



ILLINOIS

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PRODUCTION NOTE

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FIRST ANNUAL REPORT OF THE PRAIRIE GROUSE COMMITTEE

ILLINOIS CHAPTER OF THE NATURE CONSERVANCY

June 14, 1968

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INTRODUCTION

For many years the Natural History Survey has studied and accumulated data on the ecology and status of prairie chickens in Illinois. Forbes (1912) commented on the status of the prairie chicken and Dr. Ralph E. Yeatter began work on the prairie chickens on an area near Hunt in Jasper County in 1936, which he continued until his retirement in 1963. In the summer of 1962 a cooperative study on the ecology and management of prairie chickens in southern Illinois was instituted by the Survey, the Department of Conservation, and the U.S. Bureau of Sport Fisheries and Wildlife.

Activities of the Survey biologists have been primarily concerned with determining the annual abundance and distribution of prairie chickens comprising our scattered remaining flocks; correlating land-use changes with the abundance; studying the nesting ecology; and serving as management consultants to the Department of Conservation, the Prairie Chicken Foundation of Illinois (PCFI), and more recently to the Prairie Grouse Committee (PGC) of the Illinois Chapter-The Nature Conservancy. These agencies and organizations and other private groups of conservationists have been and are now actively cooperating in the fight to save the prairie chicken.

Prairie Chicken Foundation of Illinois (PCFI) -- At a meeting of the Illinois Natural Resources Council in the fall of 1958 the necessity of forming an organization to preserve Illinois' native prairie chickens was expressed. A year later, on September 25, 1959, bylaws were adopted and the PCFI became the first group, public or private, in this state, organized with the single objective "to preserve and perpetuate the prairie chicken."

The parent membership of the PCFI was the Illinois Audubon Society, the Izaak Walton League of America, Illinois Division, The Illinois Federation of Sportsmen's Clubs, and the Nature Conservancy. On March 2, 1966, the Field Trail Clubs of Illinois became the fifth sponsoring member of the PCFI.

The stated goal of the PCFI for the first 5 years was to raise funds adequate to acquire a sanctuary system of 1,000 acres located in the best area of prairie chicken range then remaining in Illinois.

The history of the PCFI has shown that acquisition of sanctuaries has been slow; after more than 8 years the PCFI has control of only 297 acres and all of this does not have high quality nesting cover; there has been a dramatic increase in the cost of agricultural land suitable for prairie chicken sanctuaries, from slightly more than \$200 per acre in 1960 to more than \$500 per acre in 1968; and the abundance of prairie chickens at Bogota continued to decline because of a continuing deterioration of habitat conditions over the area as a whole at least through 1965.

The PCFI has done its best to interest others in the plight of the prairie chicken, to raise funds, and to acquire land, but it is obvious that their efforts have not been adequate to compensate for the rapid loss of nesting habitat and to assure the saving of the prairie chicken flock at Bogota.

Prairie Grouse Committee (PGC) -- Following the January 1965 Board Meeting of the PCFI, Dr. Lewis J. Stannard, Mr. William R. Edwards and Mr. Frank Bellrose, all on the staff of the Illinois Natural History Survey, convinced me that something more must be done if the prairie chicken was to be saved. At the North American Wildlife Conference in Washington, D. C. in March of 1965 I arranged a conference with leaders of the National Audubon Society, the National Wildlife Federation, The World Wildlife Fund, the Wildlife Management Institute, the Bureau of Sport Fisheries and Wildlife, and the Director of the Illinois Department of Conservation. About the only group not represented which should have been there was the Nature Conservancy. We obtained good advice and encouragement, but no cash because all the organizations were fully committed. However, a few telephone calls were made in behalf of our efforts in Illinois as a result of that meeting and when I returned to Illinois Frank Bellrose and I started on a visiting, letter writing, and telephoning program in Illinois and Wisconsin. We visited many of the duck hunters Frank has been working with for many years and got as far as Milwaukee to study the Wisconsin program. Through the late Mr. A. B. McDonald and others we met Mr. Stuart Otis who agreed to become Chairman of a committee for our project which did not yet have a home. It eventually occurred to someone to ask the Illinois Chapter of the Nature Conservancy to approve a special project to be known as the Prairie Grouse Committee. Mr. Cyrus Mark and others were enthusiastic about the project and carried the ball for us in getting official approval of the project. The Honorable Otto Kerner, then Governor of Illinois, consented to be Honorary Chairman.

Thus, the Illinois Chapter of the Nature Conservancy in the fall of 1965 formed a special Grouse Committee with the stated purpose of raising \$125,000 to purchase 300 additional acres of sanctuaries for prairie chickens. This committee made its first land purchase, a 17-acre tract at public auction, on October 2, 1965.

