Prairie Grouse Technical Council Conferences

1st	Grand Island, Nebraska	September 1957
2nd	Emporia, Kansas	March 1959
3rd	Stevens Point, Wisconsin	September 1960
4th	Pierre, South Dakota	September 1961
5th	Nevada, Missouri	September 1963
6th	Warroad, Minnesota	September 1965
7th	Effingham, Illinois	September 1967
8th	Woodward, Oklahoma	September 1969
9th	Dickinson, North Dakota	September 1971
10th	Lamar, Colorado	September 1973
11th	Victoria, Texas	September 1975
12th	Pierre, South Dakota	September 1977
13th	Wisconsin Rapids, Wisconsin	September 1979
14th	Halsey, Nebraska	September 1981
15th	Emporia, Kansas	September 1983
16th	Sedalia, Missouri	September 1985
17th	Crookston, Minnesota	September 1987
18th	Escanaba, Michigan	September 1989
19th	Billings, Montana	September 1991
20th	Fort Collins, Colorado	July 1993
21st	Medora, North Dakota	August 1995
22nd	College Station, Texas	February 1998

Prairie Grouse Technical Council

22nd International Meeting

George Bush Presidential Library
College Station, Texas
4-7 February 1998

Sponsors:

Rob & Bessie Welder Wildlife Foundation
P.O. Drawer 1400
Sinton, Texas 78387-1400

Department of Wildlife & Fisheries Sciences
210 Nagle Hall
Texas A&M University
College Station, Texas 77843-2258

Wednesday Night, 4 February 1998
Brazos Center

6:00 Buses depart Hampton Inn for Brazos Center

6-9:30 Flock aggregation for shrimp boil

9:30 Buses depart Brazos Center for Hampton Inn

Thursday, 5 February 1998
Bush Presidential Conference Center

8:30 am Buses depart for Bush Conference Center

8:30 am Registration

9:00 am Welcoming comments
Nova Silvy (WFSC), Robert Brown (WFSC), Markus Peterson (TPWD)

Session I: Prairie Grouse Status
Moderator: Markus Peterson

9:15 am **Distribution and Status of Sharp-tailed Grouse in Washington**
Michael A. Schroeder

9:30 am **Status of the Lesser Prairie Chicken in Texas**
John P. Hughes

9:45 am **History of Spring Sharp-tailed Grouse Dancing Ground Census in North Dakota**
Jerry D. Kobriger

10:00 am **Status of Greater Prairie Chicken in Wisconsin**
James R. Keir

10:15 am **Status of Attwater's Prairie Chicken**
Markus J. Peterson

10:30 am Break

Session II: Reintroduction
Moderator: Daniel Svedarsky

11:00 am **Feasibility Study: Reintroduction of Greater Prairie Chicken into Southwestern Minnesota**
Sharry McDonald, Steve Merchant, Richard Kimmel, Joel Anderson

11:15 am **Supplemental Stocking of Attwater's Prairie Chicken on the Attwater Prairie Chicken National Wildlife Refuge**
Mitchell A. Lockwood, Michael E. Morrow, Clifton P. Griffin, Nova J. Silvy

11:30 am **Attwater's Prairie Chicken on the Edge: Galveston County, Texas**
James F. Bergan, Terry L. Cook, David C. Wolfe

11:45 am **Small Numbers, Isolation, Fitness Loss, and Genetics of Prairie Chickens**
Ronald L. Westemeier, Jeffery D. Brawn, Scott A. Simpson, Terry L. Esker, Roger W. Jansen, Juan L. Bouzat, Kenneth N. Paige

12:00 pm Lunch at Bush Conference Center

Session III: Habitat and Use
Moderator: Randy Rogers

1:30 pm **Habitat Use and Movements of a Fragmented Population of Northern Sage Grouse in Northwestern Colorado**
Christian A. Hagen, Richard K. Baydack, Clait E. Braun, Norm C. Kenkel, Donald A. Sexton

1:45 pm **Nesting and Brood Rearing Ecology of Plains Sharp-tailed Grouse in a Mixed-Grass/Fescue Ecoregion of Southern Alberta**
Shane J. Roersma, Richard K. Baydack, Bryan Millar, Donald A. Sexton

2:00 pm **Vegetation Around Lesser Prairie Chicken Nests in Southwest Kansas**
Thomas L. Walker Jr., Brent E. Jamison, Robert J. Robel

2:15 pm **GIS Analysis of Coarse-Scale Attributes of Lesser Prairie Chicken Habitat in the Texas Panhandle**
X. Wu, Nova J. Silvy, Fred E. Smeins, Robert C. Maggio, Markus J. Peterson, John P. Hughes

2:30 pm **Identifying and Modeling Wisconsin Prairie Grouse Habitat Using Remote Sensing and GIS**
Neal D. Niemuth

2:45 pm **A Preliminary Look at Prairie Chickens and Grasslands: 2000 and Beyond, the First Year**
John E. Toepfer

3:00 pm Tour Bush Library / Tour Texas A&M University captive breeding facility

5:00 pm Buses depart for Hampton Inn
Dinner on your own

Friday, 6 February 1998
Bush Presidential Conference Center

8:30 am Buses depart for Bush Conference Center

Session IV: Management
Moderator: Terry Riley

9:00 am **Multistate Efforts to Improve Lesser Prairie Chicken Populations**
Roger Applegate, Barry Hale, Russ Horton, Kevin Mote, Judy Sheppard

9:15 am **Managing Habitats for Sharp-tailed Grouse on Private Lands in Manitoba, Using Principles of Adaptive Resource Management and a Partnership Approach**
Richard K Baydack, Donald A. Sexton

9:30 am **CRP Opportunities for Prairie Grouse in Minnesota**
W. Daniel Svedarsky, John E. Toepfer, Fred Kollmann, William E. Berg

9:45 am **Harvest of Columbian Sharp-tailed Grouse in Colorado: Analysis and Implications for Management**
Kenneth M. Giesen

10:00 am **Hunter Participation in Upland Game Bird Cycles**
Garth W. Ball

10:15 am Break

Session V: Techniques
Moderator: Jerry Kobriger

11:00 am **Radio Tracking Greater Prairie Chicken in the Tallgrass Prairie Region of Oklahoma: First Year's Progress Report**
Donald H. Wolfe, David A. Wiedenfeld, Steve K. Sherrod

11:15 am **Genetic Management of Illinois Prairie Chickens**
Scott A. Simpson, Terry L. Esker

11:30 am **Lek Counts as Indices to Greater Prairie Chicken Populations**
Kelly S. Cartwright, Robert J. Robel

11:45 am Lunch at Bush Conference Center

Session VI: Limiting Factors
Moderator: Mark Drew

1:30 pm **Invertebrate Characteristics of Lesser Prairie Chicken Habitats in Southwest Kansas**
Brent E. Jamison, Thomas L. Walker Jr., Robert J. Robel

1:45 pm **Parasites of Lesser Prairie Chicken, Ring-necked Pheasant and Northern Bobwhite in Southwest Kansas**
Thomas L. Walker, Jr., Robert K. Ridley, Brent E. Jamison, Robert J. Robel

2:00 pm **Northern Bobwhite as Disease Indicators for the Endangered Attwater's Prairie Chicken**
Jon R. Purvis, Markus J. Peterson, Norman O. Dronen, Nova J. Silvy

2:15 pm **Effects of Reticuloendotheliosis Virus on Attwater's Prairie Chicken Recovery Efforts**
Clifton P. Griffin, Mark L. Drew, Mitchell A. Lockwood, Nova J. Silvy

2:30 pm Business Meeting

3:30 pm Tour of Texas A&M University captive breeding facility /
Tour George Bush Library

6:00 pm Texas-style Banquet / Bar-B-Que at Bush Conference Center

Saturday, 7 February 1998

8:00 am Buses depart for Attwater Prairie Chicken National Wildlife Refuge (APCNWR)

10:00 am Arrive APCNWR - break

10:30 am Tour APCNWR

12:00 pm Lunch at APCNWR

1:30 pm Tour APCNWR

3:00 pm Buses depart for College Station

5:00 pm Arrive in College Station / Flock break up and return to native display grounds.

