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PRODUCTION NOTE

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F: Wild Turkey
Project

**Segment 2 Annual Report
FY 1999**

Project W-131-R: Population Ecology of Eastern wild Turkeys in Illinois

Progress report to
Illinois Department of Natural Resources

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1998-1999 Activities

Job 101.1; Title: Selection of study areas for Study 101

Complete.

Job 101.2; Title: Database assembly and identification of meaningful habitat descriptors

Construction of the state-wide database is complete and consists of over 4000 turkey and non-turkey sections that have been standardized for observer (hunter) effort. Each section was processed through the program FRAGSTATS to generate a set of variables describing habitat features and landscape context. This step required extensive computer time that needed to be scheduled around other projects.

Job 101.3; Title: Comparison of landscape level habitat features and construction of a habitat suitability model for turkeys in Illinois.

No activity during this segment. This job will be completed during FY2000.

Job 101.4; Title: Analysis and reporting.

No activity during this segment. This job will be completed during FY2000.

Job 102.1; Title: Selection of intensive study sites

Complete.

Job 102.2; Title: Capture and radio-marking of wild turkeys

We began baiting in Clark County in late December 1998. However, heavy snowfall in early January 1999 covered the initial bait piles. We re-baited on 5 January, establishing 4 sites. We captured turkeys on January 7, 8, 9, and 14 on 3 different bait sites. We had a total of 34 bait nights in Clark County. We shot the net 5 times and captured 50 turkeys (12 males, 38 females). The most we captured at one time was 19 and the least was 0 when the rockets had become covered with ice and all birds escaped due to poor net flight. One hen escaped during handling and another died from unknown causes under the net. We attached transmitters to 33 hens.

We began baiting in Cass county on 20 January at one bait site. We captured turkeys on February 12 and 18 at that site. We had a total of 30 bait nights in Cass county. We shot the net 2 times and captured 30 turkeys (1 male, 29 females). We captured 15 birds both times. One hen escaped from under the net before we could reach her. We attached transmitters to 26 hens.

Job 102.3; Title: Monitoring radio-equipped turkeys and identification of mortality sources.

Since 1 July 1998, we have taken approximately 821 radio-locations on up to 33 radio-tagged wild turkey hens in Cass county. In Clark county, we have taken approximately 511 radio-locations on 33 hens since we first captured birds there on 7 January 1999. We have taken 1-4 radio-locations/week for each hen, but all hens have been more intensively monitored to assess survival.

Kaplan-Meier survival estimates for the first half of 1999 were similar for Cass and Clark counties. Survival estimates from 1/3/99-6/26/99 were 0.53 and 0.55 for Clark and Cass counties, respectively. Annual hen survival in Cass county from 1/19/98-1/23/99 was estimated at 0.44, and from 6/28/98-6/26/99 was 0.40.

Unlike in 1998, in 1999 several deaths occurred prior to the start of the nesting season (around 4/15) in both counties. In Cass county, 4 of 12 deaths in calendar year 1999 occurred prior to the start of nesting. But in Clark county, 10 of 15 deaths occurred prior to the start of nesting. This difference was probably related to more severe weather during the winter of 1998-1999 then during the winter of 1997-1998, which may have made turkeys more susceptible to predation. The numbers and causes of deaths from 7/1/98-6/30/99 were similar for both counties and are as follows.

	Clark	Cass
Predation-Unknown	4	3
Predation-Coyote	2	1
Predation-Coyote?	5	6
Predation-Aerial Predator	0	1
Poaching	2	0
Storm Related	1	1
Unknown	1	3

Causes of deaths were determined from sign at the site where the carcass was found including tracks, scat, and location of the carcass. In addition, 3 hens were submitted to the University of Illinois, College of Veterinary Medicine Diagnostics Laboratory for necropsy.

During the 1999 spring turkey season, 1 of 12 banded gobblers was reported harvested in Clark county and neither of 2 banded gobblers were reported harvested in Cass county.

Job 102.4; Title: Estimation of nesting rates at intensive study sites.

Of 23 and 29 hens that entered the nesting season in Clark and Cass counties respectively, we have marked 16 nests in Clark county and 12 in Cass county. However, not all nesting attempts have been confirmed. Our estimates of nesting rate are conservative, and differences reported may be related to differences in our ability to recognize nesting attempts between study areas.

Job 102.5; Title: Estimation of hen success at intensive study sites.

A full estimate of hen success for the 1999 nesting season cannot be made until the end of nesting season. However, nest success for all confirmed and completed nest attempts to date is 0.63 in Clark county and 0.38 in Cass county (n = 8 in both cases). While nest success appears to be higher in Clark county in 1999, 2 hens were killed (1 poaching and 1 predation) within 1 week after successfully hatching their nest. The following table lists the nest fate of all confirmed nest attempts in each county.

	Clark	Cass
Hatched	5	3
Nest predated	2	1
Nest predated & hen killed	0	3
Nest abandoned	1	1

Job 102.6; Title: Estimation of poult survival.

We will began conducting 4-week flush counts to assess poult survival the week of 6/28/99. Preliminary data is not yet available.