The Steering Committee, all of whom have worked many hours on this project, is composed of the following individuals:

ILLINOIS CHAPTER - THE NATURE CONSERVANCY

Stuart H. Otis, Chairman of the PGC
Cyrus Mark, Chairman of the Illinois Chapter-The Nature Conservancy
Elliott Donnelley, Treasurer
Dr. William J. Beecher, Chicago Academy of Science
Gaylord Donnelley

Frederick C. Pullman
Charles C. Haffner, III
Marshall Field

ILLINOIS NATURAL HISTORY SURVEY

Dr. L. J. Stannard, Taxonomist, Faunistic Surveys
F. C. Bellrose, Wildlife Specialist, Section of Wildlife Research
W. R. Edwards, Assoc. Wildlife Specialist, Section of Wildlife Research
R. L. Westemeier, Asst. Wildlife Specialist, Section of Wildlife Research
Dr. Glen C. Sanderson, Head, Section of Wildlife Research

The list of contributors and workers also includes the following individuals:

Bob Carey, Chicago Daily News (moved out of state)
Jack R. Dempsey
William T. Lodge, Director, Illinois Department of Conservation
Art Mercier, WBBM
Arthur B. McDonald (Deceased)

Tom McNally, Chicago Tribune
John T. Pirie, Jr.
R. Douglas Stuart
James M. Barker
John D. DeButts

George R. Cain
Clinton E. Frank
Donald M. McKellar
John M. Olin
Robert P. Gwinn

John E. Swearingen
Brooks McCormick
Mrs. Arnold Nordheim

LAND ACQUISITION

PCFI-- Table 1 indicates acreages, costs, dates of acquisition and method of purchase for the five sanctuaries obtained by the PCFI.

Table 1.-- Land Acquisitions by the PCFI.

Name of Sanctuary	Date Obtained	Acreage	Cost ¹ per Acre	Type of Purchase	Total cost of Sanctuary
Ralph E. Yeatter	5-15-62	77	\$ 225	Cash	\$ 17,325
Max McGraw	2-17-64	20	275	Cash	5,500
Donnelley	7-64	60	300	Contract ²	18,000
Jameson McCormack	11-1-65	80	312.50	Lease ³	25,000
Donsbach Tract ⁴	Summer 67	<u>60</u>	525	Contract ⁵	<u>31,500</u>
Totals		297			\$ 97,325

1 This figure does not include interest charges, if paid.

2 Paid \$1,500 down and the balance on a 10-year contract at 5% interest.

3 Title is held by purchaser who plans to donate the land to the PCFI.

4 Sanctuary has not been named.

5 Paid \$8,000 down, with \$5,000 to be paid in 1968 and the remainder to be paid at the rate of \$3,000 per year; rate of interest is 6%.

PGC-- Table 2 summarizes the information on the sanctuaries acquired by the PGC.

Table 2. -- Land Acquisitions by the PGC.

Name of Sanctuary	Date Obtained	Acreage	Cost ¹ per Acre	Type of Purchase	Total cost of Sanctuary
Cyrus H. Mark	10-18-65	17	\$ 400	Public Auction	\$ 6,800
Zimmerman Tract ²	3-1-66	140	428.57	Contract ³	60,000 ⁴
Cyrus H. Mark	4-18-66	40	435	Public Auction	17,400
Stuart H. Otis	7-1-66	58.3 ⁵	266.14	Cash	15,250 ⁶
Westfall Tract ²	4-17-67	160	280	Lease ⁷	44,800
Marshall Field III	3-1-68	<u>135⁸</u>	472.22	Cash ⁹	<u>63,750⁶</u>
Totals		550.3			\$ 208,000

- 1 This figure does not include interest charges, if paid, and is figured on the final acreage in the sanctuary.
- 2 Sanctuary has not been named.
- 3 Paid \$6,000 down and the balance on a 9-year contract at 6% interest.
- 4 Not including interest.
- 5 60 acres purchased but buildings and 1.7-acre lot sold on 4-7-67.
- 6 Cost after subtracting sale price of land and buildings.
- 7 Title is held by two purchasers who eventually plan to donate the land to the PGC.
- 8 160 acres purchased but buildings and 25 acres sold on 5-16-68.
- 9 Entire original purchase cost of \$85,000 borrowed at 6.5% interest.

I cannot emphasize enough the interest and dedication that has been shown by the group on the steering committee of the PGC. When the original 17 acres came up for sale at public auction on 2-day notice so far as we were concerned, one member of the committee gave Dr. Stannard and me a certified check for \$2,500 to pay down and then contributed most of all of the \$6,800 for the land. Another member of the committee gave us \$8,500 as a down payment on the Charles Woods' farm after Frank Bellore and I had talked to a group at the Brookfield Zoo where we pointed out that the farm was being offered for sale. This same member was responsible for the purchase of the 160-acre Westfall property near Kimmundy. He, and one or more others, bought this land after he visited the booming grounds in the spring of 1967 and we showed him the Westfall property, but pointed out that the PGC was overcommitted and that the PCFI was not interested in the land.

LAND MANAGEMENT

The controlled burning we have done on the sanctuaries is summarized in Table 3. Our most recent attempts to re-establish prairie grasses on the sanctuaries are summarized in Table 4. Some western states have had exceptional success with seeding prairie grasses following burning.

Information on age of stand strongly suggests that under current cultural practices redtop seed meadows are most attractive to nesting chickens during their 2nd and 3rd years and become increasingly less attractive thereafter. We attribute this decline in use to the buildup of dense stands of matted dead vegetation which promote cold, wet soil conditions, impede movement of prairie chickens, reduce vegetative growth, and otherwise alter the ecology of grass stands as they grow older. Old sods of domestic grasses appear to be of little value to nesting prairie chickens and should be eliminated or rejuvenated.

