FINAL REPORT

RESTORING THE GREATER PRAIRIE CHICKEN TO SOUTHWESTERN MINNESOTA

Brian Winter
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Minnesota Environment and Natural Resources Trust Fund
ML 1999, CH. 231, Sec. 16, Subd. 13(d)

$60,000

In an effort to re-establish a greater prairie chicken (Tympanuchus cupido pinnatus) population in vacant grassland habitat in southwestern Minnesota 126 birds (84 cocks, 36 hens, 6 young of the year) were translocated from northwestern Minnesota, 1999-2001. Birds for translocation were initially captured on booming grounds during the breeding season radio-marked and released in place. A portion were recaptured by night lighting during July-September. The birds were released at six different release sites in the vicinity of the Lac qui Parle Wildlife Management Area. Fifty-three birds (46 cocks, 7 hens) were translocated in 1999 and 60 (25 cocks, 29 hens, 6 young of the year) in 2000. Thirteen cocks were translocated during May and June 2001. All were radio-marked to monitor general movements, document survival and mortality factors. Two booming grounds were located in 2000, one with six cocks and one with four. In 2001, these two booming grounds each had five cocks. No new booming grounds were established as a result of the releases in 2000. Efforts to establish five booming grounds failed as birds moved from the two new 2000 release sites to the areas with the two established booming grounds. Seven nests were located, one in 2000 and six in 2001. Four of the seven hatched and one nest contained eight ring-necked pheasant eggs. Survival of translocated radio-marked birds from release to following breeding season (8-10 months) was 35.5%. Predation by raptors appeared to be the main mortality factor. Future releases should concentrate on supplementing existing booming grounds and establishing new ones 10 to 15 miles away. The long-term goal should be to link the ranges of prairie chicken populations in Minnesota with those in South Dakota and North Dakota.

Date of Report: July 1, 2001

LCMR Final Work Program Report

Date of Workprogram Approval: June 16, 1999

Project Completion Date: June 30, 2001

LCMR Work Program 1999

I. Project Title: Restoring the Greater Prairie Chicken to Southwestern Minnesota

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Total Biennial Project Budget:

$LCMR: $60,000	**$MATCH**
-$LCMR spent: $60,000	**-$MATCH spent: $0**
=LCMR Balance $0	**=MATCH Balance:**

A. Legal Citation: ML 1999,[Chap. 231], Sec.[16], Subd. 13d.
Restoring the Greater Prairie Chicken to Southwestern Minnesota 60,000

Appropriation Language: Restoring the Greater Prairie Chicken to Southwestern Minnesota $30,000 the first year and $30,00 the second year are from the trust fund to the commissioner of natural resources for an agreement with the Minnesota Prairie Chicken Society to restore the greater prairie chicken to appropriate habitat.

B. Status of Match Requirement: NA

II. and III. FINAL PROJECT SUMMARY:

In an effort to re-establish a greater prairie chicken (Tympanuchus cupido pinnatus) population in vacant grassland habitat in southwestern Minnesota 126 birds (84 cocks, 36 hens, 6 young of the year) were translocated from northwestern Minnesota, 1999-2001. Birds for translocation were initially captured on booming grounds during the breeding season radio-marked and released in place. A portion were recaptured by night lighting during July-September. The birds were released at six different release sites in the vicinity of the Lac qui Parle Wildlife Management Area. Fifty-three birds (46 cocks, 7 hens) were translocated in 1999 and 60 (25 cocks, 29 hens, 6 young of the year) in 2000. Thirteen cocks were translocated during May and June 2001. All were radio-marked to monitor general movements, document survival and mortality factors. Two booming grounds were located in 2000, one with six cocks and one with four. In 2001, these two booming grounds each had five cocks. No new booming grounds were established as a result of the releases in 2000. Efforts to establish five booming grounds failed as birds moved from the two new 2000 release sites to the areas with the two established booming grounds. Seven nests were located, one in 2000 and six in 2001. Four of the seven hatched and one nest contained eight ring-necked pheasant eggs. Survival of translocated radio-marked birds from release to following breeding season (8-10 months) was 35.5%. Predation by raptors appeared to be the main mortality factor. Future releases should concentrate on supplementing existing booming grounds and establishing new ones 10 to 15 miles away. The long-term goal should be to link the ranges of prairie chicken populations in Minnesota with those in South Dakota and North Dakota.

