2005 State Reports to the Prairie Grouse Technical Council

ILLINOIS

Mornings were a little louder and more colorful at Prairie Ridge State Natural Area this spring. Surveys by Illinois Department of Natural Resources biologists and volunteer observers documented a 56% increase from 2004 in the number of displaying male prairie-chickens. At the Jasper County area, 52 male prairie-chickens were counted, up from 27 in 2004 (a 93% increase), and 48 males were recorded in Marion County, up from 37 in 2004 (a 30% increase).

In March and April, prairie-chickens gather at "booming grounds" where males perform their communal breeding displays, and females select mates prior to nesting. Birdwatchers seek out these booming grounds to see and hear the birds' courtship rituals, and since most male birds display at booming grounds all season, biologists use counts of the males to gauge changes in prairie-chicken populations from year to year.

The 3,800-acre Prairie Ridge State Natural Area, comprised of separate units in Jasper and Marion counties in south-central Illinois, is managed for grassland wildlife and hosts Illinois' last remaining populations of greater prairie-chickens. Scott Simpson, the IDNR manager at Prairie Ridge, says, "This indicates the additional grassland habitat secured by IDNR and Illinois Audubon Society in the past few years and habitat restoration work are right on target." Since 1998, Prairie Ridge has expanded by 1,384 acres, with 656 of those acres acquired by Illinois Audubon Society. Funding from the State Wildlife Grant Program and the National Fish & Wildlife Foundation have supported establishing grassland on these new areas, and improving existing grasslands. Cooperation with local US Department of Agriculture offices have created incentives to improve wildlife habitat on nearby private lands.

Nature shares some of the credit. Heavy rainfall during incubation and brood-rearing in May and June depress populations of prairie-chickens and other ground-nesting birds. After a string of wet springs, the pattern in 2004 was more normal. Nesting conditions so far in 2005 have been excellent. With guarded optimism, Simpson adds, "I hope we can get these kinds of increases for 2006."

Jeff Walk, a research scientist with the Illinois Natural History Survey has studied grassland birds at Prairie Ridge and authored the Illinois recovery plan for prairie-chickens. "This year's numbers are very encouraging. The birds have the ability to increase their numbers quickly when conditions are right. But, we're a long way from securing these endangered populations."

In the 1850s, an estimated 10 million prairie-chickens were in Illinois. Due to destruction of the large blocks of grassland habitat prairie-chickens require, populations plummeted to about 25,000 when the hunting season was closed in 1933. By the mid-1960s, fewer than 400 birds remained in the area that is now Prairie Ridge, just as conservation work was beginning. Lack of sufficient habitat, interactions with ring-necked pheasants, and inbreeding depression led to fewer than 50 birds statewide in 1993, when translocations of birds from the Great Plains rescued the population from almost-certain extinction. The 2005 population is the largest since 1999, the season after translocations ended. At Prairie Ridge the goal for a secure population is 1,000 birds, or about 500 displaying males. The statewide recovery goal is 5,000 birds.

--Submitted by Scott Simpson, 4295 North 1000th Street, Newton, IL 62448 (618.783.2685), and Jeff Walk, One Natural Resources Way, Springfield, IL 62701 (217.557.9251). Prairie Ridge State Natural Area on the web at: http://dnr.state.il.us/orc/prairieridge/index.htm

KANSAS

Greater prairie chicken populations showed little change this year, as indicated by the 28 survey routes (each 20 mi^2) surveyed by Kansas Department of Wildlife and Parks staff. The rangewide index increased 3%, a non-significant change. Only the Flint Hills survey region showed a significant change (+12) from 2004. The increase in the Flint Hills is probably attributable to two things: (1) The summer of 2004 was exceptionally mild and almost ideal for brood rearing. (2) Spring burning in the Flint Hills in 2004 was reduced due to dry conditions. This left better-than-normal residual cover for nesting. However, both the conditions that appear to have helped in the Flint Hills in 2004 may have opposing effects this year. Because less than normal amounts of burning occurred last year and since 2004 summer rains produced heavy growth, and good residual cover, spring burning was exceptionally extensive in the Flint Hills in the spring of 2005. If the pattern holds true, it is likely that prairie chicken nesting success in the region will be low this year due to direct nest losses to fire and the lack of residual cover after this spring's burns.