Thus, we cannot think in terms of acquiring land and merely seeding redtop or timothy. We must manage our nesting cover on an annual basis. We must find ways of preventing deterioration of nesting cover quality as seedings age or we must plan rotations which result in a maximum acreage each year in the preferred second and third year hayfields.

The studies initiated by the Natural History Survey in 1968 on land purchased by the PGC are of great importance. They are to determine the effects of burning, delayed haymowing, and seeding of prairie grasses to prevent deterioration of the nesting cover.

The usual form of management followed since 1963 on sanctuary grasslands has been annual combining for seed or annual mowing for weed control. Both practices result in buildups of duff on the ground. A layer of duff on the ground is

Table 3. -- Controlled burning for prairie chickens on the Bogota Study Area during late-winter 1968.

Sanctuary Name and Acreage	Date of Burn	Acres Burned	Cover Type Burned
Zimmerman 140	Feb. 28	10	A timothy-prairie grass stand and a pure redtop seed meadow
Donnelley 120*	Feb. 28	0.5	Pure redtop experimental plot
Mark 17	Mar. 18	5	Pure redtop seed meadow
Field 135	Mar. 18	5	Mixed stand of undisturbed timothy and redtop
Otis 58.3	Mar. 30	<u>20</u>	Mixed grasses, forbs, and invading shrubs and trees.
Total acres burned		40.5	

* Belongs to the PCFI and includes the Donsbach 60.

Table 4. -- Prairie grass seedings made on prairie chicken sanctuaries in Illinois on April 10-11, 1968. Grass species included 20 pounds each of big and little bluestem and 20 pounds of Indian grass spread at the rate of 3 pounds of mixed seed per acre. The seed, obtained from Nebraska, was broadcast by hand.

Sanctuary Name and Acreage	Acres Seeded	Cover Type or Soil Surface on Which Seedings Were Made
Jasper County		
Zimmerman 140	0.5	Burned-over pure redtop
	0.5	Burned-over timothy-prairie grass
	1	Undisturbed weedy forbs and grasses
	1	Mowed legumes and weeds
Field 135 (Marshall farm)	1	Burned-over timothy-redtop mixture
	2	Corn stubble
	2	Oats with a redtop-lespedeza seeding
	2	Oats with a redtop, timothy, brome, orchard grass, lespedeza, alfalfa, red clover, and ladino clover seeding
Otis 58.3	1	Burned-over orchard grass
	2	Burned-over weedy grass, forb, and shrub mixture.
Marion County		
Westfall 160	<u>7</u>	New (Sept. 1967) redtop seeding
Total	20	

important for nesting; however, with continued year-after-year combining or mowing, excessive layers of cover accumulate.

The question comes up as to why not leave sanctuary grasslands undisturbed? Although few totally undisturbed stands of grass have been available for study at Bogota, it is logical that no mowing would only further stimulate the buildup of a heavy layer of duff.

We believe that controlled burning, late season hay harvest, and limited grazing provide the best possibilities for economical maintenance of quality nesting cover on the sanctuaries. We also believe that it is desirable to compare native prairie grasses with domestic grasses as to use by nesting prairie chickens.

The following tabulations summarize the management which has been done on each sanctuary since it was acquired by the PGC.

Cyrus Mark 17-Acre Sanctuary (possession 10-18-65)

10-acre wheat field and 7-acre cornfield seeded to redtop on 10-29 and 11-18-65, respectively.

17 acres reseeded to redtop in the spring of 1966 (seeding completed 3-8-66).

1 ton of 5-20-20 fertilizer spread on the 10-acre field of new redtop on 8-17-66.

Redtop seed crop harvested on 7-acre field on 7-22-66.

Redtop seed crop harvested on 17 acres on July 25 through August 1, 1967.

North boundary fenced in 1967.

5 acres of redtop seed meadow burned 3-18-68.

Cyrus Mark 40-Acre Sanctuary (possession 4-18-66)

5-acre field of soybeans planted by sharecropper in 1966. This field was fertilized in 1966.

Tree-brush fenceline along south property line bulldozed out in 1967.

Fence will be established along south property line in 1968.

1.56 tons of 10-25-90 fertilizer spread on 25 acres on 9-8-66.

Seeded in the fall of 1966 (grasses) and the spring of 1967 (legumes).

5.7 A	Redtop 6 lb/A. Red clover 4 lb/A.
5.0 A	Brome 10 lb/A. (Seeding was not successful). Timothy 5 lb/A. Alsike 1 lb/A. Red clover 1 lb/A.
7.3 A	Red clover, foxtail and weeds (Volunteer stand)
10.5 A	Timothy 6 lb/A. Red clover 4 lb/A.
7.5 A	Redtop 6 lb/A. Korean Lespedeza 10 lb/A.
2.0 A	Waterways,
2.0 A	Woodlot.

Otis 58.3-Acre Sanctuary (possession 7-1-66)

3,500 lb of 5-27-90 fertilizer spread on 30 acres on 10-14-66.

Seeded in the fall of 1966 and the spring of 1967--or cover already present.