IV. OUTLINE OF PROJECT RESULTS:

Result 1. Trap 200 greater prairie chickens in NW MN

LCMR Budget $18000
Balance $0

A grand total of 126 (84 cocks, 36 hens, 6 young of the year) greater prairie chickens were translocated from northwestern Minnesota to the vicinity of the Lac qui Parle Wildlife Management Area in southwestern Minnesota, 1999-2001. The purpose was to re-establish a prairie chicken population in vacant grassland habitat. These birds were taken from the areas surrounding 20 different booming grounds in four counties in northwestern Minnesota (Polk=15, Norman=33, Clay=25 and Wilkin=53). Birds were released during May-September at six different release sites: Chippewa Prairie, Plover Prairie, Hegland Waterfowl Production Area (Hegland WPA), Big Stone National Wildlife Refuge (Big Stone NWR), Victory Wildlife Management Area (Victory WMA) and Sleeping Bison. These release sites are owned and managed by The Nature Conservancy, U. S. Fish and Wildlife Service, Minnesota Department of Natural Resources and the private sector respectively. The majority of adjacent lands are in

private ownership. The maximum distance between release sites was 17.4 miles from Big Stone NWR to Chippewa Prairie and minimum Hegland WPA and Big Stone NWR to Plover Prairie 2-3.5 miles. Birds were transported in dark boxes by automobile or truck and released within 12-24 hours of capture. All birds released were individually color leg-banded and radio-marked to document general movements and monitor survival and mortality factors.

A total of 275 birds (162 in 1999 and 113 in 2000) were captured and radio-marked on booming grounds in Polk, Norman, Clay, and Wilken counties in northwestern Minnesota during the breeding season (April, May and June) in 1999 and 2000. These birds were released in place to be recaptured by night lighting during July-September and translocated when they were molting their flight feathers. Past research has indicated that in contrast to the breeding season it is during summer when translocated prairie chickens are least likely to wander away from their release sites. Of the birds captured during the breeding season approximately half or 142 survived to summer and were available for translocations. The losses of radio-marked birds was attributed to radio failure (15-30 percent), mortality and only four hens with broods were translocated.

Fifty-three prairie chickens (46 cocks, 7 hens) were released in 1999. Twenty-four (22 cocks, 2 hens) were translocated during period May 27 to June 6 and 29 (24 cocks, 5 hens) during the period 19-29 July. Birds were released at four predetermined release sites: Big Stone NWR 10 (9 cocks, 1 hens), Hegland WPA 9 (8 cocks, 1 hen), Plover Prairie 18 (16 cocks, 2 hens) and Chippewa Prairie 16 (13 cocks, 3 hens).

In 2000, sixty birds (25 cocks, 29 hens and 6 young of the year) were translocated from northwestern Minnesota population during August and September. These birds were released at five separate release sites: Plover Prairie 16 (4 cocks, 9 hens, 3 young of the year), Hegland WPA 3 (0 cocks, 3 hens 1 young of the year) Chippewa Prairie 18 (5 cocks, 11 hens, 2 young of the year), Sleeping Bison 15 (10 cocks, 5 hens) and Victory WMA 7 (6 cocks, 1 hens). The latter two were new release sites in 2000.

Four hens with broods were translocated in 2000 and none in 1999. Thirteen birds, all cocks, were released during June in 2001 all at the Victory WMA release site.

One nest was located in 2000 and six in 2001. Nesting success (one egg hatched) was 57.1% (4 of 7). The lone nest hatched in 2000 and 3 of 6 hatched in 2001. No chicks were fledged from the single nest that hatched in 2000 and results from the 2001 hatch will not be available in time for this report. One of the six prairie chicken nest (14.3%) examined in 2001 contained eight ring-necked pheasant eggs. This nest hatched both prairie chicken and pheasant eggs.

The birds released in 1999 established two booming grounds in 2000, one with six cocks at Chippewa Prairie and the other with four cocks at Plover Prairie. In April 2001 there were only two booming grounds located. One with 5 cocks at the Chippewa Prairie release site and one with 5 cocks at the Plover Prairie release site. All booming grounds and nests were located within a mile of the release sites. There were no new booming grounds located in 2001 despite the

release of birds at two new release sites, Sleeping Bison and Victory WMA.

The project goal was to establish five booming grounds. Birds were released at six different sites at least 3-5 miles apart. However, movements of radio-marked individuals indicated that birds abandoned three of the release sites: Hegland WPA, Big Stone NWR and Sleeping Bison. These birds moved 2-9 miles to either the Chippewa Prairie or Plover Prairie areas. This suggests an attraction to the established birds or booming grounds and/or better habitat at the Plover Prairie and Chippewa Prairie areas. One radio-marked cock did survive and establish at the Victory WMA release site but no booming ground was ever located in this area. In order to establish additional booming grounds in southwestern Minnesota, birds should be released more than 5 miles from the existing booming grounds probably 10 or more miles away.

Survival from release to the following spring (8-10 months) for radio-marked birds was 34% in 1999-2000 and 37% in 2000-2001. This is in contrast to annual survival of 47% reported by Hamerstrom and Hamerstrom in 1973 and the 50-65% survival of prairie chickens translocated during the summer in the successful North Dakota translocation project. The main mortality factor was predation, and based on observed remains raptors appeared to be the main predator. At least two birds were thought to have been shot by hunters.

Limited radio tracking indicated that movement patterns of radio-marked birds are comparable to those followed in other areas; night roost in undisturbed native grass and grass forb cover and feed in agricultural fields (corn, soybeans). When snow covered picked corn and soybeans fields the chickens shifted their feeding activities to the standing corn food plots. Once the snow became deep enough the birds snow burrowed until it became crusted at which time they night roosted in the cattail and wetland sedge cover.

