susceptible to wind erosion whenever its cover is removed.

d. **Water**

Water is obviously an important component of wildlife habitats. Every species relies on it in one form or another for survival. The numbers, distribution, and migratory patterns of waterfowl and shorebirds are particularly dependent on the presence and quality of water and water-associated habitat.

(1) **Impounded waters** in Nebraska are usually productive, but unless undesirable fish are removed and the reservoir is restocked with desirable species, the production is apt to run largely to carp and suckers. Recreational impoundments are characteristically small and shallow with a tendency to be silted in at an early date. Gravel pits are generally too deep for good production and suffer from lack of sufficient oxygen. Little previous thought has gone into most impoundment projects so fishery benefits are included. Only about one-third of the state's 96,500 acres of permanent natural lakes are considered productive fisheries. Of these acres, 16,126 are available to the public.

(2) During 1967, fishermen put in over 3,000,000 *angler days* pursuing their sport in the state. Forty-four percent of the annual fishing pressure occurs from April through June, with 37 percent from July through September. Channel catfish is the species taken most often by Nebraska anglers, followed by largemouth bass, walleye, sauger, crappie, bullhead, trout, carp and bluegill, in that order. The Nebraska Game and Parks Commission estimates the average recreation use capacity to be 28 persons per mile for streams, three per acre for canals, 22 per acre for public reservoirs, and 44 per acre for natural public lakes.

(3) **Certain species of wildlife have created problems** and nuisances to man in his constant expansion of land use, and in many instances the cost of solving or eliminating these conditions have become burdensome. However, ecologically-oriented planning can eliminate many such problems. By the same token, where gross alteration of the environment can be kept to a minimum, native fauna can be expected to maintain a foothold.

9. User Statistics and Projected Demand

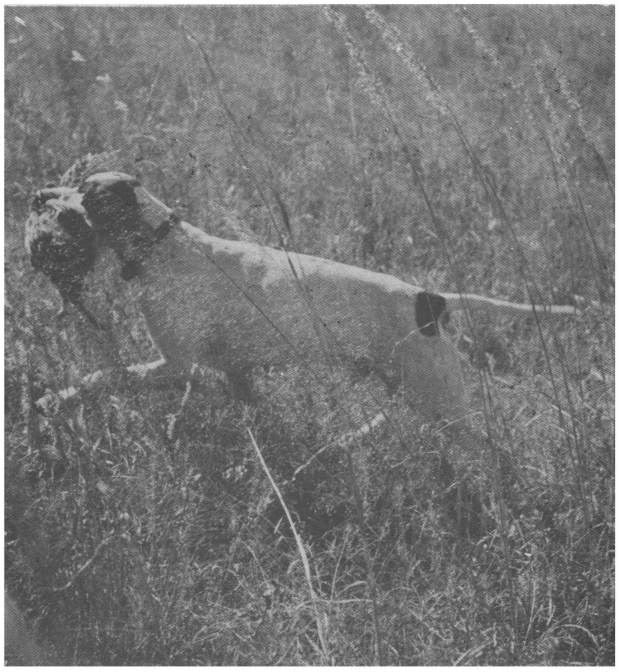
The National Forest System in Nebraska consists of some 350,424 acres, which include the Nebraska National Forest, the Samuel R. McKelvie National Forest and the Oglala National Grasslands acres. These holdings account for about 47 percent of all public lands and about 64 percent of all federal lands available for outdoor recreation in Nebraska.

Under existing conditions and management, only 259 acres of Forest Service land have been designated as general outdoor recreation lands (Class II)[1] which provide a range of outdoor activities. The remaining lands have been designated as Class III[2]. Although recreation facilities may be minimal, these lands are extremely important as a quality 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 Division of the Nebraska National Forest and the McKelvie National Forest both feature large, man-planted areas of coniferous trees in native mid-prairie grasslands. Bessey contains the largest afforested area in the western hemisphere. Located adjacent to Nebraska 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, particularly for grouse and deer hunting. Reforestation efforts by private individuals and organized groups have been helpful in reclaiming portions of the burned over areas, but fire continues to be a serious hazard in dry months. Well developed campsites and a picnic area are available at the entrance. Excellent 4-H group camp facilities are also located on the area.

The Pine Ridge Division of the Nebraska National Forest is in a region which is rapidly becoming one of Nebraska's major vacation and tourist areas. The Pine Ridge is generally recognized as being among the most scenic areas in the state. It is especially important for public sightseeing, camping, hiking and hunting of deer and wild turkey. Additional recreation facilities are being provided on both state and federal recreation areas. The development of small camping and picnicking sites adds measureably to the recreation opportunities provided in the scenic Pine Ridge country.