MULTISTATE EFFORTS TO IMPROVE LESSER PRAIRIE CHICKEN POPULATIONS

ROGER APPLEGATE, Kansas Department of Wildlife & Parks, PO Box 1525, Emporia, KS 66801-1525
BARRY HALE, New Mexico Department of Game and Fish, PO Box 25112, Santa Fe, NM 87054
RUSS HORTON, Oklahoma Department of Wildlife Conservation, Route 2, Box 238, Norman, OK 73071
KEVIN MOTE, Texas Parks and Wildlife Department, PO Box 659, Canyon, TX 79015
JUDY SHEPPARD, Colorado Division of Wildlife, 6060 Broadway, Denver, CO 80216

Abstract: We will discuss the goals, objectives, strategies and actions of the Lesser Prairie Chicken Interstate Working Group (LPCIWG). The LPCIWG was formed in August 1996 in response to the range-wide decline of lesser prairie chicken (Tympanuchus pallidicinctus). The LPCIWG, working with federal land management agencies, university faculty, and other partners, has prepared an assessment and conservation strategy for lesser prairie chickens which defines goals, objectives, and actions for lesser prairie chicken population recovery. Many of our objectives have already been met or are being implemented.

HUNTER PARTICIPATION IN UPLAND GAME BIRD CYCLES

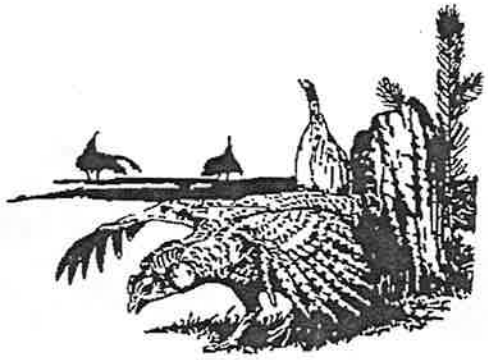
GARTH W. BALL, Wildlife Branch, Manitoba DNR, Box 24, 200 Saulteaux Crescent, Winnipeg, MB R3J 3W3

Abstract: The Manitoba Wildlife Branch has periodically conducted game bird spring surveys for more than 60 years. During the past 30 years the cycle of peaks in upland game populations was determined. Prior to 1966, a Provincial Game Bird License (GBL) was required to hunt both upland and migratory game birds. Beginning in 1966, hunters were required to purchase both a Federal Migratory Game Bird Permit (MGBP) and a GBL to hunt migratory game birds; however, only a GBL was required to hunt upland game birds. Intuitively, GBL sales minus MGBP sales would provide the number of dedicated upland game bird hunters. Since 1966, annual numbers of dedicated upland game bird hunters have reflected upland game bird populations. Hunter participation appears to be responding to an increased opportunity for success during high grouse populations, while at low populations many hunters do not purchase licenses. Classically, hunters in the field increased and decreased dependent on prey (grouse) availability.

MANAGING HABITATS FOR SHARP-TAILED GROUSE ON PRIVATE LANDS IN MANITOBA, USING PRINCIPLES OF ADAPTIVE RESOURCE MANAGEMENT AND A PARTNERSHIP APPROACH

RICHARD K BAYDACK, Natural Resources Institute, University of Manitoba, Winnipeg, MB R3T 2N2 Canada
DONALD A. SEXTON, Ducks Unlimited Canada, P.O. Box 1160, Stonewall, MB R0C 2Z0 Canada

Abstract: Private lands in Manitoba's agricultural zone generally contain the remaining habitat areas for sharp-tailed grouse in the southern part of the province. Much of this land has been changed through agricultural activities, resulting in fragments of sharptail habitat interspersed with cropland and other intensive farming operations. Habitat alteration has resulted in a reduction in suitable sites for nesting and brood rearing for sharp-tailed grouse, and restricted activities for many other wildlife species. The concept of adaptive resource management (ARM) has been applied to this complex mixture of habitat conditions in conjunction with a Private Lands Management Program coordinated by the Sharptails Plus Foundation, a non-government organization. Other organizations (e.g., Ducks Unlimited Canada) are partners in order to increase the extent and exposure of these sustainable practices to benefit a greater variety of wildlife. The Program is designed to assist landowners by suggesting modifications to their farming practices which are sustainable, to improve farm profitability while also enhancing habitat for wildlife. Program delivery includes direct and indirect extension methods. Landowners are encouraged to treat each farm management decision as a management experiment, to hypothesize possible outcomes of their decision, and finally to use the results of past decisions to improve future management performance. Economists are predicting that recent changes in Canadian grain transportation policies will shift cropped marginal land to forage and livestock production, thus giving the Program even greater opportunities to influence land use to benefit wildlife.



ATTWATER'S PRAIRIE CHICKEN ON THE EDGE: GALVESTON COUNTY, TEXAS

JAMES F. BERGAN, The Nature Conservancy of Texas, P.O. Box 163, Collegeport, TX 77428-0163
TERRY L. COOK, The Nature Conservancy of Texas, P.O. Box 1440, San Antonio, TX 78295-1440
DAVID C. WOLFE, The Nature Conservancy of Texas, P.O. Box 1440, San Antonio, TX 78295-1440

Abstract: The Attwater's prairie chicken (APC; Tympanuchus cupido attwateri) has persisted in southern Galveston County, Texas despite a severe loss of coastal prairie habitat and degraded state of remaining grasslands. Historically, up to 332 prairie chicken have been reported for the entire county. The population ($n = 22$) is now restricted to a 2,273 acre tract of land known as the Galveston Bay Prairie Preserve, owned and managed by The Nature Conservancy of Texas. Overgrazing, Chinese tallow (Sapium sebiferum) infestation, woody brush encroachment, lack of proper fire management, introduction of tame pasture grasses, imported red fire ants (Solenopsis invicta), and urban sprawl have all acted to impact this population. Supplemental releases of APC have taken place in late summer of 1996 ($n = 19$) and 1997 ($n = 18$). Survival estimates have been surprisingly high. Seven months following release of birds in 1996, the survival estimate was 42%. Through December 1997, 10 birds are being radio-tracked with 3 confirmed mortalities ($s = 55\%$). One bird experienced a failed radio. The status of the remaining 4 birds is unknown. Presently, stewardship priorities include: 1) working with the APC Recovery Team to ensure persistence of the native genetic reservoir through supplemental releases, 2) implement proactive exotic brush control program to eradicate Chinese tallow trees, 3) reintroduce fire to ensure continued woody brush suppression and maximize restoration potential of the site, 4) modify grazing management to allow longer deferments, better grazing distribution, and recovery of overgrazed, species-poor areas, and 5) design a vegetation monitoring system which will quantify habitat restoration efforts.

