

**PRAIRIE GROUSE  
TECHNICAL COUNCIL**

**EXECUTIVE COMMITTEE**

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**PAST CONFERENCES**

- 1st, Grand Island, Nebraska ..... September 25, 26, 27, 1957  
2nd, Emporia, Kansas ..... March 16, 17, 18, 1959  
3rd, Stevens Point, Wisconsin ..... September 8, 9, 10, 1960  
4th, Pierre, South Dakota ..... September 21, 22, 1961  
5th, Nevada, Missouri ..... September 18, 19, 20, 1963  
6th, Warroad, Minnesota ..... September 14, 15, 16, 1965  
7th, Effingham, Illinois ..... September 12, 13, 14, 1967  
8th, Woodward, Oklahoma ..... September 9, 10, 11, 1969  
9th, Dickinson, North Dakota ..... September 14, 15, 16, 1971  
10th, Lamar, Colorado ..... September 5, 6, 7, 1973  
11th, Victoria, Texas ..... September 9, 10, 11, 1975

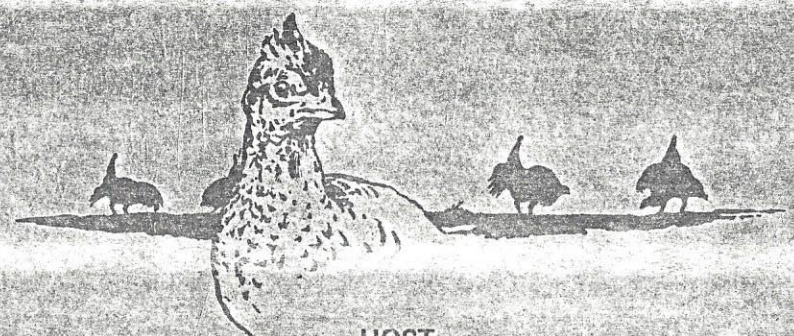
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PROCEEDINGS OF  
TWELFTH CONFERENCE

**PRAIRIE GROUSE  
TECHNICAL COUNCIL**

SEPTEMBER 13, 14, 15, 1977  
Pierre, South Dakota



HOST  
SOUTH DAKOTA DEPARTMENT OF GAME, FISH AND PARKS

PROCEEDINGS OF TWELFTH CONFERENCE  
PRAIRIE GROUSE TECHNICAL COUNCIL

September 13, 14, 15, 1977

Pierre, South Dakota

HOST

SOUTH DAKOTA DEPARTMENT OF GAME, FISH AND PARKS

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Tuesday - September 13

Welcome - Lloyd Thompson, Assistant Secretary, South Dakota  
Department of Game, Fish and Parks

Mr. Thompson cordially welcomed the delegates.

Introduction - Ronald Fowler, Game Staff Specialist  
Robert Hanten, Fisheries Staff Specialist  
James Claar, Land Staff Specialist  
South Dakota Department of Game, Fish & Parks

Staff Specialists briefly described the  
Game, Fish and Land Management conducted  
throughout the State of South Dakota.

Morning Session

AGING AND SEXING SHARPTAIL GROUSE BY PRIMARY  
MEASUREMENTS AND UPPER TAIL COVERTS

By

William Wishart

Alberta Recreation, Parks and Wildlife  
Alberta, Canada

Sexing technique that we use in Alberta (and it appears to be at least as accurate as the crown feather technique) is the difference in patterns that occur on greater upper tail coverts between males and females. The greater upper tail coverts are usually 10 to 12 in number and lie between the (uropygial) preen gland and the tail feathers (rectrices)

Generally greater upper tail coverts of males are light grey or white in color with faint vermiculations radiating away from the central shaft. The shafts on the vanes are conspicuous (usually white) and appear continuous towards the tips without interruptions from irregular mottling or barring.

Greater upper tail coverts of the females are conspicuously mottled and/or barred in brown or dark grey. Shafts of the vanes appear irregular or discontinuous due to mottling or barring. Shafts of the coverts towards the center of the tail frequently have assymetrical blotches.

The post-juvenal upper tail coverts start to appear at approximately 7 weeks of age and the sexes can be determined after about one week from covert emergence.