The Oglala National Grasslands immediately, north of the Pine Ridge, preserve a unique grasslands area in the state. This is also the location of Toadstool Park, site of the spectacular Badlands. Wind and water erosion have left an amazing array of sculptured rock. Rock collecting, an activity for all ages, is a common pastime in agate-rich portions of the grasslands. Antelope hunting is an important activity on this area.



Acres of National Forest System Lands Available for Non-Urban Outdoor Recreation, By USFS.

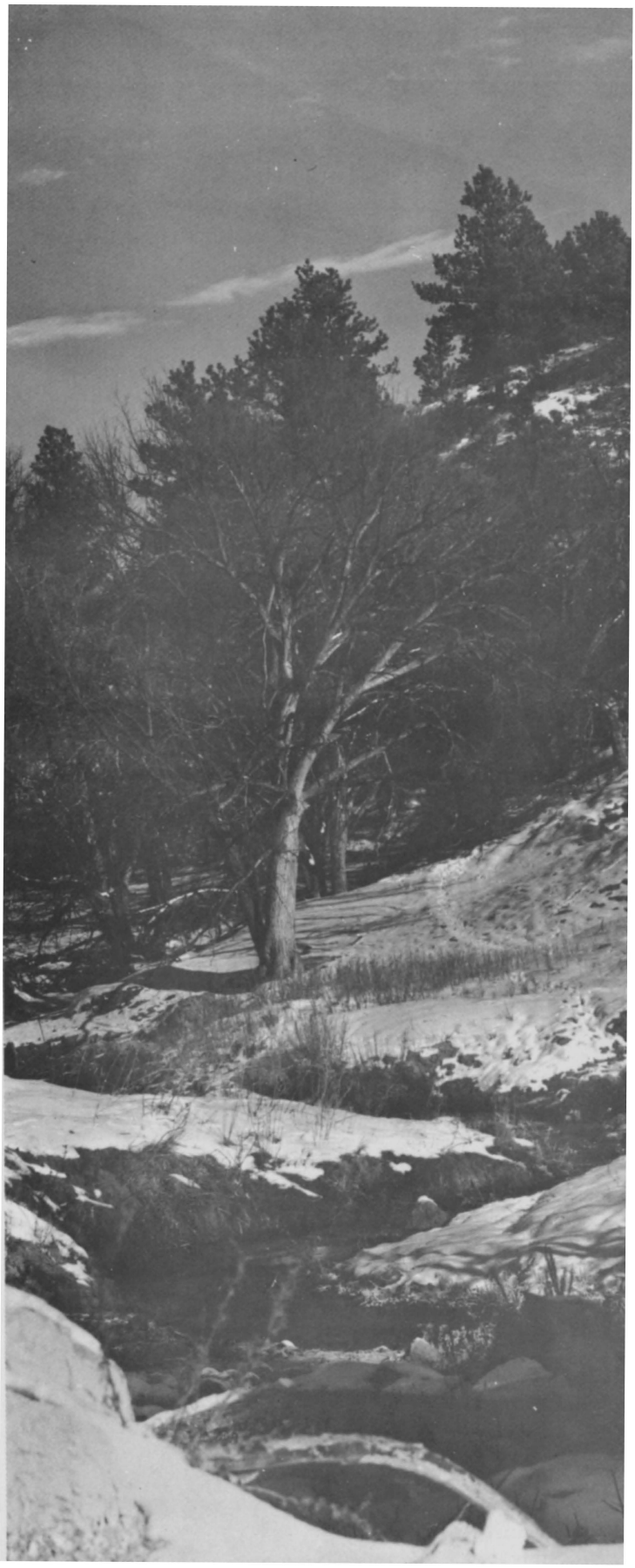
AREAS	WATER OR MARSH	STATE LAND CLASS I	II	III	IV	V	VI	TOTAL
Bessey Div., Neb. N.F.	80		184	90,180				90,444
McKelvie N.F.	616		9	115,013				115,638
Pine Ridge Div., Neb. N.F.	24		63	49,911				49,998
Oglala Nat'l. Grassland	25		3	93,816	500			94,344
TOTAL	745		259	348,920	500			350,424

While Nebraska has a population and land distribution problem common to many other states, this apparently does not deter the highly urbanized eastern Nebraska from utilizing the public lands located in the western portion of the state for hunting and fishing. For example, most of the grouse hunters using the Bessey Unit travel 235-300 miles; 14 percent of all the resident hunters using the forest originated in Lancaster County. Nonresidents using the Bessey Unit for grouse hunting represent some 21 states.

