



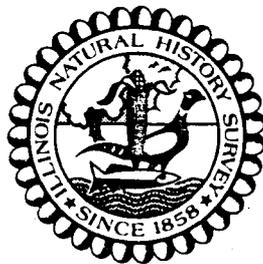
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ILLINOIS NATURAL HISTORY SURVEY



Section of Wildlife Research

Illinois Forest Game Investigations

W-87-R-9

Quarterly Federal Aid Performance Report

by

Charles M. Nixon, James H. Witham, Jon M. Jones
Illinois Natural History Survey

1 July through 30 September 1987

QUARTERLY FEDERAL AID PERFORMANCE REPORT

Illinois Forest Game Investigations

W-87-R-9

Charles M. Nixon, Illinois Natural History Survey, Champaign

1 July through 30 September 1987

Study No. VII-D; Title: Harvest Strategies for Illinois Deer Herds

Job VII-D-1; Title: Population dynamics of the Illinois deer herd--
current status, harvest analysis, and formulation
of alternative management strategies.

A programming error in one of the programs used to compile county harvest data was located, corrected, and new programs forwarded to the IDOC. Modelling of county harvest data indicates that the following counties should be placed on a watch list for 1987 because current harvest levels are high enough to reduce deer numbers in these counties:

Region 1 - McHenry, Ogle, Stephenson, Winnebago.

Region 2 - DeKalb, DeWitt, Kendall, Lee, McLean, Will.

Region 3 - Fulton, Mercer, Peoria, Schuyler, Tazewell, Woodford.

Region 4 - Macoupin.

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Region 5 - Champaign, Christian, Logan, Menard.

Region 6 - Clark, Douglas, Edgar, Edward, Lawrence, Richland,
Vermilion, Wabash.

Region 7 - Bond, Clay, Crawford, Perry.

Region 8 - Gallatin, Jackson.

These counties will be evaluated again after the 1987 harvest. If the IDOC wishes to maintain present numbers or increase deer in these counties, they may have to modify present deer permit quotas.

Job VII-D-2; Title: Life history and ecology of farmland deer.

The entire quarter was spent completing the analysis of the nearly 22,000 radio fixes for radio marked deer on the Platt County Study Area. A brief review of some of the findings:

(1) Yearling and adult males were sedentary, had home ranges of comparable sizes, and showed significantly larger home ranges than females of comparable ages throughout the year.

(2) Winter ranges of both sexes were significantly larger than summer ranges.

(3) Related females showed significantly more overlap in home ranges throughout the year than unrelated deer.

(4) Home range overlap was most evident in winter and least apparent during parturition.

(5) Resident females in winter selected early and intermediate successional upland forests (<50 years old), avoided bottomland forests, and showed no preference or avoidance for upland oak-hickory mature forests. Forage crops (tame hay, wheat, alfalfa-clover) were preferred while selection for treated row crops (disced, chiseled, plowed) was neutral.

(6) Females selected early and intermediate successional forests and forage crops as sites for parturition. They avoided corn and upland mature oak-hickory forests.

(7) In summer, females used soybeans, oak-hickory forests, and forage as they encountered them within their home ranges. Females avoided bottomland forests and corn fields, and selected hay fields and early and intermediate successional forests.

(8) Home ranges of females during parturition and the first month of fawn rearing were significantly smaller than summer and winter ranges. Radio marked females showed considerable but not complete fidelity to a parturition site each year.

(9) Females also showed considerable but not total fidelity, in subsequent years, to winter and summer ranges selected as yearlings.

(10) For females, home range size in summer was significantly related to the number of radio fixes used to calculate the ranges; this relationship was not true for winter or parturition ranges.

(11) For daylight hours only, the distance from deer location to the nearest site of human activity (houses, roads, etc.) was not significantly different between summer and winter but did differ significantly between the sexes for yearlings (males - 253.4 m, females - 145.4 m) and adults (males - 252.7 m, females - 149.4 m).

Job VII-D-3; Title: Strategies for developing and managing wintering sites for deer in central and northern Illinois.

Job inactive this quarter.

Job VII-D-4; Title: Data analysis and preparation of manuscripts and reports.

The annual report of progress was prepared and submitted to the IDOC.

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Illinois Natural History Survey

DATE: 30 September 1987

QUARTERLY FEDERAL AID PERFORMANCE REPORT

Urban Deer Study-Illinois Natural History Survey

W-87-R-8

James H. Witham, Illinois Natural History Survey, Elgin

Jon M. Jones, Illinois Natural History Survey, Elgin

1 July through 30 September 1987

Study No. VII-D; Title: Urban Deer Study.

Job 104.1: Biology and ecology of urban deer.

We continued to radio monitor 11 deer previously released on the Joliet Army Training Area (JATA). Six deer have remained on JATA, 3 used the adjacent Joliet Army Ammunition Arsenal, and 2 were continually found on private property. Limited movements were displayed by most deer (see annual report). One doe has repeated a 15-km movement from JATA to Wilton Center. The movement to/from Wilton Center was documented during the last 2 years, and was suspected, but not verified, in the first year post release. Relocations of deer will continue on monthly intervals unless unusual long-distance movements are detected. Telemetry data were summarized. UTM (universal transverse mercator grid) coordinates were determined, and distances between consecutive relocations were estimated by computer software.