Adults moult their coverts about two weeks before losing their tail feathers, thus allowing a continuous period for sex identification of the tail region.

In April 1977, samples of tails, crown feathers, and upper tail coverts (sexes assigned) were given to a group of 47 biologists and technicians to test accuracy on sex identification. Results on crown feathers alone and tail coverts alone were about equal i.e. 95% and 96% in accuracy respectively. Success on tail feathers alone was somewhat less, particularly on a selected group of tail feathers with intermediate patterns, i.e., only 60% accuracy.

In recent years we have used the proximal primary technique for aging sharptails that have been trapped on dancing grounds. Separation measurements were originally taken from birds harvested in early fall when they can be easily aged by moult pattern. We were able to separate ages of both sexes with about 87% accuracy in September samples and this increased to 93% accuracy in an October sample. As juvenile primary shafts mature and harden they appear to shrink slightly so that the separation point becomes more distinct in the late fall. The latter measurements were applied to birds captured on dancing grounds in the spring.

Proximal primary calamus diameter separation point used for adult vs juvenile males was 2.47 mm and 2.41 mm for females.

By plotting P1 calamus diameters vs mid-rectrix lengths from a sample of known age birds it should now be possible to attain an aging chart with high precision for aging sharp-tailed grouse from late winter into early summer.

## STATUS OF PRAIRIE CHICKENS IN MINNESOTA

By  
Terry Wolfe  
Minnesota Department of Natural Resources  
Crookston, Minnesota

Minnesota's prairie chicken population appears stable at 1600 to 2000 breeding birds. In annual booming ground counts over the last 4 years from 781 to 875 prairie chickens have been counted on 67 to 82 booming grounds.

Management work of benefit to prairie chickens includes grassland acquisition programs by the Department of Natural Resources, (DNR), U.S. Fish and Wildlife Service (F&WS), and The Nature Conservancy (TNC), and development of this land to benefit all prairie wildlife.

A total of over 50,000 acres are now owned by public wildlife agencies and The Nature Conservancy within Minnesota's prairie chicken range.

Land management work includes burning, haying, grazing, food plots, brush control, reestablishment of native grasses and/or establishment of tame nest and brood cover on cropland.

Prairie chicken interest in Minnesota remains high.

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REPRODUCTIVE ECOLOGY OF THE GREATER PRAIRIE  
CHICKEN IN NORTHWESTERN MINNESOTA

By  
W. D. Svedarsky  
University of Minnesota  
Crookston, Minnesota

The reproductive ecology of the greater prairie chicken, with particular emphasis on nesting and brood-rearing, has been studied from April through August in 1975, 1976 and 1977. Twenty-one females have been radio-tagged during the study and monitored for an average of 57 days. Ten females were lost to predators with seven attributed to fox and three to raptors. A total of 1036 locations were recorded for the 21 females. Habitats disturbed by cultivation, grazing or burning appear to be preferred (63% of total locations) as feeding sites during egg-laying and incubation.

Thirty six nests were located with 22 nests of radio-tagged females and 14 located through the use of a cable-chain drag. Nesting success for the three years was 56% with striped skunks being the most frequent nest predator. Native prairie and brome cover types were utilized most for nesting, accounting for 16 and 8 nests respectively. Thirty-two nests were located in cover types which were undisturbed for at least one growing season prior to nesting but two nests were located in regrowth cover in areas burned the same year as nesting. The mean vegetation height around nests where 50% visual obstruction of a "Robel density pole" occurred was 2.7 decimeters. Mean canopy coverage was 59%. The mean distance from the nests to the closest booming ground or the ground of observed copulation was 1290.5 meters. Two females were radio-tagged in two subsequent years and located nests 29.8 and 4.6 meters from their successful nests of the previous year suggesting "nest site tenacity" which is little reported for galliformes in the literature. Six occurrences of renesting were observed with the mean distance between nests being 760 meters in 5 cases and 5600 meters in one extreme case where the female was nearly predated on her first nest.