Demand for upland game, waterfowl, big game, and nongame hunting is projected to increase an average of 19 percent for the period 1972 to 1990. A significant proportion of this projected increase will be directed toward Forest Service-administered lands, particularly for deer, antelope, and turkey. The average projected demand for fishing (stream, river, lake and reservoir) is 22 percent higher for 1990 than in 1972. While fishing opportunities are not high on Forest Service lands, those presently provided are of a high and rare quality (stream trout fishing). Greater public use will probably be directed toward this resource.

Chapter IV

Wildlife Management Plan



Habitat Management for Big Game

Antelope occur throughout the western short-grass area and successful introductions have been made in parts of the Sand Hills area. Forbs, sagebrush, and brushy plants, growing in association with grass, comprise an important food source. About 7,000 square miles in the Panhandle are considered primary range and about 10,000 square miles in the Sand Hills are secondary range. The Oglala National Grasslands receive heavy hunter use.

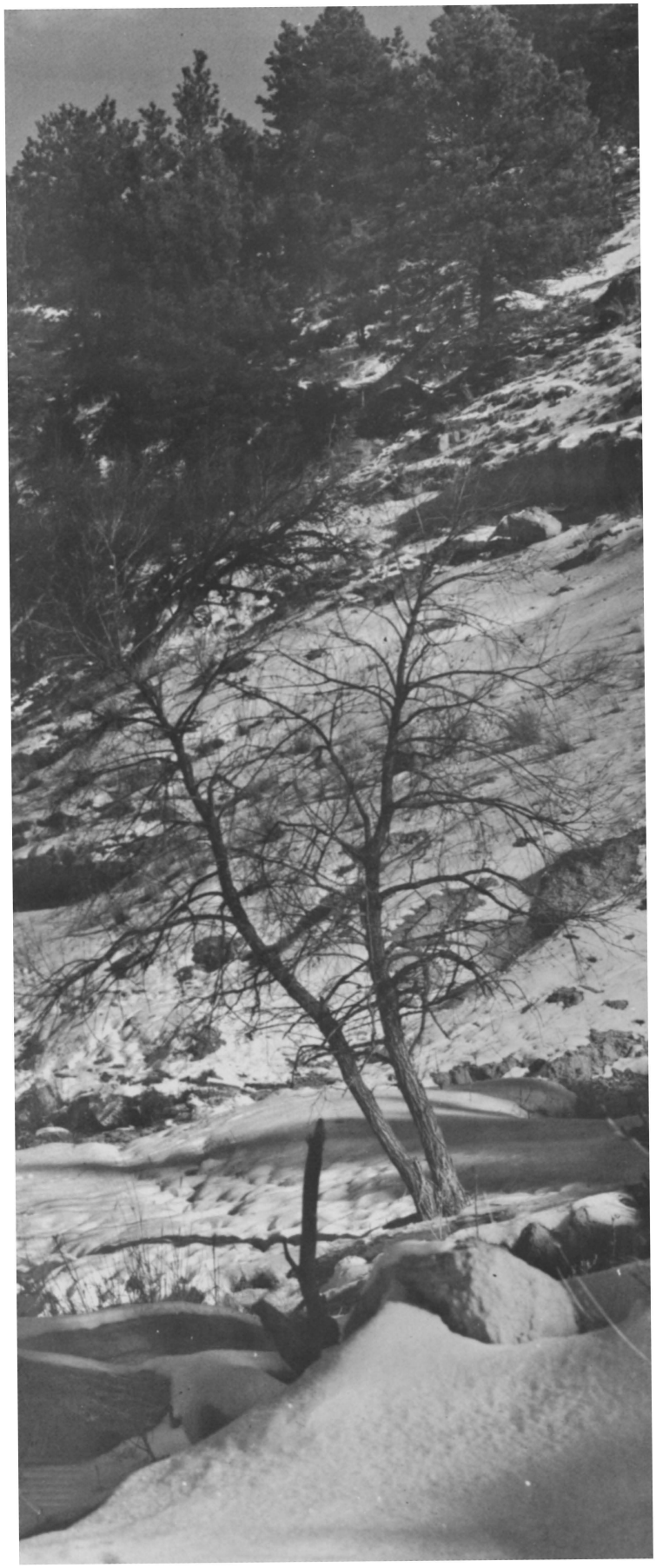
White-tailed deer occur in all counties of Nebraska but are predominant in the eastern part of the state. Densities are highest along the wooded stream courses, but considerable increases have been noted in the marginal habitats of river breaks, canyons, marshes, and some of the larger shelterbelts. They are basically browsers, so tend to be less plentiful in areas of extensive cropland or grassland. White-tails are more productive and less vulnerable to hunters than mule deer. Consequently their populations are expected to increase and spread. They are expected to be the predominant species in the Pine Ridge area in the near future. No large areas of public land are present in the current primary range of white-tailed deer. The main factor limiting their populations is often landowner tolerance to crop depredations when they congregate in relatively large numbers during the winter.