LEK COUNTS AS INDICES TO GREATER PRAIRIE CHICKEN POPULATIONS

KELLY S. CARTWRIGHT, Division of Biology, Kansas State University, Manhattan, KS, 66506
ROBERT J. ROBEL, Division of Biology, Kansas State University, Manhattan, KS, 66506

Abstract: Spring lek counts of greater prairie chickens (Tympanuchus cupido pinnatus) have been used as population indices in 28 counties in eastern Kansas since 1965. The counts are designed to record peak numbers of lekking birds. They are conducted from 40 minutes before to 90 minutes after sunrise between March 20 and April 20, and when wind speed is under 12 mph. Declines in the rangewide index have occurred since the lek counts were initiated. The goals of this study are to (1) evaluate landscape changes along lek routes, (2) determine if landuse changes have occurred along routes, (3) identify possible changes in lek count methodology, and (4) analyze temporal changes in lek attendance. Seven routes have been selected for evaluation of landscape, landuse, and survey methodology changes. Three leks along the Pottawattomie County route have been chosen for evaluation of lek attendance changes. Preliminary analysis of the Pottawattomie County route data does not show many significant landscape changes. Data on landuse changes are being collected. Starting time (minutes before snrise) and finishing time (minutes after sunrise) of the lek counts have varied widely since 1965. The average starting time was 31 minutes before sunrise (S.D. = 20 minutes; range 75 minutes before to 29 minutes after sunrise). The average finishing time was 82 minutes after sunrise (S.D. = 26 minutes; range 33 - 165 minutes after sunrise). The mean date of the survey has not changed significantly over the years. In terms of lek attendance changes, differences were observed with respect to date and time after sunrise.

HARVEST OF COLUMBIAN SHARP-TAILED GROUSE IN COLORADO: ANALYSIS AND IMPLICATIONS FOR MANAGEMENT

KENNETH M. GIESEN, Colorado Division of Wildlife, 317 W. Prospect Road, Fort Collins, CO 80526

Abstract: Indices of total harvest, timing of harvest, production (juveniles/adult), and time of hatch were estimated from Columbian sharp-tailed grouse (Tympanuchus phasianellus columbianus) wings collected annually in Colorado during the 1981-97 hunting seasons. During this period season length varied from 16 to 34 days. Most (79%) harvest occurred on weekends, and few (6.5%) hunters achieved a daily 3-bird bag limit. Total harvest declined with season length ($r = -0.341$). The percentage of juveniles in the harvest averaged 56.3% (range = 41.5-74.2) and was inversely correlated with total harvest ($r = -0.226$). The median hatch date of juveniles in the harvest was 20 June (range = 8 June-27 June). Only 4.8% of chicks hatched after 7 July. Few (6.3%) chicks were <10 weeks-of-age and only 2.1% were <9 weeks-of-age when harvested (chicks 10 weeks of age are 80% of adult body mass). Increasing season lengths could provide additional recreational opportunity for hunters without negatively impacting populations of Columbian sharp-tailed grouse in Colorado.

EFFECTS OF RETICULOENDOTHELIOSIS VIRUS ON ATTWATER'S PRAIRIE CHICKEN RECOVERY EFFORTS

CLIFTON GRIFFIN, Department of Wildlife and Fisheries Sciences, Texas A&M University, College Station, Texas 77843
MARK DREW, Department of Large Animal Medicine and Surgery, Texas A&M University, College Station, Texas 77843
MITCH LOCKWOOD, Department of Wildlife and Fisheries Sciences, Texas A&M University, College Station, Texas 77843
NOVA SILVY, Department of Wildlife and Fisheries Sciences, Texas A&M University, College Station, Texas 77843

Abstract: In 1991, a captive propagation program was started for prairie chickens at Texas A&M University (TAMU) using wild-caught greater prairie chicken (GPC; Tympanuchus cupido pinnatus). Eggs from nests of wild Attwater's prairie chicken (APC; T. cupido attwateri) were collected in April 1994 to create a breeding flock of this endangered subspecies. Similar sites have been established at Houston Zoological Gardens, San Antonio Zoo, and Fossil Rim Wildlife Center. Also, a remote temporary storage pen was established at Kingsville, Texas. During fall 1994, reticulo-endotheliosis virus (REV) was discovered at the TAMU site in tumors from the face and feet of 2 adult GPC. By using polymerase chain reaction (PCR) and virus isolation, we subsequently discovered that 75% of the captive flock was infected. Following REV detection, birds were screened periodically for evidence of viremia and antibody presence. Initial implications of REV at TAMU included implementing periodic testing, along with selective culling of GPC and indoor isolation of viremic APC. All of these methods were used to control disease prevalence. No vertical transmission was noted in APC offspring at TAMU from positive adults during the 1995, 1996 or 1997 breeding seasons. However, 3 APC and 6 PC in outdoor pens were PCR positive in November of 1995, but no additional known REV outbreaks have occurred at TAMU. Further implications of REV infection in a captive flock are varied and include increasing bird susceptibility to secondary diseases and increasing stress incurred by captive birds, along with decreasing reproductive output. Furthermore, 3 other captive facilities had outbreaks of REV during winter 1996-97. As a result, all positive birds were transferred to TAMU to establish a primary quarantine location. There have been no known occurrences of REV in non-quarantined birds since spring 1997, but REV has dramatically influenced these facilities as production sites of APC to be released. If wild populations are to be bolstered by captive birds, screening procedures for REV may be necessary to prevent infection of those groups.

HABITAT USE AND MOVEMENTS OF A FRAGMENTED POPULATION OF NORTHERN SAGE GROUSE IN NORTHWESTERN COLORADO

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RICHARD BAYDACK, Natural Resources Institute, University of Manitoba, Winnipeg, MB, R3T 2N2, Canada.
CLAIT E. BRAUN, Colorado Division of Wildlife, 317 W. Prospect Rd. Fort Collins, CO, 80526.
NORM C. KENKEL, University of Manitoba, Winnipeg, MB, R3T 2N2, Canada.
DON SEXTON, Ducks Unlimited Canada, Oak Hammock Marsh Conservation Centre, P.O. Box 1160, Stonewall, MB, R0C 2ZO, Canada.