Ten broods were monitored for an average of 21 days and 282 habitat usage locations were recorded which were supplemented by 26 brood observations of unradioed birds made in the course of field work. Of the total brood observations, 69% occurred in habitats that had been recently disturbed by grazing, burning, haying or cultivation. Brood mortality was very high and was attributed to heavy precipitation coupled with extensive movements occurring when chicks were less than one week old. Also, the presence of the radio transmitter on females and related researcher disturbance likely contributed to chick mortality.

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DETERMINANTS OF MATING SUCCESS IN MALE  
SHARPTAIL GROUSE (Tympanuchus phasianellus)

By  
L. Henry Kermott  
University of Minnesota  
Minneapolis, Minnesota

Possession of a central territory is usually necessary for successful reproduction by male lekking grouse. The territorial behavior of marked male Sharp-tailed Grouse was studied over a three year period to determine how central territories are obtained and defended. Males used two strategies: 1) rapidly carving out a central territory by overt aggression; 2) gradually improving territory position by filling naturally occurring vacancies toward the center over two or three years. It appears that reproductive success in male Sharptails is enhanced not only by aggressiveness and fighting ability, but also by longevity and faithfulness to the lek.

Afternoon Session

LESSER PRAIRIE CHICKEN HABITAT  
IN CHAVES COUNTY, NEW MEXICO

By  
Terry Riley  
New Mexico State University  
Las Cruces, New Mexico

The purpose of this study is to evaluate habitat use by lesser prairie chickens in eastern New Mexico. Field work has been conducted since February, 1976 and is expected to continue through May, 1978. The study area is 40 miles east of Roswell on national resource lands managed by the Bureau of Land Management. Soils are mostly sandy, and topography is rolling and dunelike. Vegetation is shrub-grassland dominated by shinnery oak (Quercus havardii), bluestems (Andropogon spp.), dropseeds (Sporobolus spp.) and three-awns (Aristida spp.).

Eight females were trapped and equipped with radio transmitters to aid in the location of nesting and brooding areas. Trapping was begun on March 15, 1976, and ten females were captured during thirty-two days of trapping. Six were captured during the first two weeks of April. All birds were captured on or near booming grounds. Vertical mist nets, inclined mist nets, drop nets, and cannon net all were used. Seven females were trapped in vertical mist nets, and three were caught in the cannon net.

The transmitter package consisting of the transmitter, battery, and harness weighs approximately 20 grams. The transmitters operate on frequencies in the 150-155 mhz range. Movements were monitored using a portable receiver and either a vehicle-mounted or hand-held yagi antenna. Two nests and one nest site which was abandoned later were located by following the radio-equipped females. Two additional nests were found while working on the area. The five nest sites were analyzed according to vegetation immediately surrounding the nest and also general vegetation within one hundred yards of the nest site. Three of the nests were in tall grasses which had received little or no grazing. The other successful nest site was located in an

area of moderate to heavy grazing. It was located in a large clump of three-awn grass, and the female was quite exposed during the entire incubation period. The nest site which was abandoned before egg-laying was in an area dominated by little bluestem and subject to light to moderate grazing. Availability of prime nesting cover in this area depends on sufficient amounts of old growth (from previous years) being present (ungrazed) when nest sites are selected in April and May. Sand and little bluestem are very important in providing nesting cover.

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USE OF HEAVILY GRAZED RANGE BY BREEDING  
LESSER PRAIRIE CHICKEN FEMALES

By  
Darwin Sell  
Texas Tech University  
Lubbock, Texas

ABSTRACT

A study was initiated in January of 1976 to evaluate movements of lesser prairie chicken females, during the spring and summer, on a heavily grazed sandyland area in West Texas. Minimum daily movements (MDM) were greatest during April while area of use (AOU) was greatest in June. Both MDM and AOU were higher during 1976 than in 1977. Nest success for 8 hens was 37.5%. Mammalian predation and desertion were the most important sources of nest failure. The incidence of shock in adult birds at time of capture was an important mortality factor during 1976, but was less evident in 1977. It appears that the higher MDM, AOU, incidence of shock, and adult mortality, along with a lower percentage of nesting hens indicate a stressful situation in 1976. Rainfall patterns, with its effect on insect and forb productivity, was more favorable in 1977, however, several factors are most likely involved in this phenomenon. Brood movement was confined to disturbed areas where insect and forb productivity are highest.