Mule deer occur throughout Nebraska but are most numerous in the western part. They reach their highest densities in the timbered escarpments of the Panhandle area. Their numbers have decreased in some parts of the state. Significant amounts of public land habitat and hunting area are lacking in Nebraska, but the Pine Ridge area provides about 60,000 acres of hunting and habitat. Future management of that area will be aimed at maintaining or improving its capacity for mule deer.

Habitat Management for Small Game

Grasslands form the primary range for the prairie grouse. Sharp-tailed grouse dominate the Sand Hills region, while prairie chickens occur along the southern and eastern edges of the "Hills". Grasslands, in association with woodlands, also form an important cover type for bobwhite quail in the eastern and southern part of the state.

The importance of woody cover for wildlife cannot be overemphasized. Squirrels, turkeys, cottontails, quail, and many species of songbirds particularly depend on it. Removal of both woodland and shrub strips has constituted a great threat to the state's wildlife resource. The consequences of such practices should be analyzed and evaluated.



Small blocks of timberland interspersed with croplands provide the best conditions for **fox squirrels,** such as exist in the Pine Ridge country. **Cottontail** hunting is popular whenever they can be hunted in combination with pheasants, quail and squirrels. Loss of mature timber through land clearing is expected to reduce the numbers of fox squirrels in the future. Variability in most crops is also a problem.

A total of 28 species of **ducks** and eight species of **geese** and swans has been recorded in the state. Twelve duck and four goose species are common. Major production areas are limited to the sandhill lakes and rainwater collection basins. Large numbers of ducks and geese winter in this area. Ponds and water overflow areas in the Oglala Grasslands have potential for greater waterfowl production.

Merriam's turkeys are limited primarily to the Pine Ridge in northwest Nebraska in association with Ponderosa pine stands. Limited numbers are present in the cedar-clump areas of the Dismal River bounding the south side of the Bessey District of the Nebraska National Forest. Introductions are proposed for other areas.

Quail rank next to pheasants in importance to bird hunters in Nebraska. Much of their range in Nebraska is considered marginal, and the lack of adequate habitat results in winter losses in many years. Loss of woody cover is the most critical factor affecting the maintenance of quail populations. Bobwhite may be found in the river bottoms of both the Middle Loup and Dismal rivers in the vicinity of the Bessey Ranger District.

The primary critical factor in **prairie chicken** habitat is the absence of cropland nesting and rearing cover. Residual cover is required for nesting and is not usually available in areas of any but the lightest livestock grazing. **Sharptails** prefer the higher, rougher, drier portions of the Sand Hills, rather than the level, wet-meadow preference shown by prairie chickens. The Bessey Ranger District and McKelvie National Forest areas contain some 206,000 acres that are considered good grouse range and public hunting. As with prairie chickens, the availability of sharptails is influenced by weather, availability of cover, and timing of the hunting season. Sharptails are generally found in rougher terrain than prairie chickens.

The sharp-tailed grouse public observation blind installed by the Forest Service near Halsey in 1968 attracted such a high interest that several more were added. Users came from as far away as Denver and Ames, Iowa.

Habitat Management for Nongame Birds

In an agriculturally-oriented state like Nebraska, both farmers and urbanites note the seasonal arrival and departure of the many and diverse bird species. The extremes of beneficial and detrimental categorization lessen as interest and knowledge in bird lore increases. Some 326 nongame birds are residents or migrants through the state. Crows and starlings have a strong negative economic value.

Habitat Management for Nongame Mammals

Trapping has declined greatly since the 1950's due to loss of habitat, unfavorable fur markets and general lack of interest. Only three species—beaver, muskrat, and mink—are officially classified as furbearers by Nebraska. Other animals present in most parts of the state and trapped on occasion include raccoon, skunk (striped and spotted), civet, badger, bobcat, weasel, opossum, coyote and fox (red and gray). Many coyotes are also taken by sport hunters and predator control agents. In recent years, long-hair fur prices have increased significantly. Continued demand for long-hair species is expected to continue through 1980.

The nongame species are beginning to form a greater part of man's interest in the natural world and environmental situations. Sixty-six nongame mammals are residents or migrants through Nebraska.

Recent legislation prohibits the night hunting of jackrabbits (black-tailed and white-tailed) and has thus reduced the harvest to a considerable extent.

Habitat Management for Fish

Nebraska's waters are typed according to the kind of fishery they can support—cold-water, warm-water or mixed. They are also classified by their importance to the sport fishery or the degrading effects of altered environmental factors.