		<u>10-20 and 10-21-68</u>	<u>3-22-67</u>
5.8 A	Redtop Alsike clover	4 lb/A	4 lb/A 5 lb/A
5.9 A	Timothy Alsike clover	4 lb/A	2 lb/A 5 lb/A
2.9 A	Redtop	4 lb/A	4 lb/A
1.8 A	Unharvested redtop on land.		
5.3 A	Timothy Red clover	5 lb/A	2 lb/A 5 lb/A
5.3 A	Redtop Lespedeza	4 lb/A	4 lb/A 10 lb/A
5.3 A	Redtop Red clover	4 lb/A	4 lb/A 4 lb/A
6.3 A	Orchard grass and weeds on land.		
13.7 A	Weedy grass, forbs and shrubs on land.		
6.0 A	Lightly grazed pasture on land.		

20-acre field of mixed grasses, forbs, and invading shrubs and trees burned on 3-30-68.

1 acre of burned orchard grass and 2 acres of burned weedy grass, forbs and shrub mixture were seeded to prairie grass seed on April 10, 1968 (Table 4).

Zimmerman 140-Acre Sanctuary (possession 3-1-66)

Cover types present when purchased

68.4 A	Soybean stubble
27.0 A	Wheat stubble
23.0 A	Wheat seeding
10.0 A	Rye seeding
8.2 A	Redtop
1.4 A	Ponds
1.2 A	Farmstead
0.8 A	Rye grass
10.9 A	Soybean stubble. Tilled once plus tilled again and harrowed. 2.5 bu oats/A seeded on 3-17-66. 4 lb redtop/A seeded on 3-18 and 3-20-66. 100 lb/A of 18-46-0 fertilizer applied on 3-17-66. Oats and fertilizer drilled; redtop seeded by hand seeder.

- 15.0 A Soybean stubble. No seedbed preparation.
1.5 bu oats, 6 lb timothy and 5 lb red clover/A seeded on 3-11-66.
All broadcast mechanically.
- 10.0 A New rye seeding. No seedbed preparation.
4 lb redtop and 5 lb red clover/A seeded on 3-11-66.
Both broadcast mechanically.
- 10.0 A Soybean stubble. Disked once and dragged.
3.5 bu oats and 4 lb redtop/A seeded on 3-22-66.
100 lb/A of 6-24-24 fertilizer applied on 3-22-66.
Oats and fertilizer drilled; redtop broadcast mechanically.
- 10.0 A Soybean stubble. Disked once on 3-22-66.
3.5 sacks of uncleaned prairie grass seed broadcast on 3-1-66 plus 2 lb/A
timothy and 1.5 bu/A oats harrowed in.
- 27 A Wheat stubble, clover and weeds.
- 8.2 A Redtop, pine plantation, oil well, and hedge complex.
- 10.0 A Soybean stubble. Disked.
3 bu oats, 4 lb redtop and 5 lb red clover/A seeded on 3-21-66.
100 lb/A of 12-12-12 fertilizer applied on 3-21-66.
Oats and fertilizer drilled; redtop and clover broadcast mechanically.
- 10.0 A Soybean stubble. No seedbed preparation.
1.5 bu oats and 6 lb timothy/A planted on 3-11-66.
Both broadcast mechanically.
- 10.0 A New wheat seeding. No seedbed preparation.
4 lb redtop and 5 lb red clover/A seeded on 3-11-66.
Broadcast mechanically and by hand seeder.
- 13.0 A New wheat seeding. No seedbed preparation.
6 lb timothy and 5 lb red clover/A seeded on 3-14 and 3-15-66.
Both broadcast mechanically.

1m7 A Soybean stubble disked and harrowed, 10 lb/A annual rye and 15 lb/A creeping red fescue seeded on 4-18-66, broadcast mechanically. 132 lb 12-12-12 fertilizer applied on half of field, 150 lb organic (soiltrate) fertilizer applied on the other half of field. Seeding failed--dominated by annual rye.

1.7 A Wheat stubble-clover plowed, disked and harrowed on 8-17-66. 15 lb/A creeping red fescue seeded on 8-31-66, broadcast mechanically, 150 lb 5-20-20 fertilizer applied on half of field and 150 lb organic (soiltrate) fertilizer applied on the other half of field. Seeding successful.

All grain crops were combined in 1966.

In 1967, 21 acres of redtop and 4 acres of clover were combined for seed; and 9 acres of timothy-clover were mowed for hay.

10 acres of timothy-prairie grass stand and a redtop seed meadow were burned on 3-28-68. On 4-10-68 a trailer load (7' x 12'), including several species of prairie grasses and forbs, was transplanted from local old fields and roadsides to a portion of the 10-acre burn with the help of the Champaign Centennial High School

Conservation Club. On 3-25-68, 12-1-square meter plots were seeded on the 10-acre burn with prairie grass and legume seed obtained by hand from local railroad rights-of-way.

On 4-10 and 4-11-68 prairie grass seedings were made on 0.5 acre of burned pure redtop, 0.5 acre of burned timothy-prairie grass, 1 acre of undisturbed weedy forbs and grasses, and 1 acre of mowed legumes and weeds (Table 4).