Abstract: Historically, northern sage grouse (Centrocercus urophasianus) occurred in Colorado throughout sagebrush (Artemisia tridentata) steppe habitats that were north of the Colorado River. Large expanses of these habitats have been altered with the advent of grazing, agriculture, mineral exploration, and other human developments. Sage grouse populations have responded negatively to these alterations, as the population has declined since the 1950's. Currently, sage grouse populations are stable (>500 birds) in 5 counties and marginal (<500 birds) in another 10 counties. Marginal populations can occur in fragmented habitats. In 1997, an isolated population of northern sage grouse was studied to evaluate habitat use and seasonal movements within a fragmented landscape. Thirteen male and 10 female grouse were fitted with radio transmitters in Piceance Basin, Rio Blanco County. Subsequent locations of radio-marked grouse indicated that male grouse (n=9) traveled up to 24-km from leks to summer use areas, while the average was 11.3-km. Male movements from summer to wintering areas were 6.6-km. Nesting hens (n=5) were located, on average, 1.2-km from the nearest lek. Brood hens (n=3) remained within 0.5-km of the nest. One successful hen traveled 8-km to the same summer use area as the males. Hen movements from summer to winter habitats were 4-km. Sage grouse used a "mixed" shrub habitat comprised of mountain big sagebrush (A.t. tridentata), serviceberry (Amelanchier spp.), and antelope bitterbrush (Purshia tridentata) from March - May. Mountain big sagebrush was utilized from June - December. Identifying critical habitats in the Piceance Basin is imperative to maintaining the future of sage grouse in this unique region.

STATUS OF THE LESSER PRAIRIE CHICKEN IN TEXAS

JOHN P. HUGHES, Texas Parks and Wildlife Department, Canadian, TX

Abstract: Population trends for lesser prairie chicken (Tympanuchus pallidicinctus) in the Texas panhandle were analyzed for the period 1942 - 1997 using both average number of males per lek and lek per unit area data. Average number of males per lek for the northeastern panhandle (panhandle) population increased slightly for the period 1942 - 1997 ($R^2 = 0.14$, $P < 0.05$), but declined significantly for the period 1988 - 1997 ($R^2 = 0.72$, $P < 0.05$). Average number of males per lek for the southwestern Panhandle (Permian Basin) population declined significantly during 1969 - 1997 ($R^2 = 0.51$, $P < 0.0001$) and 1988 - 1997 ($R^2 = 0.46$, $P < 0.05$). The number of leks per 100 hectares (ha) for the Panhandle population increased slightly during the period 1942 - 1986 for both sandsage/midgrass ($R^2 = 0.16$, $P < 0.05$) and shinnery oak/midgrass ($R^2 = 0.23$, $P < 0.01$) habitat types. Average number of males per lek and leks per 100 ha data were significantly associated in sandsage/midgrass habitat ($R^2 = 0.22$, $P < 0.01$), but not in shinnery oak/midgrass habitat ($R^2 = 0.03$, $P > 0.05$). Habitat change over time and disease are currently being investigated as possible factors in the lesser prairie chicken population decline in Texas.

INVERTEBRATE CHARACTERISTICS OF LESSER PRAIRIE CHICKEN HABITATS IN SOUTHWEST KANSAS

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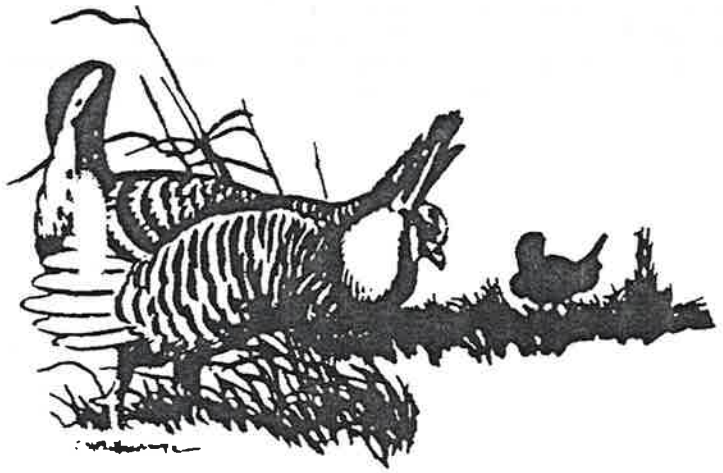
THOMAS L. WALKER, JR., Division of Biology, Kansas State University, Manhattan, KS 66506
ROBERT J. ROBEL, Division of Biology, Kansas State University, Manhattan, KS 66506

Abstract: Invertebrates are important dietary components of both adult and juvenile lesser prairie chicken (Tympanuchus pallidicinctus). We sampled invertebrate populations in sand sagebrush (Artemisia filifolia) habitats in late June - early July using 6 pitfall-trapping grids. Areas sampled were classed as used (use) or not used (non-use) by lesser prairie chicken and as having low (<10%), moderate (10-30%), or high (>30%) sand sagebrush canopy cover. Three sampling grids were placed in use areas and 3 in non-use areas. Use area sampling grids were located in each of the sand sagebrush density categories whereas non-use grids were only in low and moderate sand sagebrush density areas. Invertebrates were sorted to family, oven-dried, and weighed to 0.0001 g. Mean invertebrate biomass per trap (g/trap) was determined and compared between use and non-use areas over differing levels of sand sagebrush density. We found no difference ($P = 0.4229$) in mean biomass per trap between use and non-use areas. Mean biomass was 1.6682 (SD = 0.8954) and 2.5969 g/trap (SD = 1.4216) for use and non-use grids, respectively. Mean invertebrate biomass did not appear linearly correlated with sand sagebrush canopy cover, however, mean invertebrate biomass was higher ($P = 0.0445$) in areas of low sand sagebrush canopy cover than in areas of moderate or high sand sagebrush canopy cover. Invertebrate biomass does not appear correlated with sand sagebrush canopy cover nor does lesser prairie chicken habitat selection appear to depend upon invertebrate biomass, however, our results may be an artifact of small sample size. Sampling effort will be increased in the 2 remaining years of this project.

CURRENT STATUS OF THE GREATER PRAIRIE CHICKEN IN WISCONSIN

JIM KEIR, Wisconsin Department of Natural Resources, Friendship Ranger Station, P.O. Box 100, Friendship, WI 53934

Abstract: Male greater prairie chickens (Tympanuchus cupido) observed on booming grounds in Wisconsin increased approximately 13% in 1997. A total of 611 males was counted throughout the Wisconsin range during the April survey period. A survey of all prairie chicken range in the state is completed annually. The survey objective is to count every individual male prairie chicken defending a territory on every booming ground within the range. Surveyors from the University of Wisconsin at Stevens Point, the Wisconsin Department of Natural Resources, and private volunteers located all booming grounds during late March and early April. An effort was made to obtain 3 counts from each ground during mid-April to establish the number of males defending territories. Fluctuations in numbers from year to year do not always follow the same pattern from one part of the range to another. Some factors influencing spring population levels include weather, habitat quality, predation, and changes in private land uses. Annual counts were taken on and in the vicinity of the following public grassland management properties in Wisconsin: Leola, Buena Vista, Paul J. Olson, Mead, and McMillan. The greatest increases occurred in that part of the range with the most intensive grassland management (Leola) -- the number of male prairie chickens observed on Leola in 1997 was the highest since 1958!