Artificially-impounded waters are particularly important to the fishery resource of Nebraska. Opportunities for the utilization of this resource are limited on National Forest System lands in Nebraska, but the potential of habitat development or improvement in both old and new reservoirs should be considered. Private owners control most of such sites and efforts to assist them with fishery management are desirable.

When considered in general terms and from the perspective of the total wildlife management situation on National Forest System lands in Nebraska, the actions required to realize the objectives of this plan assume the following priorities:

Management Projects

Highest Priority Projects

1. Protection of woody draws
2. Shrub patch development
3. Protection of riparian vegetation
4. Wildlife water source development
5. Enhancement of waterfowl habitat
6. Water development & enhancement of existing sources

Medium Priority Projects

1. Prescribed burning
2. Construct and install stream structures
3. Plant/provide protection for heronries
4. Development of additional waterfowl habitat
5. Mourning dove habitat enhancement

Lowest Priority Projects

1. Thinning ponderosa pine stands
2. Tree and shrub planting
3. Development of warm-water fisheries
4. Construct hunter access trails

Specific project proposals are based on these priorities and require funding as follows: $449,000 for the highest category; $192,000 for medium, and $228,000 for lowest.

Chapter V

Wildlife Need Analysis

1. **Situation**—Considerable wildlife benefits are obtained through coordination with range management. Grazing systems, season of use, type and density of water development, and fencing are all factors that affect wildlife.

   (a) **Objective**—Provide input and coordinate with range use on all allotment plans when they are updated and revised.

   Evaluate, in detail, each of the 144 existing range allotments for quality range management and future wildlife potential.

2. **Situation**—Tree and shrub patches scattered throughout the extensive grassland areas are of great benefit to both game and nongame species. Tree planting requires protection from grazing and fire to become established. The limited natural tree and shrub stands are often subject to damage by livestock grazing. The riparian ecosystem and intermittent woody draws are the major locations supporting woody vegetation other than the Pine Ridge.

   (a) **Objective**—Establish new tree and shrub planting projects to benefit wildlife on the Sand Hills units of the forest.

   Establish 50 plantings covering 400 acres.

   (b) **Objective**—Manage livestock grazing to protect existing woody vegetation in draws. This is estimated to involve 35 miles (40-80 acres/mile) of woody draws, or 2,000 acres; 125 shrub patches, 600 acres.

   (c) **Objective**—Protect and enhance riparian vegetation where significant damage is occurring.

   Protect riparian vegetation on 25 miles of this ecosystem for an estimated 2,000 acres (80 acres/mile estimate).

3. **Situation**—Availability of water is a limiting factor in preventing turkeys from occupying otherwise suitable range on the Pine Ridge.

   (a) **Objective**—Provide suitable water within one mile of all turkey habitat on the Pine Ridge. There is an estimated need for at least 25 water developments.

4. **Situation**—Prescribed burning can be used to retard ponderosa pine invasion of grassland on the Pine Ridge. In some locations "dog hair" stands of reproduction are present under open, mature stands of pine. There is a need to maintain open, vigorous stands of pine with a variety of forb and grass interspersion for improved habitat diversity and maximum pine seed production.

   (a) **Objective**—Prescribe-burn annually to maintain grassland and to remove excess reproduction in open pine stands...2,500 acres over a 10-year period.

5. **Situation**—Thinning of some ponderosa pine stands will increase pine seed production by reducing competition for light, nutrients, and moisture. Pine seed is one of the principal fall and winter food sources of turkeys and other nongame birds and mammals. Commercial thinning through timber sales is not being done with the present no-cut timber management plan. Thinning is needed in some stands for wildlife benefits.

   (a) **Objective**—Thin pine stands to improve seed production. Some 1,000 acres need this treatment on the Pine Ridge Ranger District. Some of this thinning could be accomplished through sale of posts and poles.

6. **Situation**—The small amount of easily accessible public land (less than one-half percent) in Nebraska has in some cases resulted in over-harvest and disturbance of wildlife. Grouse are presently overharvested on the Bessey Unit, while the antelope and deer harvests can be excessive because of the limited size of the units involved. This must be a management consideration. The small size of the Sand Hills units and the mixed landownership pattern of the grasslands make it nearly impossible to establish special hunting management units. The control of off-road vehicle uses holds the most promise to accomplish better game management in these areas. A seasonal closure to off-road vehicles on part of the Bessey Unit in the past was very well received by grouse hunters, but it was not in effect long enough to determine the impact on grouse populations.

(a) **Objective**—Study the situations and establish needed off-road vehicle restrictions that will protect the wildlife resources and reduce user conflict. Secure public acceptance of the restrictions by public involvement and information meetings.