Kansas' lesser prairie chicken lek surveys indicated a significant 14% increase this year, following a 40% increase in 2004. We continue to see an area of overlap of the two species approximately 30 to 40 miles wide in west-central Kansas with many mixed leks occurring. Conservation reserve grasslands to play a major role in the expansion of lesser and greater chicken populations in western Kansas. Much of our focus for

these species in this region has been on enhancing the quality of CRP grasslands through forb interseeding and better management.

Kansas continues to update our prairie chicken distribution map with the assistance of a mapping specialist at the Kansas Biological Survey in Lawrence. Plans are also being formulated for research on the effects of the Patch Burning / Patch grazing system that has been developed at Oklahoma State University.

--Submitted by Randy Rodgers, Kansas Department of Wildlife and Parks

NEBRASKA

Prairie grouse breeding ground surveys were conducted on 16 Sandhills routes and 8 southern routes during 1-20 April 2005. For 10 Sandhills routes surveyed in both 2005 and 2004 with $\geq$1 sharp-tailed grouse lek, the total number of males in 2005 was similar (paired t = -0.86, 9 df, P = 0.411) to 2004. However, the total count in 2005 for routes run continually during 2000-2005 was above the 95% confidence interval surrounding the 2000-2004 mean. The Valentine, Johnstown, Sunday School, and Wildhorse routes had counts higher than their 5-year confidence intervals, whereas the Antioch count was below its confidence interval. All significant 25-year and longer-term route trends detected were negative, whereas 10-year trends were mixed.

For 13 Sandhills routes surveyed in both 2005 and 2004 with $\geq$1 prairie-chicken lek, the total number of prairie-chicken males in 2005 was similar (paired t = 0.69, 12 df, P = 0.501) to 2004. The total count of males in 2005 for routes surveyed continually during 2000-2005 was within the 95% confidence interval surrounding the 2000-2004 mean. The Arthur, O'Neill, North Platte, and Wheeler routes had counts higher than their 5-year confidence intervals, whereas no route had a count lower than its 5-year confidence interval. Some 10-year route trends were negative, but all significant 25-year and longer-term trends were positive.

The 8 southern routes are relatively new, so data are not available for long-term trend analyses. For routes run in both 2005 and 2004, the total number of prairie-chicken males observed in 2005 was similar (t = 0.25, 6 df, P = 0.811) to 2004.

Collectively, prairie grouse populations appear relatively stable over the long term, with sharptails declining somewhat while prairie-chickens have increased. Although these data are probably sufficient to indicate individual population trends, it remains difficult to use this survey to assess the relative abundance of the two species. Fewer sharptails than prairie-chickens are counted on Sandhills routes, but differences in the audibility of calls between the species likely lead to different detection probabilities as well. Because these differences have not traditionally been accounted for, the relative abundance of the two species on our survey routes may be misleading.