INTERACTIONS OF PHEASANTS AND  
PRAIRIE CHICKENS IN ILLINOIS

By  
Russ Vance  
Illinois Natural History Survey  
Urbana, Illinois

Interactions of pheasants and prairie chickens in Illinois.

A small population of pheasants persists in the area of the Jasper County Prairie Chicken Sanctuaries although this area is outside the contiguous range of pheasants in Illinois. Interactions known to occur between pheasants and prairie chickens on the area include the aggressive harassment of prairie chickens by cock pheasants and parasitism of prairie chicken nests by hen pheasants. Both harassment and parasitism could adversely affect small remnant populations of prairie chickens and preclude the successful reintroductions of prairie chickens in areas within pheasant range.

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RESPONSES OF PRAIRIE CHICKENS TO HABITAT  
MANIPULATION IN ILLINOIS

By  
Ron Westemeier  
Illinois Natural History Survey  
Effingham, Illinois

Responses by prairie chickens to habitat management were studied on two separate sanctuary systems in Illinois for up to 15 years (1963-77). Sanctuaries now totaling 1561 acres were gradually acquired during this period in scattered tracts in eight contiguous sections of Jasper County (1001 acres) and in four non-contiguous sections of Marion County (560 acres). These tracts were purchased by

The Nature Conservancy, the Prairie Chicken Foundation of Illinois, the Illinois Department of Conservation or private individuals on the basis of cost, availability, proximity to known prairie chicken range, and cover condition. Nearly all tracts were cropland when purchased and required establishment of grassland, primarily redtop and timothy.

A significant positive correlation was found between distance to established booming ground and number of years until occupancy of a sanctuary unit by prairie chickens. The largest management unit (232 acres) was within 0.2 mile of an established booming ground when the first purchase of 77 acres was made and contained its own booming ground within 1 year following the establishment of nest cover. At the other extreme, an 80-acre unit was 1.5 miles from the nearest booming ground and did not have a booming ground on it until 7 years after nest cover was established.

Seven sanctuary units in Jasper County have maintained an overall average of 17.7 prairie chicken cocks per 100 acres of nest cover over the last 11 years. A centrally located unit of 232 acres has maintained a mean density of 37.9 cocks per 100 acres of nest cover over the past 15 years. At its peak (1972), this unit held 72 cocks per 100 acres of nest cover--possibly the highest density ever recorded in the range of the prairie chicken. In Marion County, densities of prairie chickens on three sanctuary units have averaged 10.3 cocks per 100 acres of nest cover over the past 7 years. The overall density for sanctuary acreage in the two counties has averaged 15.6 cocks per 100 acres of nest cover over the past 15 years.

Feral and free-ranging dogs have limited population densities on several sanctuary units over the 15-year study period. Weed and brush succession dictate a management program that includes plowing and reseeding of grasses, mowing, burning, grazing, and chemical control. The most serious factors currently limiting population levels include predation on nests and increasing interactions and harassment by pheasants. The Nature Conservancy is continuing its effort to expand the sanctuary acreage in Illinois, but current prices of prairie farmland now approximating \$1600 per acre cast doubt that the goal of 3000 acres can be achieved.

EFFECT OF GRAZING SYSTEMS ON  
SHARP-TAILED GROUSE NESTING AND BROODING  
HABITAT IN SOUTHWESTERN NORTH DAKOTA

By

Samuel N. Mattese,\* Raymond L. Linder  
and Gerald D. Kobriger

South Dakota Cooperative Wildlife Research Unit  
Brookings, South Dakota, and North Dakota  
Game and Fish Department, Bismarck, North Dakota

Research was conducted to determine the effects grazing systems have on sharp-tailed grouse nesting and brooding habitat.

The study area is located in southwest North Dakota in the Little Missouri National Grasslands in northern Billings County and consisted of three allotments with a deferred pasture system and four with a season-long system.

Pastures in each allotment were cover-mapped by habitat types. Six were found to be common in most pastures. These habitat types include: rolling grasslands, upland grasslands, mesic swales, terraced areas, upland breaks and hardwood draws. Three of the six are important as sharptail habitat: rolling grasslands, upland grasslands and mesic swales.