7. **Situation**—Fishing opportunities are limited on National Forest System lands in Nebraska. Soldier Creek is one of the best trout streams in the state. The fisheries habitat on upper Soldier Creek can be improved through placement of stream structures. Additional warm-water fisheries are in demand on public lands.

(a) **Objective**—Construct stream structures for trout habitat improvement. Estimate 15 structures on Soldier Creek.

(b) **Objective**—Develop warm-water fisheries where practical.

8. **Situation**—Nongame management is a new area of concern by an ever expanding user group. Habitat management data is limited except for some game species or those referred to as pests or varmints. Some guidelines for songbird management are available. As additional research data becomes available, guidelines and management programs will become apparent.

   Nature trails and observation areas can be designed and built for persons desiring nonconsumptive or educational use of wildlife. Educational institutions and youth groups will use these facilities if they are located close to urban areas.

   Species listings for the units provide an added dimension for resource use, particularly for the nonconsumptive user. Development and updating of bird, mammal, amphibian, and reptile lists will aid management as well.

(a) **Objective**—As additional information becomes available on habitat needs of nongame species, seek to incorporate these needs into management direction as appropriate.

(b) **Objective**—Construct nature observation and educational trails and parking lots for hunter access. Sign and post existing trails, so the public can find and use them...Pine Ridge District, 5 miles construction; sign and post 10 miles on Bessey; sign and post 50 miles on Pine Ridge.

(c) **Objective**—Update and revise bird, mammal, reptile and amphibian lists.

9. **Situation**—All endangered and threatened wildlife species will be protected and their habitat enhanced to maintain present populations or increase the populations.

(a) **Objective**—Assemble master list of endangered and threatened species with their respective habitat requirements. Survey potential habitat for the presence of endangered species.

   Survey 300 acres of prairie dog towns for black-footed ferrets.

   Inventory migrant peregrine falcons and whooping cranes.

10. **Situation**—Since this is a new comprehensive cooperative wildlife plan covering the Forest Service and Nebraska Game and Parks Commission, there is a need to gain public understanding and support of its purposes and objectives. Periodic revisions will also be required of this plan in future years, and they will also require public input and evaluation.

(a) **Objective**—Acquaint the public with the Sikes Plan and the Wildlife Development Plans proposed by the Forest Service and the Nebraska Game and Parks Commission. Continued public involvement will be needed to make other revisions more meaningful. This will be done by some of the following means: (1) a fact sheet, (2) a featured article in newspapers, (3) an article in the NEBRASKAland Magazine, and (4) coverage on Game and Parks Commission programs on television and radio.

11. **Situation**—Designate certain groups of mammals and birds as Unique Species that deserve special attention and consideration in land use allocation and management decisions. All of these species are less than common on the units of the forest. Some major reasons for their status are: (1) specialized habitat requirements which are limited or are declining because of current land use practices; (2) a low level of tolerance by landowners toward them; (3) they are at the edge of their natural range or are migrating through Nebraska; (4) their interest to and use by the nonconsumptive user is high, and (5) their educational and scientific value transcends usual economic definition.

Species unique to Nebraska that are or may be found on units of the Nebraska National Forest include: Great Blue Heron, Trumpeter Swan, Elk, Prairie Dog, Sage Grouse, Burrowing Owl, Mountain Plover.

(a) **Objective**—Plant and/or protect patches of trees in the Sand Hills units for future heronries for the great blue heron. Maintain an active survey system for monitoring heron numbers, site use, and habitat status.

(b) **Objective**—Monitor elk movement and feeding patterns in the Pine Ridge to prevent damage to private property.

(c) **Objective** — Establish management guidelines for an acreage goal for prairie dogs on the Oglala National Grassland.

(d) **Objective**—Continue to check for the presence of sage grouse and mountain plover.

Where sage grouse are found, maintain and enhance sagebrush.

Where mountain plover are found nesting, maintain the shortgrass flats (no pitting).

(e) **Objective**—Monitor burrowing owl populations and prairie dog towns for determination of changes in populations and conditions of habitat.

12. **Situation**—To best carry out the provision of P.L. 93-452, relations with the Nebraska Game and Parks Commission must be coordinated and maintained, so the tenor of the existing Memorandum of Understanding and optimum wildlife resource management are implemented. The increase in wildlife coordination and development work required by this plan will necessitate additional wildlife personnel. This will impact other resource programs and require more man-days of resource coordination to carry out on-the-ground work.

(a) **Objective**—Cooperate with and provide input and recommendations to the Nebraska Game and Parks Commission in the setting of season and harvest regulations through representation (attendance) at meetings at the levels where the management decisions are made.

(b) **Objective**—Provide adequate technical expertise to carry out the demands of this and other wildlife programs in Nebraska.