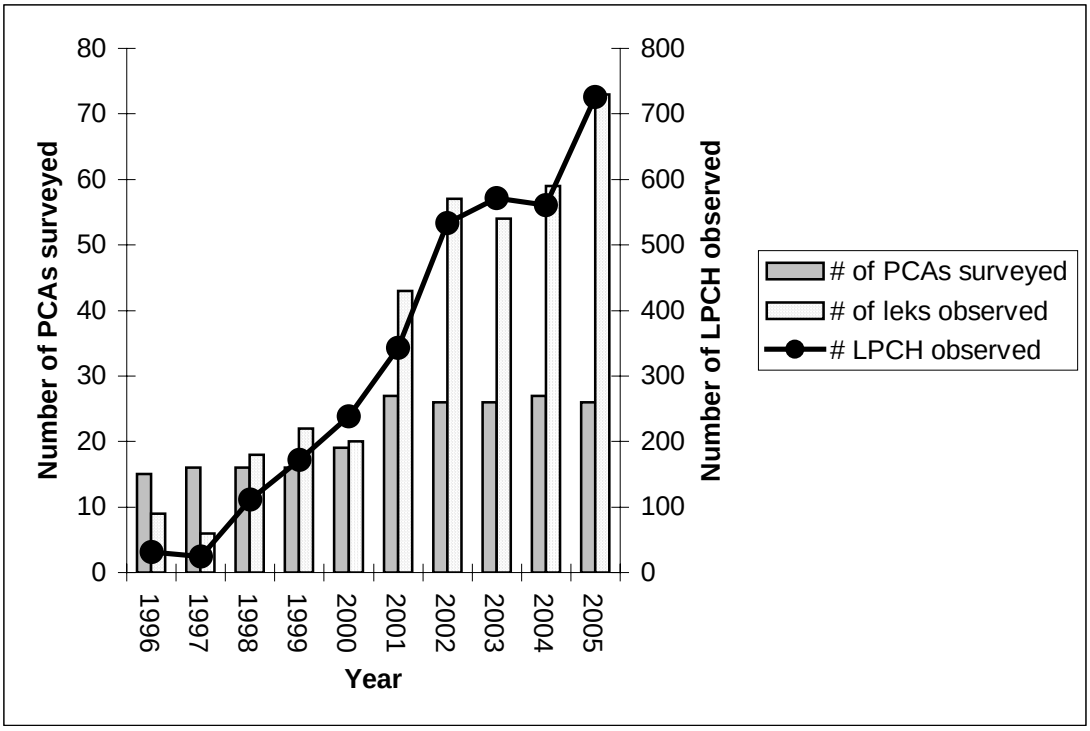
Regarding harvest, an estimated 8,600 hunters (6,900 residents, 1,700 nonresidents) bagged nearly 43,000 prairie grouse in 2004, averaging 1.1 birds per hunter-day. Although hunter success has remained high, resident hunter numbers have dropped dramatically from the historic high of nearly 22,000 in 1982. This decline has occurred despite stable grouse numbers and the continued availability of quality hunting opportunities on public land. If the current trend continues, resident grouse hunters will all but disappear within the next two decades.

The permit-only hunting season in eastern Nebraska has continued successfully since its inception in 2000. The 400 permit-holders took an estimated 328 prairie-chickens in 2004, and the estimated number of males on spring booming ground surveys has increased about 24% in the five years since the first season.

--Submitted by Scott Taylor, Nebraska Game and Parks Commission

NEW MEXICO

In April 2005, Lesser Prairie-Chickens (LPCH) were surveyed along public roads and on State Game Commission-owned Prairie Chicken Areas (PCAs). Twenty-nine roadside survey routes were established in randomly selected townships within the known occupied and potential range of LPCH to identify and record active lek sites. This was the eighth year of roadside route survey efforts. Fifty-four leks were detected on 16 of 29 (55%) roadside routes surveyed. Twenty-six routes have been surveyed annually from 1999 to 2005. Total number of leks detected (range = 33-48 leks) has been stable over this time period with no significant increases or decreases over the last 7 years. Twenty-six Prairie Chicken Areas (PCAs) were also surveyed. In 2005, 135 leks were detected either audibly or visually on or near PCAs. Over the last 10 years, both the number of leks detected and number of LPCH observed has steadily increased. Of the 135 leks detected, 726 LPCH were observed on 73 leks. Average lek size was 9.95 birds/lek. Existing data suggest overall LPCH numbers are stable in east-central New Mexico.



--Submitted by Dawn M. Davis, New Mexico Department of Game and Fish

SOUTH DAKOTA

Data received from US Forest Service, Cedar Creek Monitoring Unit, Ft. Pierre National Grasslands, shows a sharp incline of displaying male prairie grouse from last year (2004 – 140 grouse; 2005 – 291 grouse). Both prairie chicken and sharp-tailed grouse displaying grouse numbers increased. This increase has been consistent over the past 3 years.

Harvest of prairie grouse in South Dakota over the past three years has ranged between 38,000-50,000 birds with an average of 3.2 grouse harvested per hunter. The central part of the state continues to be the stronghold for both grouse numbers as well as hunting efforts.

We are in the third and final year of the grouse study taking place on the Fort Pierre National Grasslands "Survival, spatial ecology and habitat selection of sympatric greater prairie-chickens and sharp-tailed grouse in central South Dakota". As of the end of June, we have 40 hens and 34 chicks fitted with transmitters. Telemetry locations and habitat work will be complete by the end of September. Field observations and data will be collected in the month of September to determine the effects of dog training on brood movements and survival. Final analysis and report will be out next spring.