Future releases should concentrate on supplementing existing booming grounds and establishing new ones 10 to 15 miles away. The long-term goal should be to link the ranges of prairie chicken populations in Minnesota with those in South Dakota and North Dakota. There is also a need to obtain a better understanding of the relationships and interactions between prairie chickens and ring-necked pheasants in a common area.

Result 2. Fit radio transmitters on 150 prairie chickens (150 birds will be fitted with transmitters due to cost of transmitters; 200 are needed to be caught to assure proper age and sex ratios, and to assure all fitted birds are healthy.)

LCMR Budget $15000
Balance $0

See text under Result #1 for additional detail

Result 3. Re-trap and translocate summer molting prairie chickens to establish five booming grounds. (An airplane is needed to locate far moving birds, as prairie chickens are very mobile, and the plane is the most efficient method.)

LCMR Budget $23000
Balance $0

See text under Result #1 for additional detail

Result 4. Supplement summer molt birds with wild trapped birds using direct transplant.

LCMR Budget $4000
Balance $0

V. DISSEMINATION:

Information regarding the status of this project will be disseminated to the public via press releases and popular news articles. Media coverage will be encouraged. It is expected that the MNDNR's Farmland Wildlife Unit will actively collect and disseminated data in their normal fashion.

VI. CONTEXT:

A. Significance: The greater prairie chicken is a species of special concern in Minnesota. Once abundant throughout much of the State, its current range is restricted primarily to the beach ridges of glacial Lake Agassiz. Prairie chickens no longer exist in southwestern Minnesota. However, significant state and federal habitat acquisition programs coupled with recent long term agricultural programs such as the Conservation Reserve Program have improved habitat conditions in select areas of southwestern Minnesota to a point where prairie chickens can again be present.

In recent years Minnesota prairie chickens have been successfully relocated in North Dakota and Illinois, using the same techniques proposed for this project. Dr. John Toepfer, the proposed principle investigator for this project, personally developed these successful techniques. He has been personally involved in nearly all successful efforts to restore prairie chicken populations throughout North America, and is considered to be the preeminent expert in this field. Dr. Toepfer has reviewed the proposed Minnesota relocation site, and he is confident of the area's suitability to support prairie chickens.

Recent prairie chicken restoration efforts have also taken place in Colorado, Illinois, Iowa, Missouri, South Dakota, North Dakota, and Wisconsin. Restoring the greater prairie chicken to

southwestern Minnesota is a goal of the MNDNR's long-range plan, the Lac qui Parle Area Plan, and the Big Stone NWR long range plan.

B. Time: If additional funding is secured, expanding this project beyond the two years may be investigated. For now, the project will be completed in two years.

C. Budget Context: This project has no LCMR budget history. The MNDNR funded a student intern to prepare a feasibility report regarding prairie chicken restoration-$4000. The MNDNR Nongame Program further employed this student intern to complete the report-$1000. The Minnesota Prairie Chicken Society contributed $200 for a GIS mapping project associated with the report. Pheasants Forever and the US Fish and Wildlife Service contributed for travel expenses for the student intern-$550.

1. BUDGET

Personnel: John Toepfer, Principle Investigator	$11,000
Research Assistant	$11,000
Trappers	$9,100
Equipment, including mileage and rentals	
Mileage	$9,000
Aircraft rental	$1,400
Radio transmitters	$15,000
Misc. Supplies	$1,500
Communications	
Phone	$500
Unanticipated Expenses	$1,500
Total	**$60,000**

VII. COOPERATION:

The Minnesota Prairie Chicken Society is a private conservation organization interested in prairie chickens and native prairie. As it relates to this project, the MNPCS will work very closely with the MNDNR, the USFWS, Pheasants Forever, and The Nature Conservancy. The MNDNR will have strong oversight responsibilities for this project, and we anticipate and welcome their intimate involvement in this project. Cooperation from MNDNR staff, including field staff support, will be necessary for the completion of this project.

VIII. LOCATION:

The counties of Big Stone, Chippewa, Lac qui Parle, and Swift Counties are in the project area. Nearby towns include Appleton, Madison, Montevideo, and Ortonville.

IX. Reporting Requirements:

Periodic workprogram progress reports will be submitted not later than January 2000, September 2000, and January 2001. A final workprogram report and associated products will be submitted by June 30, 2001.

X. Research Projects: na

Attachment A- Deliverable Products and Related Budget

	Result 1	Result 2	Result 3	Result 4	Total
Budget Item	Trap 200 birds	Fit Radio Transmitters	Retrap, translocate, establish 5 Booming grounds	Supplemental transplant	
Contract Professional	$18000	$15000	$23000	$4000	$60000

The entire amount requested from the LCMR will be used for a professional contract to achieve the above results. No money is being requested by the Minnesota Prairie Chicken Society to administer the grant. Budget detail, provided to the MNPCS by the proposed principle investigator Dr. John Toepfer, is seen on page 4, under 1. Budget.

Prairie Chicken Release Sites
Upper MN River Valley
Southwestern Minnesota