Using the visual-obstruction pole as the measuring instrument, measurements were taken in each of the important habitat types within each allotment. Measurements were taken in late spring, summer and late fall of 1976 and in early spring of 1977.

Habitat types and areas within the habitat types in each pasture to be measured, were selected at random. From a randomly selected reference point, a transect was established on a compass bearing and 50 measurements were taken along each transect. Examples of each habitat type were not always found in each pasture, but each type was measured when available.

\*Author so marked presented paper.

Evening Session

A mixer featuring rib steaks was held from 6 PM to 10 PM.

An informal workshop on aging and sexing sharptail grouse by primary measurements and upper tail coverts was conducted by William Wishart.

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Wednesday - September 14

Morning Session

A COMPARISON OF GRASSLAND STRUCTURE  
AND PRAIRIE CHICKEN USE IN MISSOURI

By

Robert M. Skinner  
University of Missouri  
Columbia, Missouri

Prairie chicken prefer to feed and loaf in low grass cover with a light forb composition. Tall broadleaf forbs are especially important in the summer for shade. Nesting cover is only slightly more dense than feeding and loafing cover. Broods prefer cover that is undisturbed but has suffered disturbance the previous year. Prairie chicken roost in moderate to heavy grass cover.



## HABITAT MANAGEMENT ON A WISCONSIN PRAIRIE GROUSE AREA

By  
James O. Evrard  
Department of Natural Resources  
Grantsburg, Wisconsin

### ABSTRACT

Prescribed burning and summer grazing were tested for control of plant succession on the Pershing Wildlife Area in northwestern Wisconsin. Supplemental food, usually grain and greens, was provided by sharecropping and food patches. Prescribed burning created and has maintained an aspen savannah. Grazing has not controlled plant succession. Prairie grouse response to management was monitored through display ground surveys and incidental observations. Prairie chicken (Tympanuchus cupido pinnatus) have disappeared but displaying male sharptailed grouse (Pediacetes phasianellus campestris) have increased. Prescribed burning was the most effective management technique used to maintain sharptails and their habitat.

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### AVAILABILITY AND USE OF ATTWATERS GREATER PRAIRIE CHICKEN HABITAT

By  
Winifred B. Kessler  
University of Idaho  
Moscow, Idaho

Availability and use of Attwater greater prairie chicken (Tympanuchus cupido attwateri) habitat was investigated from 1974-1976 on the Attwater Prairie Chicken National Wildlife Refuge and adjacent private lands in Colorado County, Texas. Ricefield agriculture, the major land use in Attwater prairie chicken range, provided preferred summer and brood-rearing cover. The forb-dominated cover of fallow ricefields provided shade and concealment above, while permitting unrestricted prairie chicken movements at ground level. Fallow fields treated with

herbicides to accelerate grass establishment retained effective forb canopies in spite of decreased forb densities. Chi-square analysis of cover availability and use indicated that treated and untreated fallow ricefields, of various fallow stages, were used in proportion to availability.

Concentration of prairie chickens onto refuge coastal prairie occurred in fall and winter, when grazed bunchgrass cover was needed for concealment and protection from adverse weather. Ungrazed pastures were not used, and were characterized by deteriorating range condition. Prairie chickens responded immediately to prescribed burning and mowing treatments applied to coastal prairie vegetation during fall and winter. Feeding use occurred throughout the winter and was greatest on fall-burned plots. Primary use of mowed plots was for booming. By mid-May, regrowth on treated plots was sufficient for concealment and escape cover, and was used by Attwater prairie chickens for day and night roosting. Burning, and to a lesser extent mowing, provided the high forb densities and reduced litter accumulation characteristic of preferred summer cover.

Observation of Attwater prairie chicken reproductive behavior revealed that ricefield booming grounds lack the stable social structure typical of ancestral coastal prairie booming grounds. Spring flooding is a major cause of nest destruction for Attwater prairie chickens nesting in fallow ricefields. Microhistological analysis of fecal material showed that Attwater prairie chickens make heavy use of agricultural crops, primarily peanuts, during fall.