Marshall Field III 135-Acre Sanctuary (possession 3-1-68)

Cover types when purchased

40.0 A Soybean stubble.

20.0 A Timothy hay meadow.

20.0 A Redtop and timothy.(undisturbed),.

23.7 A Corn stubble.

31.3 A Wheat stubble, red clover, sweet clover, plus some redtop and some timothy. This field was unclipped but baled wheat straw is in the field.

Management accomplished and planned for 1968.

19.0 acres seeded to oats with red clover, alfalfa, Korean lespedeza, ladino clover, redtop, orchard grass, field brome, and timothy seeded in the oats. Seedings were made in March 1968.

19.0 acres seeded to oats with redtop, red clover and Korean lespedeza seeded in the oats. Seedings were made in March 1968.

18.7 acres seeded to soybeans on 6-7-68.

2.0 acres planted to corn on 6-7-68 which will be left unharvested.

11.3 acres of red clover and sweet clover to be mowed for hay or combined for seed and then plowed for wheat in August-September.

10.0 acres of red clover and sweet clover to be left undisturbed.

10.0 acres of red clover and sweet clover to be burned in late summer 1968 or late winter 1969 to which a prairie grass seeding will be added in April 1969.

10.0 acres of timothy to be mowed for hay.

5.0 acres of mixed stand of undisturbed timothy and redtop burned 3-18-68.

20.0 acres of redtop and timothy to be combined for seed.

5.0 acres of timothy to be left undisturbed.

5.0 acres of timothy to be burned in August-September 1968.

5.0 acres of redtop and timothy to be burned in August-September 1968.

5.0 acres of corn stubble to be left undisturbed until burning time in

late summer 1968.

On 4-10 and 4-11-68 prairie grass seedings were made on 1 acre of burned timothy-redtop mixture, 2 acres of corn stubble, 2 acres of oats with a redtop, lespedeza and red clover seeding, and 2 acres of oats with a redtop, timothy, brome, orchard grass, lespedeza, alfalfa, red clover, and ladino clover seeding (Table 4).

Westfall 160-Acre Sanctuary (possession 4-17-67)

Cover present when purchased.

68.8 A	Wheat
37.0 A	Pasture
11.6 A	Grass and weeds (3 fields)
12.5 A	Alfalfa, timothy and red clover
6.1 A	Timothy and lespedeza
10.5 A	Weedy corn stubble
4.4 A	Trees and ditch
3.6 A	Timothy and red clover
2.4 A	Farmstead and ponds
3.1 A	Roadsides

Cover present in the fall of 1967.

37.0 A	Pasture
2.4 A	Farmstead and ponds
12.5 A	Alfalfa, timothy and red clover
38.3 A	Red clover
4.4 A	Trees and ditch
3.1 A	Roadsides
11.6 A	Grass, Korean lespedeza and weeds
6.1 A	Timothy and Korean lespedeza
3.6 A	Timothy and red clover

41.0 A seeded to redtop 9-25 and 9-26-68. The per acre application of fertilizer on the redtop seeding was 5 T. limestone, 1,000 lb rock phosphate, 100 lb super phosphate, 100 lb ammonium nitrate, and 200 lb potash.

On 4-11-68 prairie grass seedings were made on 7 acres of the new redtop seeding (Table 4).

INCOME AND EXPENSES

Total expenditures by the PGC, except for land, amounted to approximately \$13,700 through May 31, 1968. (Table 5). The figures shown in Table 5 are accurate so far as they go, except that for 1968 only the total tax bill for the Jasper County land is accurate (the taxes on the individual properties were estimated for 1968 based on the 1967 taxes); however, I am sure that a few minor items of expense have been overlooked in this report. Even though land purchases are not included in Table 5, all other costs (interest cost on land, fees for land appraisal, realtor's commissions for selling land, fees for survey and plats, and legal fees in connection with buying and selling land) are included.

Total income from all sanctuaries through May 31, 1968, has been approximately \$5,100 (Table 6). This income does not include the money obtained from the sale of the house and 1.7-acre lot on the Otis Sanctuary (nor from the sale of the lot in Newton which was taken in trade on the Otis property) and does not include the money from the sale of the buildings and 25 acres of land on the Field Sanctuary. In my calculations, I subtracted the monies received for the sale of property from the original purchase price to determine the actual cost of the property. As is indicated in Table 5, total expenses on the sanctuaries has exceeded the total income by about \$8,500. In the expense figures I have included expenses that are not part of the normal operating expenses. If these expenses, which amounted to nearly \$1,780, are subtracted from the total expenses, the operating expenses exceed income by \$6,800. In the future this difference is expected to be less because expenses for seed and fertilizer should decrease as we get fertility levels built up and as we get good grassy cover established on the sanctuaries.

PRAIRIE CHICKEN POPULATIONS IN ILLINOIS

Statewide Table 7 shows the numbers of cocks counted on 19 census areas from 1963 through 1968. These figures indicate a rather steady decline in the population during this entire period. Each year we have added new areas to the original 10 areas. Census figures for what are now (1968) 19 census areas are also shown in Table 7. These figures are not comparable from one year to the next, and they do not represent the entire prairie chicken cock population in Illinois, but they indicate the minimum number of cocks present each year. Hens usually visit the booming grounds as individuals or in small groups so it is not possible to get a complete count of the hens.