--Submitted by Tom Kirschenmann, South Dakota Game, Fish, and Parks

WISCONSIN

There was a 26% rangewide decrease in male prairie chickens on booming grounds in central Wisconsin in spring of 2005 compared to the previous year. This decrease follows a 6% population increase one year ago. A total of 444 male prairie chickens was observed in April, 2005 compared to 597 for the same areas in 2004. This is the lowest count since the beginning of the rangewide survey in 1989. The annual survey, and the year to year trend of male prairie chickens on booming grounds is assumed to mirror the overall population level.

Nest success and brood survival was undoubtedly impacted by the unusually wet and cold weather in central Wisconsin during late spring and early summer of last year (2004). It is assumed that the overall decline in numbers of male prairie chickens this spring is due in large part to these extremely negative conditions. However, it is noteworthy that conditions continue to be less favorable at the extremes of the range. The very low numbers of males on Leola (south) can probably be explained by the poor weather conditions in 2004 and the 11 inches of rain received in a single day in late June, 2003. Recovery will take time. The continued decline in the northern portion of the range can only be explained by continued habitat loss.

To emphasize an important point, "fringe" populations continue to fare poorly. Much of the range in central Wisconsin has lost booming grounds in recent years or numbers have dramatically declined. Within the past decade and a half all booming grounds in Taylor County (north) have been lost. The single ground at the Mosinee airport (east) is now gone; so too is the one ground that existed for years east of Neillsville along Hwy 73 (west). The booming ground annually found at the Searles cranberry marsh (southwest) was absent for the 4th consecutive year in 2005. The booming ground(s) at Dewey Marsh (also east) was not present for at least the 2nd consecutive year in 2005. In addition to this, there was a decline of 44% in booming males in the outlying range (north) – booming grounds have declined from over 30 locations to just three! **The continued constriction of the prairie chicken range has become critical to the welfare of the entire population!**

--Submitted by Jim Keir, Wisconsin Department of Natural Resources

WYOMING

Plains sharp-tailed grouse populations and hunter interest have been increasing in Wyoming since the inception of the Conservation Reserve Program (CRP) in 1986. Prior to implementation of the CRP program grouse numbers were fairly low in southeast Wyoming. There are currently around 240,000 acres enrolled in CRP in southeast Wyoming.

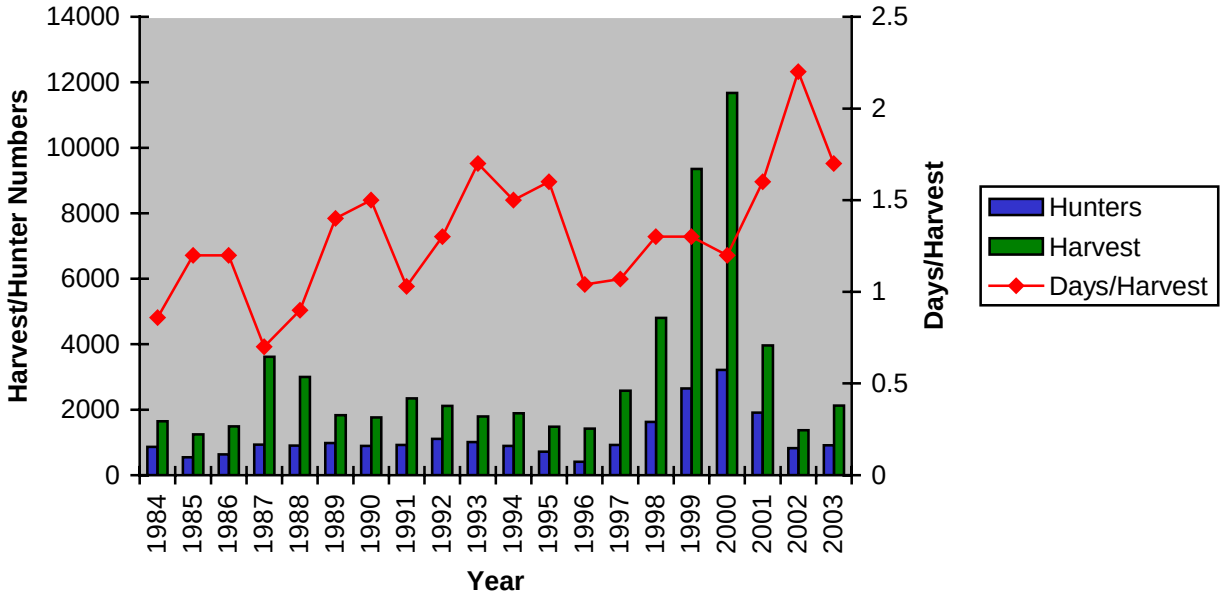
In Wyoming, plains sharp-tailed grouse are generally distributed east of a line formed by the foothills of the Bighorn Mountains in the north central part of the state and east of

the Laramie Range in the southeastern corner of the state. Densities tend to be highest in Campbell, Crook, Goshen, Johnson, Laramie, Platte, and Sheridan Counties.