13. **Situation**—The wildlife biologists and range and wildlife staff officer are responsible for training district personnel in wildlife areas. Personnel will be trained in wildlife management concepts and in those tasks of planned project work to insure quality results.

(a) **Objective**—Train district and S.O. personnel in wildlife areas so they have the necessary skills to implement this plan. Emphasis will be on-the-job training, field training sessions, and demonstration area with formal classroom instruction being used when the above methods are impractical.

14. **Situation**—Deer and antelope often feed on alfalfa and winter wheat fields over winter or congregate around haystacks during deep snow on the Pine Ridge and Oglala National Grasslands. The damage to private property and the resulting lack of landowner tolerance is the limiting factor to herd size for both of these game species.

(a) **Objective**—Investigate the feasibility of establishing alfalfa and/or winter wheat on public lands to increase carrying capacity of deer and antelope herds.

15. **Situation**—Stock ponds on the Oglala National Grasslands were constructed to provide livestock water. Because limited runoff often left some ponds dry and the accumulation of high quantities of dissolved solids and alkalinity in the water, the pipe line system of watering livestock which currently covers most of the Grasslands came into being. Consequently many ponds that were designed for livestock water are currently not needed and are unused. In some areas, livestock continue to trample the shoreline vegetation even though an existing water tank may be within a few hundred yards of the pond.

    Waterfowl, principally puddle ducks, are one of the key wildlife species on the Oglala National Grassland. The ponds are used for feeding, loafing, and brooding habitat. The quality of the ponds is largely dependent upon shoreline and emergent vegetation. The primary limiting factor to waterfowl on the Oglala National Grassland is thought to be brooding habitat, with nesting cover second. At present, the waterfowl production on the Oglala National Grasslands is estimated at 200 to 300 ducks per year.

    (a) **Objective**—Provide protection to the ponds that have been inventoried and offer good to excellent potential for waterfowl production if they are protected from livestock grazing. Some of these ponds need to be fenced, others need draglines and other improvement work. Most of these ponds are of the size and nature that will provide good to excellent brooding habitat. This increase in waterfowl habitat could result in doubling the production of waterfowl on the Oglala National Grasslands.

    (b) **Objective**—Investigate the feasibility and need for additional waterfowl ponds.

16. **Situation** – As mentioned in Number 14 above, nesting cover for waterfowl is probably the second most limiting factor on the Oglala National Grasslands. The puddle ducks, principally mallards and teal, are highly selective in the choosing a nesting site that has tall enough and dense enough residual vegetation to hide the nest and incubating hen. Vigorous growing stands of mid-grasses like western wheat and green needle are preferred nesting habitat. Waterfowl prefer to nest close to water if possible, but will go up to a mile or more if good nesting habitat is available. In some cases, present grazing management systems could be altered to enhance duck nesting cover.

(a) **Objective** – Study grazing allotments on the Oglala National Grasslands and where brooding waterfowl ponds are available, then establish grazing management systems that best contribute to their management. Proper management can yield great benefits to nesting waterfowl by allowing residual vegetation to be available for nesting. Current year's growth vegetation is not used because waterfowl nesting starts in April. As a result, the hen selects residual vegetation from the previous year.

17. **Situation** – Consumptive and nonconsumptive recreation users of wildlife on the National Forest have a continuing change in needs and values. To keep pace and provide the type and amount of recreation these people desire, a continuing survey of their wildlife values and needs is necessary.

(a) **Objective** – Periodically survey user groups of the National Forest System lands regarding their needs and values for wildlife. This survey could be done through minor modification of existing Game and Parks Commission hunter questionnaires.

18. **Situation** – Numerous species of raptors occur on the units of the Nebraska National Forest. The Pine Ridge area is particularly well-endowed with avian predators. The prairie falcon is the species of principal concern because of limited numbers nationwide and of interest in this species by falconers. Limiting habitat factors are unknown at this time. Other raptorial species of interest that nest on the Nebraska National Forest include the red-tail hawk, Swainson's hawk, golden eagle, ferruginous hawk, American kestrel, and marsh hawk. Limiting factors for the above species are unknown at this time, although nesting sites on the grasslands may be a factor.

(a) **Objective** – Investigate limiting factors to avian predators on the units of the Nebraska National Forest. This could be done by encouraging Nebraska Game and Parks Commission to initiate needed research studies. Increased observation on the part of the Forest Service personnel is also needed. Nesting holes for the prairie falcon may be a limiting factor, although it has not been proven at this time. The lack of trees on the grasslands could be a limiting factor for species like the red tail hawk, Swainson's hawk, golden eagle, and ferruginous hawk.