Bogota Population The population at Bogota showed a sharp decline similar to the statewide decline from 1963 through 1965; however, in the latter year the decline leveled off at Bogota (Table 8). We believe that the halt in the population decline at Bogota was in response to improving habitat conditions resulting from the sanctuaries established by the PGC and the PCFI. However, figures collected by the Natural History Survey indicate that while there are more acres of grass on PCFI and PGC sanctuaries now than in the early 1960's, there are fewer acres of total grassland within the range of the Bogota flock now than in the early 1960's. There was a total of 837 acres of nesting cover in 1963 compared with 597 acres in 1967. Also, about half of the grassland on the sanctuaries in 1967 was not available to prairie chickens. Although potentially excellent sites, the Zimmerman 140, Mark 17 and 40, Otis 58.3 and McCormack 80 (PCFI) were all still too new in 1967 to be good nesting cover. They are located where prairie chickens were found several years earlier, but where they were not present in 1967. This situation changed on the Zimmerman tract in 1968 and hopefully it will also change on the other tracts soon.

Table 5. --Expenses on Sanctuary Land

Name of Sanctuary	Item	Amount	Year
Mark	Seed	\$ 39.00	1965
	Legal Fees	30.00	
	TOTAL for 1965	\$ 69.00	
Zimmerman	Seed	\$ 451.45	1966
	Legal Fees	60.00	
	Tractor rented	45.00	
Mark	Seed	122.00	
	Legal Fees	50.00	
	Taxes-est.	157.44	
	Fertilizer	199.35	
Otis	Appraiser	25.00	
	Seed	119.50	
	Mowing lawn	10.00	
	Ad in paper	3.60	
	Plat and Survey	58.83	
	Electricity	6.24	
	Fertilizer	105.35	
	L-P gas	32.40	
	Insurance	20.50	
TOTAL for 1966	\$1,456.66		
Mark	Taxes	\$ 164.18	1967
	Fertilizer	169.02	
	Fencing	183.50	
Zimmerman	Interest	3,240.00	
	Seed	90.00	
	Taxes	459.14	
	Legal Fees	83.89	
Otis	Electricity	11.64	
	L-P gas	81.59	
	Commission	606.25	
	Legal Fees	195.70	
	Commission	177.50	
Westfall	Soil Tests	16.80	
	Fertilizer	1,043.31	
	Seed	8.63	
	Diesel Fuel	4.63	
	Limestone	796.95	
TOTAL for 1967	\$7,333.09		

Mark	Taxes-est.	\$ 170.00	1968
Zimmerman	Interest	2,880.00	
	Taxes	460.00	
Otis	Taxes-est.	451.90	
Westfall	Taxes	362.28	
Field	Insurance	59.25	
	Seed	128.60	
	L-P gas	47.19	
	Electricity	39.51	
	Appraiser	20.00	
Misc.	Survey and plat	160.38	
	Material for blind	82.74	
TOTAL for 1968		<u>\$4,861.85</u>	
TOTAL Expenses to May 30, 1968		\$13,730.60	
TOTAL Income from Sanctuaries*		<u>5,141.69</u>	
		\$ 8,588.91	

* This figure does not include contributions.

Table 6. -- Income from the Sanctuaries

Name of Sanctuary	Item	Amount	Year
Mark	Seed	\$ 39.40	1966
Zimmerman	Lease	400.00	
	Fed. Govt.	304.92	
	Wheat	323.61	
	Rye	86.43	
TOTAL for 1966		<u>\$1,154.36</u>	
Mark	Seed and Hay	\$ 362.15	1967
Zimmerman	Fed. Govt.	1,024.76	
	Seed and Hay	432.00	
Westfall	Wheat	584.17	
	Fed. Govt.	1,174.66	
TOTAL for 1967		<u>\$3,577.74</u>	
Westfall	Fed. Govt.	\$ 409.59	1968
TOTAL for 1968 to May 30		<u>\$ 409.59</u>	
TOTAL Income to May 30, 1968		\$5,141.69	

Table 7. -- High counts of prairie chicken cocks on booming grounds on 10 census areas in southeastern, Illinois 1963-68.

Year	Number of cocks on the same 10 census areas	Total number of cocks counted
1963	310*	310* (10)†
1964	227	324 (13)
1965	143	241 (15)
1966	104	172 (19)
1967	95	177 (22)
1968	70	149 (20)‡

* Cocks and hens, but mostly cocks.

† Number of areas censused each year.

‡ Three censuses discontinued after finding no birds on the areas in 1967. One area was not censused but according to local residents the remnant flock still contained six cocks.

Table 8. -- Highest counts of prairie chicken cocks at Bogota from 1963 through 1968.