HISTORY OF SPRING SHARP-TAILED GROUSE DANCING GROUND CENSUS IN NORTH DAKOTA

JERRY D. KOBRIGER, North Dakota Game and Fish Department, Dickinson, ND 58601-7227, USA

Abstract: Census of sharp-tailed grouse (Tympanuchus phasianellus jamesi) in North Dakota has followed a slow but definite path towards a refinement of the census area technique. This involves establishing a census area of approximately 36 square miles and counting all displaying male grouse within each area. Objectives are: (1) to obtain indices to annual changes in spring populations; and (2) to correlate spring census data with brood and harvest information to evaluate population trends. Prior to 1952, sharptail population trends were estimated by rural mail carrier counts, aerial township counts, and other haphazard methods. In 1952, locations of all dancing grounds and past count data were incorporated into a central permanent file which was updated annually as more grounds were found and censused. Only total counts (usually flush counts) were made but in 1953, it was advocated that male and female counts be made, and that widely scattered dancing ground observations be abandoned in favor of the census area technique. By 1956 only 2 township areas had been establishe and censused. From 1956 - 1962 no new census areas were established, total counts (flush counts) continued to be made, many counts were made after peak of attendance by males in spring, and evening counts continued. In 1963, the census area technique was revived with establishment of 7 new areas. However, flush counts and evening counts continued to be used in analysis of data. No changes were incorporated in 1964, but 1965 finally saw abandonment of random ground counts, flush counts, and evening counts. From 1963 to the present, 43 census areas have been established and used for breeding population information. Many of these areas were established and censused for short periods but then discontinued due to lack or change of personnel, completion of short term studies, or simply disinterest by cooperating personnel. Only 3 census areas have complete data from 1963 - 1997. Data are limited from 1963 - 1979 with a census being done on 8 - 15 areas each year. Data comparisons are difficult when number f census areas changes each year and even if the same number are censused, often times they are different areas. Since 1980, nearly complete data are available for 20 census areas. The most areas counted any one year were 24, which encompassed 5,702 square miles. Census data show that the sharptail population peaked in 1988, with lower peaks in 1964 and 1992, the only years sharptail males exceeded 6 males per square mile. Data show no significant population trend.

SUPPLEMENTAL STOCKING OF ATTWATER'S PRAIRIE CHICKEN ON THE ATTWATER PRAIRIE CHICKEN NATIONAL WILDLIFE REFUGE

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MICHAEL E. MORROW, Attwater Prairie Chicken National Wildlife Refuge, P.O. Box 519, Eagle Lake, Texas 77434
CLIFTON P. GRIFFIN, Department of Wildlife and Fisheries Sciences, Texas A&M University, College Station, Texas 77843
NOVA J. SILVY, Department of Wildlife and Fisheries Sciences, Texas A&M University, College Station, Texas 77843

Abstract: Restoration efforts for Attwater's prairie chicken (APC; Tympanuchus cupido attwateri) began in August 1995 with a release of 13 juvenile male pen-reared APC on the Attwater Prairie Chicken National Wildlife Refuge (APCNWR) in Colorado County, Texas. Two APC survived through the breeding season while 9 died 7 days post-release as a result of physiological complications. Rearing techniques were modified during spring 1996 as an effort to minimize physiological stresses upon release into the wild. During summer 1996, 50 juvenile pen-reared APC were released on APCNWR. Prairie chicken were placed in acclimation pens for 3 days (n=24) or 14 days (n=26). Results from 1996 release are encouraging with 20 APC surviving into the breeding season. Forty-seven percent of the mortalities occurred within 30 days post-release, 86% of which were from 3-day acclimation pens. During fall 1997, 33 APC were released on APCNWR and current survival is 44%. Release methods will continue to be evaluated in subsequent years allowing further refinement of release techniques.

FEASIBILITY STUDY: REINTRODUCTION OF THE GREATER PRAIRIE CHICKEN INTO SOUTHWESTERN MINNESOTA

SHARRY MCDONALD, Minnesota Department of Natural Resources, RR 1 Box 181 Madelia, MN 56062
STEVE MERCHANT, Minnesota Department of Natural Resources, RR 1 Box 181 Madelia, MN 56062
RICHARD KIMMEL, Minnesota Department of Natural Resources, RR 1 Box 181 Madelia, MN 56062
JOEL ANDERSON, Minnesota Department of Natural Resources, RR 1 Box 181 Madelia, MN 56062

Abstract: Greater prairie chicken (Tympanuchus cupido pinnatus) were abundant in the southern half of Minnesota until late 1930's, and they were extirpated from that area by 1950. In 1987, Minnesota Department of Natural Resources proposed reintroducing prairie chicken to southwestern Minnesota where large grassland tracts are present. We suggest the placing of 5 separate prairie chicken releases. Our goal is to create a population of prairie chicken that is not isolated from populations already in existence in northwestern Minnesota. Habitat management strategies include controlling tree and brush encroachment, predator manipulation, and prescribed burning. Winter food plots, placement strategies, and lek establishment will be discussed.

IDENTIFYING AND MODELING WISCONSIN PRAIRIE GROUSE HABITAT USING REMOTE SENSING AND GIS

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Abstract: Prairie grouse in Wisconsin have declined markedly since the 1950's, and presently, most populations exist on reserves managed primarily with prescribed burning. However, Wisconsin harbors isolated populations of prairie chickens and sharp-tailed grouse on non-managed, private lands. As expected, these populations fluctuate depending on seral stage and land use. However, little quantitative information exists explaining how prairie grouse populations are influenced by the extent and spatial configuration of habitat patches in the landscape. Lek counts can be used in conjunction with remote sensing and GIS to model landscape-level habitat selection by prairie grouse at multiple scales. I used LandSat Thematic Mapper data in conjunction with ground verification to identify agricultural crops, forests, upland grasses, wetlands, pasture, and shrub-carr habitat in an agricultural landscape harboring prairie chickens. Similarly, I used Thematic Mapper data to successfully identify vegetation seral stage in a predominantly forested landscape harboring sharp-tailed grouse. Habitat around active leks is being compared to random sites to determine (1) landscape-level habitat selection; (2) the scale at which selection occurs; and (3) the role of metapopulation dynamics in lek site selection. Preliminary results of landscape-level habitat selection by prairie chickens will be presented.

ATTWATER'S PRAIRIE CHICKEN HISTORY AND STATUS

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Abstract: Attwater's prairie chicken (Tympanuchus cupido attwateri) numbers, estimated at between 300,000 and 1 million birds prior to European American settlement in their range, were reduced to approximately 8,711 when scientifically evaluated in 1937. By the spring of 1997, only 58 birds remained in the wild. Historically, Attwater's prairie chickens occupied an estimated 2.4 million ha of coastal prairie from southwestern Louisiana, south, to at least the Nueces River in Texas. Brush encroachment and conversion of coastal prairie to agricultural, commercial, and urban uses were the primary reasons why 97% of this species' habitat was eliminated in Texas and Louisiana. Considerable habitat fragmentation also occurred during this period. It is probable that all 3 remaining populations are currently too small to survive without supplementation. Reproductive success (as measured by juvenile to adult ratios) was significantly less ($p < 0.011$) for composite Attwater's as compared to greater prairie chicken (T. c. pinnatus) populations. Mean Attwater's prairie-chicken nesting success (32.2%) and number of chicks per brood prior to brood breakup (4.2) were both less than those of the Greater prairie-chicken [49.5% ($p = 0.0425$) and 6.0 ($p = 0.0001$), respectively]. Insufficient data were available to compare the proportion of Attwater's versus greater prairie chicken hens losing their entire brood. Population simulations indicate that these 3 population parameters are key to prairie chicken reproductive success, yet values for no single parameter could be increased sufficiently to reverse the decline in Attwater's prairie chicken numbers. However, if nesting success, brood survival, and the number of chicks per successful brood were increased sufficiently to close > 90% of the difference between composite Attwater's and greater prairie chicken values, numbers would be predicted to increase. Because captive propagation is a "stop-gap" measure, research and management efforts might best be concentrated on improving Attwater's prairie chicken habitat conditions over wide areas, particularly those influencing nesting and brood rearing success.