Intensive raptorial management may also involve increasing food sources for a nesting pair to reduce territorial competition. Possible and suitable food sources include prairie dogs, mice, and ground squirrels. Enhancement of woody draws on the grasslands will result in increased numbers of cottontails and other small mammals.

19. **Situation** – The bobcat is a common predator to the Pine Ridge and also occurs in good numbers on the Oglala National Grasslands. The recent sharp rise in bobcat fur prices has resulted in over-exploitation of this species. The bobcat is listed as a non-game species by the Nebraska Game and Parks Commmission. While it has been afforded protection through a trapping season, little or no management is given to it. This system worked for many years, but now the pelts are worth more than $200 apiece and extremely heavy hunting and trapping pressure is brought to bear on the bobcat. The Pine Ridge is thought to be nearly ideal habitat for the bobcat. Any limiting factors that may be present would be in the form of food sources like cottontails and other small mammals.

(a) **Objective** – Encourage the Nebraska Game and Parks Commission to protect and manage the bobcat as a renewable resource. Habitat enhancement for the bobcat will occur principally through the above mentioned programs where protection of the riparian and woody draw ecosystems will be done. These ecosystems will produce greatly increased numbers of cottontail rabbits and other small mammals which are the principal food sources of the bobcat.

20. **Situation**—The mourning dove is the most common game bird on the units administered as a part of the Nebraska National Forest. This species, just recently reinstated on the game list in Nebraska, is receiving only limited attention from the habitat and harvest standpoint. At the present, we do not know what limiting factors may be for dove, but in other areas of dove harvest, water and the need for weed patches and grain seeds are factors in planned management systems. Both water and feeding areas are involved principally with harvest and may not be factors on the Nebraska National Forest at this time.

(a) **Objective**—Continue to investigate and include habitat requirements of the mourning dove in other resource management programs. Some programs that are proposed elsewhere that will affect the dove include: enhancement of woody draws on the grasslands, development of water for turkeys, and modification of present water troughs to include bird ladders so doves do not drown.

PROGRAM SUMMARY FOR NEBRASKA UNDER PROVISIONS OF P.L. 93-452

PRIORITY	DESCRIPTION (Forest)	(Site)	(Job)	ESTIMATED COSTS (any year) (1976-86) Total	(FY78) First FY	Ann. maint. Oper. Cost	% COOP. PARTICIPATION (FS)	(State)	(Other)	EXPECTED ANNUAL RESULTS (Animal Pops.)	(Man/Days Rec.)	(Dollars)	REMARKS
1	Nebraska	Forest-wide	Protection of woody draws, riparian veg., shrub patches.	$375,000	$100,000	$1,000	72%	18%		Deer Nongame Game Birds	?	?	See Items 2a, b, & c in Management Plan.
2	Nebraska	Pine Ridge	Wildlife water devs.	37,500	37,500	500	90%	10%		Turkeys Deer			See Item 3 in Management Plan.
3	Nebraska	Oglala N.G.	Development and maintenance of waterfowl hab.	127,500	37,500	200	90%	10%		Water-fowl Small game Nongame birds Antelope Fur-bearers			See Items 14a & b in Management Plan.
4	Nebraska	Forest-wide	Wildlife water developments & enhancement of existing sources	9,000	9,000	500	95%	5%		Water-fowl Nongame animals & birds Turkeys Game & nongame			450 tanks @ $20.
5	Nebraska	Pine Ridge	Annual programs of prescribed burning for imp. of wildlife hab.	50,000	10,000		100%			Big game			See Item 4 of Management Plan (2,500 acres over 10-yr. period).
6	Nebraska	Soldier Creek	Stream improvement & structures.	22,500	22,500	500	100%			Trout fishery			See Item 7 of Management Plan.
7	Nebraska	Forest-wide	Develop, maintain & protect heronries.	12,000	6,000	100	100%			Great Blue herons			See Item 10a of Management Plan.
8	Nebraska	Forest-wide	Mourning dove habitat enhancement.	7,500	7,500		100%			Doves			See Item 19 of Management Plan.
9	Nebraska	Pine Ridge	Thinning ponderosa pine stands.	150,000	50,000		100%			Turkeys Deer Nongame birds & animals			See Item 5 of Management Plan.
10	Nebraska	Forest-wide	Develop w-w fisheries	10,000	10,000		90%	10%		w-w game fish			See Item 7b of Management Plan.
11	Nebraska	Forest-wide	Construct hunter access trails.	8,000	8,000	200	100%						See Item 8 of Management Plan.
12	Nebraska	Forest-wide	Admin., planning, liaison and coop. coordination of wildlife projects.	100,000	25,000		50%	50%		All Neb. species			See Item 11 of Management Plan.
				$909,000	$323,000	$3,000							