The diversity of cover required by Attwater prairie chickens was provided on a year-round basis by the combination of refuge coastal prairie and surrounding agricultural lands. In view of changing land use practices on private lands, recommendations were made for manipulating prairie vegetation to create and maintain the necessary cover diversity within refuge boundaries.

VEGETATION PREFERENCES OF ATTWATERS  
PRAIRIE CHICKEN IN GULF COASTAL PRAIRIE

By  
Virginia F. Cogar, John D. Horkel  
and Nova J. Silvy\*  
Texas A&M University  
College Station, Texas

Between February 1975 and June 1977 a total of 5302 observations of Attwater's prairie chicken (Tympanuchus cupido attwateri) activities was made. This included 3698 booming ground sightings, 1170 individual sightings, 19 nest locations, 16 brood observations, and 399 roost forms. These data were analyzed according to vegetation type usage. Observations indicated that the birds extensively utilized four of eight major vegetation types plus artificially-maintained areas of the study area. Of the major vegetation types, the clumped midgrass received the greatest use (88 percent). Vegetation type usage correlated with vegetation visual obstruction and height measurements. Juxtaposition of utilized vegetation types plus soil moisture also influenced chicken use of areas. The maintenance of proper density and height of native grassland appears to be important in preserving Attwater's prairie chicken populations.

\*Author so marked presented paper.

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PRAIRIE CHICKEN REINTRODUCTION PROGRAM  
IN NORTHWESTERN WISCONSIN

By  
John E. Toepfer  
University of Wisconsin  
Stevens Point, Wisconsin

In an effort to reestablish a greater prairie chicken (Tympanuchus cupido) population, 225 immature pen-reared birds (116 cocks, 109 hens) and 31 wild birds (19 cocks,

12 hens) were released in northwestern Wisconsin on the 30,000 acre Crex Meadows Wildlife Area between September, 1974 and September, 1976.

Six separate releases were made during the two year period. Pen-reared: (1) October, 1974, 16 cocks, (2) April, 1975, 51 (36 cocks, 15 hens), (3) August, 1975, 28 (2 cocks, 26 hens), (4) September, 1975, 12 cocks, (5) April 21, 1976, 127 (50 cocks, 77 hens). Wild Wisconsin birds: (6) April 11-14, 1976, 31 (19 cocks, 12 hens).

Fifty-five pen-reared and 14 wild birds were radio-tagged to study movements, survival and reproductive success.

All of the radio-tagged pen-reared birds remained within a mile of their release site.

Six of the seven radio-tagged wild cocks established new ranges within a mile of their release sites. Two of these cocks wandered 4.5 and 8.2 miles away before returning to the release area. Nine of the twelve non-radioed wild cocks were observed displaying in the release area at least once during April and May, 1976. One wild Wisconsin radio-tagged hen established and nested in the release area. The other six hens moved 3.6, 3.8, 8.2, 10, 15 and 35 miles from the release area. Most of the wild hens wandered for several weeks making daily moves that at times exceeded 10 miles.

Three of the 10 radio-tagged pen-reared hens established 4 nests. None of these nests were successful. Four of the seven wild radio-tagged Wisconsin hens established 5, possibly 6, nests. One of the nests was successful, hatching 12, of 13 eggs. There were at least 4 broods totaling 26 chicks observed; two wild hens produced at least 19 of the 26 chicks. None of the pen-reared hens were believed to have produced chicks.

None of the 55 radio-tagged pen-reared birds lived longer than 120 days, 90% were dead within 31 days. Predators appeared to have been responsible for most of the losses.

Two of the seven radio-tagged wild hens survived at least 150 days. The remaining five were fed upon by predators 11, 15, 34, 90 and 95 days after their release.

A spring census in 1977 indicated that there were at least 16 displaying cocks on 4 booming grounds at Crex; six of 16 cocks were banded transplanted wild cocks, two were unidentified and one was pen-reared. Estimated annual survival of wild and pen-reared cocks was 36% and 2%, respectively.

This past April, (1977) the Crex population was supplemented with 19 wild hens trapped in western Minnesota. Two of ten radio-tagged hens successfully nested in the release area.