NORTHERN BOBWHITE AS DISEASE INDICATORS FOR THE ENDANGERED ATTWATER'S PRAIRIE CHICKEN

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Abstract: Biologists have postulated that infectious diseases may have contributed to the declining numbers of Attwater's prairie chickens (APC; Tympanuchus cupido attwateri). Because of the limited access to APC, we used a related species, the northern bobwhite (Colinus virginianus), as a surrogate in order to further disease evaluation. Northern bobwhite from the APC National Wildlife Refuge (Eagle Lake, Texas) and APC from all remaining populations were surveyed for helminthic endoparasites and antibodies against the etiologic agents responsible for 9 infectious diseases. Antibodies to Pasteurella multocida were found in 4 of 27 APC and 3 of 53 northern bobwhite. Dispharynx nasuta, associated with disease in other North American grouse, was found in 1 of 3 APC and 2 of 62 northern bobwhite. Trichostrongylus cramae was found in 8 of 9 usable APC samples and in 60 of 62 northern bobwhite. We recommend that experimental studies on the effect of T. cramae on prairie grouse and the transmissibility of disease agents from northern bobwhite to prairie grouse be conducted.

NESTING AND BROOD REARING ECOLOGY OF PLAINS SHARP-TAILED GROUSE IN A MIXED-GRASS/FESCUE ECOREGION OF SOUTHERN ALBERTA

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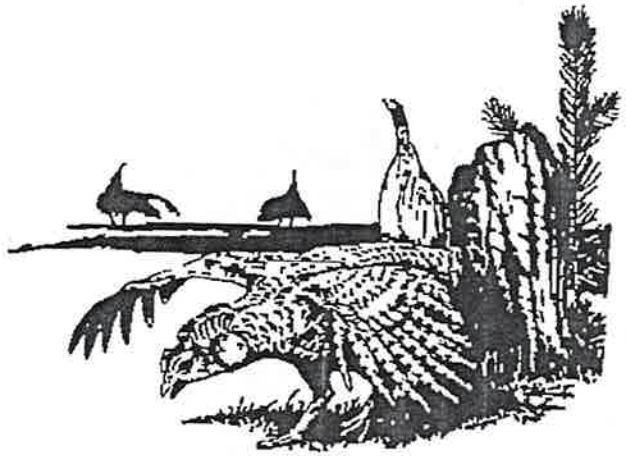
Abstract: Grazing is the primary use of private lands within prairie grouse range in Alberta, and therefore cooperative research is being undertaken to devise management strategies that benefit both ranchers and wildlife. Alberta biologists have expressed the need for ecological information concerning sharp-tailed grouse (Tympanuchus phasianellus jamesi) nesting and brood rearing in rangeland habitats in order to substantiate management directives. This paper solicits comments and recommendations from prairie grouse researchers on design, methodology and statistical analyses for a sharp-tailed grouse nesting and brood rearing ecological study in the rangelands of the Milk River Ridge, Alberta. Hen sharp-tailed grouse are currently being trapped and fitted with radio transmitters. Tracking will commence in April 1998. Dominant habitat types will be classified using land classification maps. The coordinates from nest sites and brood rearing observations will be taken using a GPS unit, and coordinates will be plotted on a GIS layer to be used in conjunction with a land classification map. This map will provide an indication of nesting and brood rearing requirements of sharp-tailed grouse on a macro scale. Habitat use by nesting and brood rearing sharp-tailed grouse will then be compared to the availability of habitat types on the Milk River Ridge, Alberta. The results of the analyses will be used to make management recommendations for plains sharp-tailed grouse and other prairie nesting species in the rangelands of Alberta for a habitat program to be administered by the Alberta Conservation Association.



DISTRIBUTION AND STATUS OF SHARP-TAILED GROUSE IN WASHINGTON

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Abstract: Columbian sharp-tailed grouse (Tympanuchus phasianellus columbianus) were historically found in steppe, shrub steppe, and mountain shrub communities throughout much of eastern Washington. The current range is less than 10% of the original range, consisting of relatively small, isolated, remnant populations. Research since 1959 has indicated that the declines in the distribution have continued to the present; 69% of 118 known leks have disappeared in the last 39 years. Most of the vacant leks are in areas where sharp-tailed grouse recently have been extirpated. Annual changes in lek counts indicate that Washington's estimated population of sharp-tailed grouse has declined approximately 96% since 1959 to its current level of 716 birds. The declines of sharp-tailed grouse are largely linked to the cultivation of native habitat for the production of crops and the degradation of native habitat as a result of livestock management. Consequently, populations of sharp-tailed grouse are becoming smaller and more isolated every year. Because evidence from this study indicates that movements of radio-marked birds are not sufficient to allow for interchange of individuals between current populations, management efforts should be directed toward protecting, enhancing, and expanding populations.

GENETIC MANAGEMENT OF ILLINOIS PRAIRIE-CHICKENS

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Abstract: The Illinois Department of Natural Resources currently manages the last 2 remaining flocks (Jasper and Marion Counties) of greater prairie chicken (Tympanuchus cupido pinnatus) in Illinois on scattered grassland tracts totaling 2,400 acres. Each of these flocks contained fewer than 200 individuals during the spring of 1997 and the prairie chicken is listed as state endangered. Data from a 35-year study showed a decline from 2,000 prairie chicken in 1962 to less than 50 birds in 1994, while egg success and fertility also made significant declines. In1992, a Genetic Management Plan was implemented to increase genetic diversity by relocating birds from 3 genetically diverse populations (Kansas, Nebraska, and Minnesota) during 1992-1997. Prairie chicken relocated from Kansas (298) and Nebraska (100) were trapped on leks during March and April then shipped by air to St.Louis, MO. The birds were then transported by vehicle and released on or near active leks, usually within 24 hours of capture. The number of males in Jasper County increased from 7 in 1994 to 70 in 1996, then decreasing to 59 in 1997. In Marion County releases made in 1996 (n = 50) and 1997 (n = 100) has resulted in the number of males increasing from 6 to 24 in 1997. These reintroduction efforts have resulted in an increase in hatch rates as well as the number of males, despite the small isolated tracts of available grassland habitat.