Year	Number of Cocks
1963	78
1964	65
1965	42
1966	41
1967	43
1968	37

AVAILABLE LITERATURE RELATING TO THE PRAIRIE CHICKEN IN ILLINOIS

Anon. 1967. The wings grow quiet... (Pamphlet) The Illinois Chapter of The Nature Conservancy.*

Lockart, Jim 1968. The last chance for the prairie chicken. State of Illinois, Department of Conservation, 8 pp.†

Sanderson, Glen C. and William R. Edwards 1966. Efforts to prevent the extinction of the prairie chicken in Illinois. Illinois State Academy of Science Transactions 59(4): 326-333.‡

Yeatter, Ralph E. 1963. Population responses of prairie chickens to land-use changes in Illinois. Journal of Wildlife Management 27(4): 739-757.‡

Single copies of the above publications are free by writing to the following:

* Illinois Chapter, The Nature Conservancy, 1900 Dempster Street, Evanston, Illinois 60201

† Department of Conservation, 102 State Office Building, Springfield, Illinois 62706

‡ Section of Wildlife Research, Illinois Natural History Survey, Urbana, Illinois 61801

Most people reading this report will have seen copies of the pamphlet entitled "The wings grow quiet..." This brochure, prepared early in 1967, is not up to date, but it shows something of the progress we have made since then. Early in 1967 the PGC owned 257 acres in four tracts of land. As of June 1968 the PGC owns or leases 550.3 acres in six tracts of land. In addition to providing a yardstick by which recent progress can be measured, the brochure shows one of the methods the PGC Steering Committee has used to interest others in the plight of the prairie chicken in Illinois.

SUMMARY OF RESULTS TO DATE

What has the PGC accomplished so far? It has purchased 550.3 acres of land in six tracts (this includes the Westfall 160 in Marion County) for which \$113,000 has actually been paid. We still owe \$42,000 on one tract and \$53,036.48 (as of 6-3-68) on a second tract. In addition to the \$113,000 paid for land; interest, taxes (through 1968 payments), insurance, seed, fertilizer and miscellaneous items have amounted to about \$13,650 and we have a balance of about \$5,000. Thus, the PGC has raised slightly less than \$132,000 and has an additional \$32,000 pledged at \$8,000 per year for the next 4 years. However, we still owe \$95,250, plus interest. We have a purchase contract on our \$42,000 debt so that we can only pay \$6,000 per year on the principle, but the only limitation on paying off the \$53,036.48 debt is lack of money!

In addition to the refuges owned or leased by the Nature Conservancy, the PCFI has control of 297 acres in five tracts.

We are still optimistic about the future of the prairie chicken in Illinois. Good nesting cover for the 1968 nesting season is present on approximately 70 percent (about 590 A) of the land now in sanctuaries, including the 135-acre tract recently acquired by the PGC and the 60-acre tract recently acquired by the PCFI. Although new seedings are being made as soon as possible after land is acquired, it takes a minimum of 2 years to obtain the desired quality of vegetation, longer if weather conditions are unfavorable, and if money is in short supply so that funds for seed and fertilizer are inadequate. Thus, by now essentially all of the acreage in the refuge system, except for 255 acres on the three most recent acquisitions and some reseeded on the older sanctuaries, should provide suitable nesting cover. Some of the land we have purchased has had poor to medium quality nesting cover. In these instances, we have left it until we can get good nesting cover established on the cropland.

The Natural History Survey's increased efforts to define the distribution and status of the remaining chicken flocks in this state have defined a second unit of range, near Farina, which appears to offer good potential for preserving a second flock if enough land is acquired in the immediate future. This flock is centered on a 20-mile long stretch of relatively contiguous chicken range extending from Forbes State Park (Marion County), and an area west of the park; north to LaCleda (Fayette County); and northwest to an area near Loogootee (overlapping Fayette and Effingham counties). Seventy-three (40%) of the 182 cocks located on the Illinois booming grounds in 1966 were distributed along this range. This distribution is in contrast to the relatively isolated flock at Bogota numbering 41 cocks which utilize a relatively few square miles. Of course, the 160-acre acquisition recently made by the PGC near Kinmundy is strategically located in relation to this flock. Another key tract for this flock is a 300-acre property located at the southeast edge of Farina which was in the Federal CR program until this year (1968). Loss of this tract as nesting cover would be a severe blow to the Farina flock and we are attempting to arrange for the Department

of Conservation to lease 80 acres of nesting cover on this farm starting next year.

The two groups, the PGC and the PCFI, relying entirely on donated funds, have more than met the immediate goal of 500 acres of managed grassland in a sanctuary system near Bogota. However, this is far short of what is desirable to save this species from extinction in Illinois. We believe that a more realistic, long-term objective would be the development of a 600- to 1,000-acre sanctuary surrounded by 10 to 20 satellite sanctuaries, each 20 to 80 acres in size, distributed over a 10- to 15-square-mile area. We would like to see at least three such sanctuary systems developed, and we have made a start on a second sanctuary; the one in Marion County. Most of us agree that the next land acquisitions should be in Marion County.

The Bogota flock stopped its precipitous decline in 1965, remained essentially unchanged in 1966, and even increased slightly in 1967. This flock showed a slight decline from 1967 to 1968, but on areas away from the refuges the steep decline continued. We must remember that with the present low number of chickens, a sizeable percentage increase will not add up to many birds. Thus, we believe that 2 or 3 more years will be required before we can expect a noticeable increase in the flock at Bogota.

In addition to providing nesting refuges for prairie chickens, the nesting sanctuaries also provide habitat for many other species of prairie birds and mammals. Upland plovers nest on the refuges and their courtship flights are beautiful to watch. In addition, we are making slow but steady progress in restoring prairie plants to these areas.