In addition, 18 wild Minnesota cocks were radio-tagged and released in place. Ten of the cocks were recaptured by nightlighting and transplanted to Crex during the summer. After three weeks the six radio-tagged birds appear to have established new ranges in the release area.

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#### PRAIRIE PRESERVATION: A SALVATION FOR THE GREATER PRAIRIE CHICKEN IN MISSOURI

By  
Donald M. Christisen  
Missouri Department of Conservation  
Columbia, Missouri

Native tall grass prairie once comprised about 15 million acres (40%) of Missouri prior to settlement and habitat for thousands of greater prairie chickens. Settlement brought market hunting, sport hunting and conversion of prairie to pasture and cropland. Only a few thousand birds remained when the hunting season was closed in 1906. The population in 1934 was estimated to be 5110 birds and in 1977 the booming ground census was 8000 birds. The range shrank from 2500 square miles in the 1940's to 900 square miles by mid-1950's.

Several thousand acres of native tall grass prairie form a frail framework for prairie chicken habitat in southwest Missouri. Conversion of native prairie to cash crops and tall fescue has continued at a rapid rate. A cooperative effort by the Department of Conservation, Nature Conservancy and the Missouri Prairie Foundation has brought 21 tracts into public ownership giving protection to 5500 acres of native tall grass prairies. These prairies represent about 13 localities. All have some potential for prairie chickens as eight localities support resident flocks. It is hoped each of these prairies will become a pivotal area for a flock of prairie chickens and give stability to local populations. Taberville Prairie, a 1680 acre preserve under management has been a success with up to 69 cocks per square mile thereby influencing the population density in a 16 square mile area.

Studies in Missouri indicate that nothing less than 160 acres of grassland be acquired to furnish nest-brood cover in support of a small booming ground. Nest and roost cover should be located within  $\frac{1}{4}$  mile of the booming ground to be functional. A refuge should not be less than 640 acres if it were to support prairie chickens independently of adjacent land in summer.

Public ownership of a network of native prairies under protective management offers the best potential for survival of this rare bird in Missouri.

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#### HISTORY AND MANAGEMENT OF THE FORT PIERRE NATIONAL GRASSLANDS

By  
David V. Sanford  
United States Forest Service  
Pierre, South Dakota

Two main factors led to the establishment of the National Grasslands - The way God made the land and the way man used it. Nature decreed the geography and climate in which grass dominates the pattern of life. This is

particularly true where National Grasslands are located. The plains settlers took the land and used it in ways not always best suited for himself or the land. Attempts to correct mistakes led to land use adjustments, and these led to the National Grasslands.

Today there are 19 National Grasslands located in eleven western states. These public lands, once severely eroded farmland, have been rehabilitated and are once again in grass as nature intended. They are managed as part of the National Forest System under the principle of multiple use. The major use up until the present has been the grazing of livestock. Other uses such as wildlife and recreation have been spin-off benefits of good range management.

Recently, the Forest Service in Region 2 has begun to operate under the key values principle of management. This concept provides an overriding purpose to guide all management throughout a geographic area by identifying certain resources as "Key values". That is, by social perception of the area, certain resource importance is related to their ability to contribute to specific social-economic needs.

The Key values of the Fort Pierre National Grassland have been identified as wildlife and range. In the future, the reason for any action taken on the ground will be to enhance or maintain the key values, and that any other resource outputs attained will be the result of secondary spinoffs resulting from those actions.

EVALUATION OF FT. PIERRE NATIONAL GRASSLAND  
GRAZING SYSTEMS AS THEY AFFECT  
PRAIRIE CHICKEN POPULATIONS

By

Leslie A. Rice

South Dakota Department Game, Fish and Parks  
Rapid City, South Dakota

Comparisons between rest- and deferred rotation grazing systems for prairie chicken nest site locations have been made since 1974 on the Fort Pierre National Grasslands. Approximately 75 percent more nests were located in rest-rotation pastures. This was probably due to availability of more desirable nesting cover. Rest rotation pastures produced 800-1000 pounds of forage per acre at nesting initiation while deferred-rotation produced 500-700 pounds. Nesting for sharptail grouse and waterfowl showed similar results.