CRP OPPORTUNITIES FOR PRAIRIE GROUSE IN MINNESOTA

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Abstract: The major portion of the range of greater prairie chicken and sharp-tailed grouse occurs in northwest Minnesota where considerable acreage has been enrolled in CRP within chicken sharptail ranges. This acreage is comparable to the land under public ownership within these ranges. In the last 25 years, chicken numbers have been reasonably stable whereas sharptails have declined precipitously. Neither species responded to the increased CRP habitat resource as managers had anticipated. A long-term study suggests that limited plant diversity and no-disturbance management are responsible for the unrealized potential with regard to prairie chickens. These factors plus the lack of brush are thought to be limiting to sharptails. A management model is proposed in which CRP tracts would be managed on a 4-year rotation by either burning, grazing, haying, or mowing; in that order of priority. Perimeter and interior unit borders would be either disked firebreaks or planted to a broad-leafed food plant such as soybeans or sunflowers. Income from cooperator grazing and haying fees would support management activities of the Minnesota Prairie Chicken Society (for acreage within the chicken range) and the Minnesota Sharp-tailed Grouse Society (within the sharptail range). A variation from this model for sharptails would have 1 of the 4 units unmanaged or planted to shrubs to maintain the important brush component. Plant diversity should be improved by an increased emphasis (more points given by the NRCS) placed on native species and forb mixtures in the recent CRP sign-up. Implementation challenges include: dollar management involving federal agencies and private groups, launching a pilot project and establishing appropriate continuity and structure (Nature Conservancy traveling management crews could be a useful model), maintaining equity in cooperator use of CRP lands, and monitoring the effort to evaluate its effectiveness. This proposal has the potential to increase wildlife benefits of CRP lands, provide benefits to local farmers, and increase cooperative partnerships between conservation groups and the agricultural community.

A PRELIMINARY LOOK AT PRAIRIE CHICKENS AND GRASSLANDS: 2000 AND BEYOND, THE FIRST YEAR

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Abstract: This paper will present the preliminary results for the first year and a half of the 5-year research project -Prairie Chickens and Grasslands: 2000 and Beyond. The objectives are to increase our knowledge and understanding of greater prairie chicken (Tympanuchus cupido pinnatus) ecology and grassland management. This project consists of several interrelated field research projects in North Dakota, Minnesota, and Wisconsin that will utilize past information and incorporate radio telemetry to monitor survival, general habitat use, dispersal, and nesting success. The long-term goal will be to process information from past studies (Hamerstrom and Hamerstrom and R.K. Anderson) and contemporary research to develop a grassland habitat model for prairie grouse. A total of 308 radio-marked birds are currently being followed; 226, 56, and 26 in Wisconsin, Minnesota, and North Dakota respectively. These totals include 124 radio-marked immatures; 98, 15, and 11 in Wisconsin, Minnesota, and North Dakota respectively. Initial data on dispersal of immatures indicates that hens move farther than cocks and that dispersal distances to the first year breeding areas are influenced by the amount and distribution of occupied habitat. Preliminary results indicate survival varies between areas and appears to be influenced by weather, open space, winter food, predators, and the presence of electric distribution wires. The North Dakota translocation project is being conducted to reestablish a population and develop release methodology guidelines that successfully establish birds near the release sites. Past emphasis on studying nesting and brood rearing (reproductive factors) has resulted in gaps on our overall knowledge of the life history of the prairie chicken.

PARASITES OF LESSER PRAIRIE CHICKEN, RING-NECKED PHEASANT AND NORTHERN BOBWHITE IN SOUTHWESTERN KANSAS

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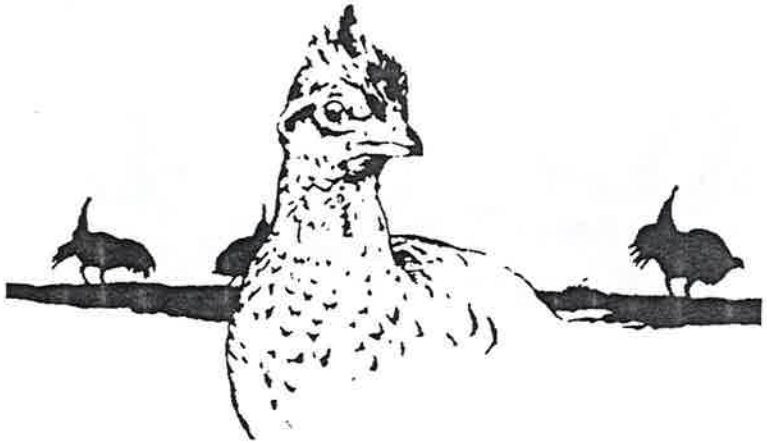
Abstract: Even though helminth burdens (e.g. Trichostrongylus tenuis) have been reported to reduce productivity and survival of red grouse (Lagopus lagopus scoticus) in Scotland, little research has been done in North America to evaluate the potential impact of helminth burdens on prairie grouse. We initiated this study to determine the incidence of helminths in lesser prairie chickens (Tympanuchus pallidicinctus) in southwestern Kansas. Parasites of ring-necked pheasants (Phasianus colchicus) and northern bobwhites (Colinus virginianus) were also evaluated in the same area to determine if helminth burdens were similar among the three avian species. Examinations of fecal material and viscera samples were used to detect the presence of parasites. Fecal samples from lesser prairie chickens were obtained and examined (by sugar-flotation) in May, August, and September 1997. Eggs of Eimeria sp. were present in 3 of 20 May samples (15%), while eggs of Dispharynx sp. or Tetrameres sp. were found in 2 of 23 August samles (9%) and 12 of 40 September samples (30%). Overall, 17 of 83 fecal samples (21%) contained parasite eggs. Viscera from 50 pheasants, 16 bobwhites, and 4 lesser prairie chickens (all hunter-killed birds) were collected and examined in November and December for presence of helminths. Tapeworms (Cestoda) were found in 22% of the pheasant and 6% of the bobwhite viscera, while 22% of the pheasant and 50% of the bobwhite viscera contained cecal worms (Subulura sp.). Two of the four lesser prairie chicken viscera harbored an as-of-yet unidentified nematode species. Lesser prairie chicken and bobwhite viscera collection will continue through January 1998.



VEGETATION AROUND LESSER PRAIRIE CHICKEN NESTS IN SOUTHWEST KANSAS

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Abstract: We monitored 26 lesser prairie chicken (Tympanuchus pallidicinctus) nests during spring 1997. Of the 26 nests, 24 failed (16 nest depredations, 6 hen depredations, and 2 infertile clutches) and only one brood survived (5 chicks). In order to determine if lesser prairie chicken hens were selecting nest sites with specific vegetation characteristics, we compared percent composition of vegetation (Daubenmire frame) and visual obstruction measurements (distance 3 m, height 1 m) at 21 nest sites and 36 random sites. The rangelands in our study were divided into 2 areas, one (MSB) having moderate densities of sand sagebrush (Artemisia filifolia) and the other low densities (LSB). Percent sagebrush was higher at nest bowls (within 0.5 m of nest) than at nest areas (2.5 - 5.5 m from nest) (MSB: 26.8% vs. 3.9%, LSB: 16.9% vs. 6.3%). Percent sagebrush was higher at nest bowls than at random points (MSB: 26.8% vs. 13.4%, LSB 16.9% vs. 4.9%), and at nest areas versus LSB random areas (6.3% vs. 1.9%), but was lower at nest areas versus MSB random areas (3.9% vs. 16.1%). Visual obstruction measurements were higher at nest sites than at random sites (MSB: 4.8 dm vs. 3.1 dm, LSB: 3.8 dm vs. 1.8 dm). Lesser prairie chicken hens in southwest Kansas prefer to nest under sagebrush, in areas of taller and denser vegetation with relatively sparse sagebrush.