Some of us sometimes wonder if we spend more time than we should working on projects like saving the prairie chicken. However, we nearly always all agree that the time we spend, and the money spent by a small group of you in the Nature Conservancy, and similar groups, may be the most important contributions all of us can make to the future. Our other contributions--our scientific publications and your companies--may be gone and forgotten in a hundred years, but if we set aside land for natural areas and for the preservation of species, these areas should stand as permanent monuments to all who cared enough to work for their creation. If we fail future generations in this area, we will be condemned, and rightfully so, for not working hard enough.

SUMMARY OF NEEDS THROUGH 1970

Table 9 summarizes the estimated financial obligations of the PGC from July 1, 1968, through 1970. All expenses shown in this table, although estimates, are rather fixed obligations except for the \$10,000 payments on the Marshall Field III Sanctuary in 1969 and 1970. We have no commitment to pay a specific amount annually on this loan; however, at the rate shown this loan would not be paid until 1974. In order to retire the debt on the Field Sanctuary by the end of 1970 we would need to pay an additional \$10,000 on the principal in 1968 plus total principal payments of \$21,518.24 each in 1969 and 1970.

Table 10 summarizes the expected income from pledges and sanctuaries from July 1, 1968, through 1970. One pledge of \$8,000 per year runs through 1972 and a second pledge is for the principal and interest on the Zimmerman tract.

Table 11 shows the additional money needed each year through 1970 in order to meet current obligations. This money is in addition that that currently pledged and expected as income from the sanctuaries. Two sets of figures are shown. The

Table 9. -- Summary of financial obligations from July 1, 1968, through 1970.

	ESTIMATED EXPENSES			
	1968	1969	1970	TOTAL
Payment on Zimmerman Tract	paid	\$ 6,000	\$ 6,000	\$12,000
Payment on Marshall Field III Sanctuary	----	10,000*	10,000*	20,000
Interest on Zimmerman Tract	paid	2,520	2,160	4,680
Interest on Marshall Field III Sanctuary	3,500	3,450	2,800	9,750
Operating Expenses				
Taxes	paid	1,500	1,600	3,100
Seed	100	250	200	550
Fertilizer	1,200	1,200	1,200	3,600
Misc.	<u>400</u>	<u>1,000</u>	<u>1,000</u>	<u>2,400</u>
TOTALS	\$5,200	\$25,920	\$24,960	\$56,080

* There is no obligation to pay a specific amount on this loan; however, at this rate, the loan will not be repaid until 1974. In order to pay off this debt by the end of 1970, we would need an additional \$10,000 in 1968 plus total principal payments of \$21,518.24 each in 1969 and 1970

Table 10. -- Income from July 1, 1968, through 1970.

	ESTIMATED INCOME				Working Cash Balance as of 7-1-68
	1968	1969	1970	TOTAL	
Pledges	paid	\$8,000	\$8,000	\$16,000	
	paid	8,520	8,160	16,680	
Sanctuaries					
Federal Govt.	1,600	2,000	2,000	5,600	
Sale of seed, grain & hay	<u>1,200</u>	<u>1,200</u>	<u>1,200</u>	<u>3,600</u>	
TOTALS	\$2,800	\$19,720	\$19,360	\$41,880	\$5,000

first set assumes that principal payments of \$10,000 each will be made on the Field Sanctuary in 1969 and 1970. At this rate \$33,036.48 on the Field Sanctuary and \$30,000 on the Zimmerman tract would be owed at the end of 1970. The second set of figures in Table 11 assumes that the debt on the Field Sanctuary would be liquidated by the end of 1970.

Table 11, -- Summary of money needed from July 1, 1968, through 1970.

	<u>1968*</u>	<u>1969*</u>	<u>1970*</u>	<u>Total</u>	<u>1968</u>	<u>1969</u>	<u>1970</u>	<u>Total</u>
Expenses	\$5,200	25,920	24,960	\$56,080	\$15,200	36,800	35,100	\$87,100
Income	<u>2,800</u>	<u>19,720</u>	<u>19,360</u>	<u>41,880</u>	<u>2,800</u>	<u>19,720</u>	<u>19,360</u>	<u>41,880</u>
Additional Money Needed	\$2,400	6,200	5,600	\$14,200	12,400	17,080	15,740	\$45,220

* At this rate \$33,036.48 would be owed on the Field Sanctuary and \$30,000 on the Zimmerman tract at the end of 1970.

At this rate only \$30,000 would be owed on the Zimmerman tract at the end of 1970; the loan on the Field Sanctuary would be paid.

Thus, with no new obligations, an additional \$15,000 is needed by the end of 1970. If an additional \$45,000 were available by the end of 1970, the annual obligation could be reduced to approximately \$8,000 in interest and principal on the Zimmerman tract and \$4,000 in operating expenses. Income from the sanctuaries should go a long way toward meeting operating expenses. Of course, every extra dollar paid in 1968 will do double duty by reducing the expenditure for interest.

The above figures do not allow for making new acquisitions to save the prairie chicken flock in Marion County. Additional sanctuaries should be acquired in Marion County before the end of 1970 if we expect to save the flock from extinction.