Nest site location for prairie chickens was primarily on rolling range sites on north or east facing slopes. Western wheat grass and green needle grass were the preferred vegetation at nest sites. Nesting success averaged over 70 percent since 1974.

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Afternoon Session

FIELD TRIP

1:30 PM - A field trip to the Fort Pierre National Grasslands was conducted. Visitations were made on two study areas containing rest-rotation, deferred rotation, and Richland Wildlife pastures. Return time was approximately 6:00 PM.

Another informal workshop was held Wednesday evening on aging and sexing sharptail grouse by primary measurements and upper tail coverts.

PRAIRIE GROUSE TECHNICAL COUNCIL

Business Meeting

September 15, 1977  
Leslie A. Rice, Chairman

1. The first item of business was deciding the host state and chairman for the 1979 meeting. Invitations were extended by: Jerry Horak, Kansas; Ray Anderson, Wisconsin; Ken Robertson, Nebraska; and Paul Vohs, Oklahoma. There was very limited discussion on the various sites and the resulting vote awarded the meeting to Wisconsin, with Ray Anderson serving as chairman.
2. Paul Vohs, Oklahoma Coop. Wildl. Unit, suggested having a Prairie Grouse Symposium at the OSU campus about three years hence. The attendees were in favor of such a meeting and gave their go-ahead to Vohs to proceed with such a meeting. The new secretary of PGTC will provide a current mailing list.
3. Committee Reports

Bibliography Committee--

Fred Hamerstrom reported that the bibliography committee was in a state of limbo. Support from Ontario for publication of a bibliography is gone and there is little hope that the University of Wisconsin will do it. Hamerstrom suggested using the bibliographies that are out now.

Map Committee--

Robertson reported for the committee in charge of preparing a range and density map. The maps are prepared and will be mailed out soon to the current membership.

Action Committee--

Les Rice explained the formation and proposed function of the Action Committee as originally proposed at the last meeting at Victoria, Texas, however he requested more direction from the entire membership. Rice mentioned that he had appointed regional representatives to

the Committee who were collecting information from members of the PGTC in their areas with Rice making the final compilation. Chairman Rice wanted direction from the group how the information should be compiled and what type of publication should result. Doug West, USF&WS, reported that Federal Aid would lend their moral support to the group for a publication on prairie grouse and would be able to help with funding as it would involve non-game, endangered species, an information source to Federal Aid projects such as set-aside, land management and stocking, and although prairie grouse management is a State responsibility they do have national significance. West also showed an example of converting a sound slide series to 16 mm film, at very low cost, and suggested this as a possibility for the Council.

Terry Riley suggested that the current chairman retain an updated file of the membership to refer requests for information since publications become obsolete too fast.

Hamerstrom pointed out that such a publication was first talked about when this group was first formed under the National Wildlife Federation. Fran H. thought this publication could explain past misconceptions and squash theories about hunting exterminating prairie grouse species.

Riley moved, seconded by Horak, that the Action Committee chairman get input from each State and Province with committee members compiling the data on a regional basis with a final combination of regional data to form the basis of the final product. The committee chairman would determine the basic format for information and the contributing States could fill in the data. The motion carried. Rice announced that the present committee will continue as is to draw up design and general format and Rice will send a letter out to committee members with his direction for action.

4. The Wildlife Management Institute informed the Council of a National Coalition for Non-Game Fish and Wildlife Conservation and asked the Council to join. It was felt by the attending membership that since no non-game species are represented by our group that we not become involved with the Coalition. Fran H. moved, Riley seconded, to table action on the letter and the motion carried. Rice will draft a letter to WMI to that effect.
5. Rice suggested that copies of papers presented at our meetings be made available to attending members.
6. Silvy voiced concern about people being left off the mailing list for newsletters. Rice will send out a letter to update the mailing list within the next few months.
7. Rice called for a meeting of the Action Committee following the general business meeting.

Meeting was adjourned at 11:00 AM.

Minutes submitted by,  
Jerry Kobriger, Secretary

#### ATTENDANCE LIST

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