SMALL NUMBERS, ISOLATION, FITNESS LOSS, AND GENETICS OF PRAIRIE CHICKENS

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JUAN L. BOUZAT, University of Illinois, Urbana, IL 61801
KENNETH N. PAIGE, University of Illinois, Urbana, IL 61801

Abstract: We studied fitness and genetic diversity of greater prairie chicken (Tympanuchus cupido pinnatus) as possible contributing factors to long-term declines in abundance and distribution in Illinois. Historical literature and standard booming-ground surveys documented changes in demography. Fitness data were derived from intensive nest searches over 35 years (1963-97) using fertility and hatch rates of eggs. Genetic diversity was measured by comparing data (Bouzat et al. In press) based on 6 microsatellite loci from 3 large populations and our small focal population in Illinois. In contrast to an estimated 2,000 birds in 15 counties in 1962, only about 40 remained in 2 counties by spring 1994. On our intensive study area in Jasper County, egg quality appeared normal in the 1960's with 95% fertility and a 94% hatch rate. By 1990 these rates had dropped steadily to lows of 74 and 38%, respectively. Illinois birds had the lowest estimate of mean heterozygosity per locus and about half the allelic diversity of that observed in populations still numbering in the thousands. Limited data following translocations of birds to Illinois from the 3 genetically diverse populations suggest an increase in fitness to pre-bottleneck levels. This study is one of few to definitely link a loss of fitness to a loss of genetic diversity in a declining wild bird population.

RADIO TRACKING GREATER PRAIRIE CHICKEN IN THE TALLGRASS PRAIRIE REGION OF OKLAHOMA: FIRST YEAR'S PROGRESS REPORT

DONALD H. WOLFE, Sutton Avian Research Center, Bartlesville, OK
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STEVE K. SHERROD, Sutton Avian Research Center, Bartlesville, OK

Abstract: From 15 April through 31 May 1997 we captured 33 greater prairie chickens on booming grounds in the tallgrass prairie region of northeastern Oklahoma, and attached radio transmitters. Eleven of those birds have been killed, 11 can not be located, 3 have lost radios, and 8 are currently being tracked. We found and monitored 12 nests from radioed hens. Since 15 November 1997, we have again been trapping, and have caught 26 new birds so far this fall. Three of the fall-captured have been killed so far. From early results, it appears that many birds disperse from the booming ground in June or July, but return to the area in the late fall. We will present more information on nest success, nesting habitat, seasonal movements, and mortality rates for the first year of our research.

GIS ANALYSIS OF COARSE-SCALE ATTRIBUTES OF LESSER PRAIRIE CHICKEN HABITAT IN THE TEXAS PANHANDLE

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ROBERT C. MAGGIO, Texas A&M University, College Station, TX 77843
MARKUS J. PETERSON, Texas Parks and Wildlife Department, Austin, TX
JOHN P. HUGHES, Texas Parks and Wildlife Department, Canadian, TX

Abstract: Data collected by Texas Parks and Wildlife Department (TPWD) indicate that habitat occupied by lesser prairie chicken (LPC; Tympanuchus pallidicinctus) in the Texas panhandle has contracted substantially since 1940. We are conducting a TPWD-funded project to determine landscape changes of LPC habitat in this area using spatially explicit landscape analysis to seek quantifiable explanations for the absence of LPC from its formerly inhabited range. As part of this study, we developed a GIS database for the Texas panhandle study area (60 counties) including data layers on topography, hydrography, soils, land use, vegetation, roads, as well as LPC habitat distribution in 1940 and 1989. GIS analysis was conducted to characterize LPC habitat with these coarse-scale, physical and ecological attributes. Results show considerable differences, as measured by these attributes, between the LPC habitat in the rolling plains and high plains portions of the Texas panhandle, and between the occupied and suitable but unoccupied LPC habitat. Further study will be conducted in several intensive study areas (300,000-500,000 ha total) in the Texas panhandle using GIS and erial photo-based landscape analysis to assess temporal change in land-use/habitat characteristics of LPC habitat over the past 5 decades and their possible relationship to the contraction of areas occupied by LPC.

BUSINESS MEETING

The business meeting of the 22nd Prairie Grouse Technical Council was called to order by chair Nova Silvy (Texas) at 2:30 p.m., 6 February 1998 at the George Bush Presidential Library, College Station, Texas.

Minutes of the previous meeting (1995) were printed in the proceedings of the North Dakota meeting, which had been read by most members. A motion was made by Dan Svedarsky (Minnesota) to approve the minutes, seconded by Ron Westemeier (Illinois), and approved by unanimous vote.

A treasurer's report by Jerry Kobriger (North Dakota) showed a balance of $448 was available from the North Dakota meeting; however, because of a last minute change made by the Bush Library accepting no outside food services in their facility, Nova believed there would be no monies to set up a nest egg for the next chair.

Nova introduced the Executive Committee (Ken Giesen, Colorado; Jerry Kobriger; and Nova Silvy, chair). He followed this with an introduction of the Awards Committee (Ken Giesen, chair 1996-97; Jerry Kobriger, chair 1998-99; Mike Morrow, member 1996-99, Bill Vodehnal, member 1994-97; Nova Silvy, chair 2000-01).

John Toepfer (Wisconsin) noted that further work was needed to complete the prairie grouse bibliography. Ken Giesen noted the Awards Committee had received 3 nominations for individuals for the Hamerstrom Award and the Committee had selected one individual for the Award. There were no nominations for a group award (Later that evening during the Texas-style Banquet/Bar-B-Que, Dr. Robert J. Robel received the Hamerstrom Award).

Ron Westemeier, chair of Archives Committee, reminded all members that original records of all information from the 22nd Conference should be sent to the Western Historical Manuscript Selection in Columbia, Missouri for safe keeping. In this way all records of PGTC meetings will be permanently on file.

Scott Taylor (Nebraska) indicated that PGTC should come up with guidelines for interstate transport of prairie grouse. After considerable discussion, Nova appointed Scott as chair of an Ad Hoc Committee to produce such guideline prior to the 1999 meeting. Mike Schroeder (Washington), John Toepfer and Nova also agreed to serve on this committee.

David Wiedenfeld (Oklahoma) brought up the possibility of starting a list-serve for PGTC. After a show of hands on who would be interested in such a services, David agreed to set up the server. David asked that all interested persons provide him with their e-mail addresses.

Dan Svedarsky passed out information on the 25th Meeting of the Minnesota Prairie Chicken Society and Symposium that would be held 24-25 April 1998 in Crookston, Minnesota. He requested that authors of papers to present at the Symposium submit a copy to him as soon as possible. He invited all those in attendance at the 22nd PGTC meeting to attend.

A discussion was held on where to hold the 1999 PGTC meeting. Oklahoma (Russ Horton) , Wisconsin (Jim Keir), and Manitoba (Rick Baydack) offered to host the meeting. Rick felt that Manitoba would offer some unique grouse hunting opportunities for those who would vote for a Manitoba meeting. By popular vote, Manitoba was selected as the site for the 1999 PGTC meeting. Rick Baydack was selected by the Manitoba delegation to chair the 1999 meeting.

Being no further business Nova adjourned the meeting at 1630 hours.

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