Harvest trends (Graph 1) were relatively flat from 1984 through 1996. Through these years there was relatively little interest in hunting sharp-tailed grouse in Wyoming. With the advent of the Department's Walk-In Access program interest increased dramatically. This interest coincided with a peak in bird populations between 1998 and 2000. Since that time impacts of drought have resulted in a significant decline in bird numbers and hunter harvest.

Hunting seasons have consistently run from the middle of September to the end of December. The limit is three birds per day with a possession limit of 9. There is a falcon season that runs from September 1 to March 1.

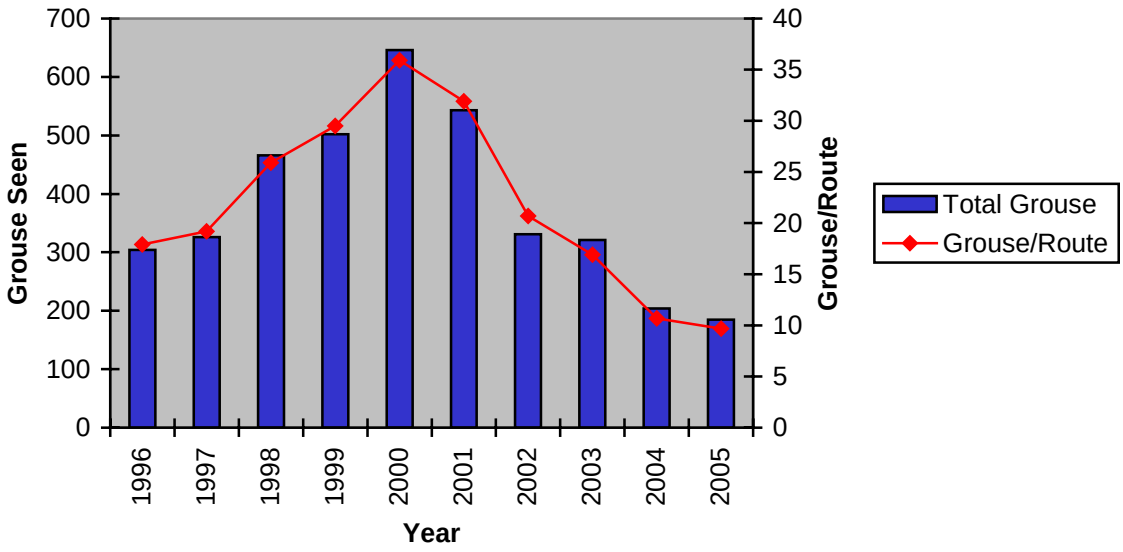
Graph 1. 1984-2003 Sharp-tailed Grouse Harvest Data for Wyoming.



In order to have another measure of population trend, nineteen lek-monitoring routes were established in southeast Wyoming in 1996. These routes are around 20 miles in length and are typically run twice during the period of peak lek attendance (in SE Wyoming between the last week of March and the first 10 days of April). Routes are run starting 45 minutes before sunrise and ending by 0730. The total number of grouse, grouse in courtship, grouse/lek, and number of leks are recorded.

Consistent with hunter harvest statistics, lek route data collected since 1996 indicates the grouse numbers increased rapidly to a peak in 2000 and have declined since that time as result of drought and poor habitat conditions. In 2005 the total number of grouse and grouse/lek observed were running around 50% below the 10-year average (Graph 2).

Graph 2. 1996-2005 Sharp-tailed Grouse lek data from southeast Wyoming.



Through spring 2005, grouse continue to decline. However, with recent above average spring precipitation, nesting and brood cover has improved substantially. Experience indicates that populations will recover with improved habitat conditions. The duration of the recovery depends on rain and the quality of CRP.

--Submitted by Martin Hicks, Wyoming Game and Fish Department