Job 104.2; Title: Deer range evaluation for metropolitan northeastern Illinois.

Aerial photographs are being used to determine land use changes over a 225-km² area in northwest Cook County. The study area is

centered on Busse Woods Nature Preserve (BWNP). Photographs taken during 1949, 1964, 1970, and 1985 were divided into cells equivalent to 1-ha ground units. Each cell is classified by development, vegetation, water, and roads. Geographic information system software (PMAP) is being used to integrate and analyze these data. Classification for 3 years (1949, 1970, and 1985) was completed this quarter. Data are currently being entered and verified. Preliminary results show dramatic changes in urban development over the 36-year-period, 1949-85. The resultant effect on deer is a loss of habitat, localization of animals, and obligate dependency on BWNP resources.

Analyses of plant phenology in Busse Woods was completed during July and August.

Field measurements of canopy closure were completed in August. Fifty photographs (slides) were taken in each of 4 Busse woodlots. Slides will be mounted and projected onto a dot grid to determine mean percent canopy closure for each area.

Deer-damaged elms (*Ulmus* sp.) originally marked in March 1987 were relocated in August. Ninety-eight percent of the original sample of 256 trees were remeasured, species identified (leaves needed for positive ID), and status determined (vigor rating if alive, or, mortality). Analysis of bark samples collected last quarter was initiated in August by INHS Chemical Analytical Laboratory. The fates of elms by size class and possible explanations for preference for elms, will be summarized in future progress reports.

Job 104.3; Title: Management strategies and implementation of experimental control of urban deer.

A serious deer problem continues to exist on O'Hare International Airport. INHS personnel, in consultation with IDOC, have taken an active role in encouraging greater local responsibility for deer management. We continued to consult with O'Hare officials on interim deer management needs. Drive nets previously purchased by INHS were loaned to O'Hare for construction of a modified corral trap. INHS has written deer management recommendations that will be forwarded to O'Hare officials.

Woven wire fence was provided to Lake County Forest Preserve District for construction of a deer-proof enclosure on Ryerson Conservation Area. Substantial deer browsing damage was noted by LCFPD naturalists during spring 1987. LCFPD will monitor the response of vegetation in absence of deer browsing pressure within the enclosure. A similar offer was made to DuPage County Forest Preserve District (DCFPD) to provide fence materials for two 0.1-ha enclosures on Waterfall Glen Forest Preserve. Winter helicopter counts of deer (white-tailed and fallow deer) by INHS/DCFPD indicated ungulate density on Waterfall Glen was higher than any previously recorded by INHS in northeastern Illinois. DCFPD officials continue to vacillate on whether there is a need to monitor deer impact on vegetation on this preserve.

G.C. Sanderson and J.H. Witham discussed future deer management needs with the Director of the Illinois Department of Conservation, and, the General Superintendent of the Cook County Forest Preserve District. A proposal for a cooperative urban deer management program was subsequently drafted by INHS.

Elk Grove Village and Rolling Meadows Police Department records were examined for deer-vehicle accidents that occurred between January and June 1987. Both villages are adjacent to the Ned Brown Preserve where experimental herd reduction was implemented. No deer-vehicle accidents were recorded by either police department during this 6-month period.

Job 104.4; Title: Data base management, analysis, and reporting on urban deer research.

A written summary of project objectives was provided to the IDOC at their request.

Five calls were received on injured or dead deer during this quarter. Although we no longer use these carcasses for postmortem examinations, we still are contacted by some hoping to find means to take care of a specific deer-related problem. We attempt to resolve situations by telephone or referral but will respond if the situation warrants immediate attention.

Study personnel discussed urban deer ecology and management during telephone interviews with newspaper media representing the Chicago Sun Times, Hammond Times, and Joliet Herald. Telephone interviews with free-lance writers will be used in articles written for "In Vermont" magazine and "Illinois Game and Fish" magazine. In-person interviews were conducted with the Hammond Times. Slides taken by urban deer study personnel were loaned to the Izaak Walton League and a free-lance writer for use in articles.

Study personnel discussed urban deer management and research with a professor, from Rockford College, who will be studying deer on his

sabbatical. This same individual received field demonstration/ experience in vegetation sampling. We cooperated with Max McGraw Wildlife Foundation intern program by suggesting an intern research project on deer. INHS provided data and consultation to the senior student in Wildlife Management at University of Wisconsin-Stevens Point. The student tested a hypothesis on deer herd age structure that will be useful in modeling herd demography. A written summary of his study will be appended to the FY87 annual report. A volunteer senior biology student from the University of Wisconsin-Madison, radio-tracked deer on the Joliet Army Training area with J.M. Jones. Information on deer damage in arboretums was provided to a graduate student at Northeastern Illinois University.

Several other requests for information were received from police departments and private citizens. Because of the large number of repetitive requests for information, we have developed a set of handouts and reprints that are regularly sent to individual callers. There is considerable interest in Lyme Disease, deer damage abatement techniques, and urban deer management options. We will continue to update information and add new materials during the remainder of the research program. Information packets have been useful to our study because they answer questions in detail, the public appreciates the service, and they tend to reduce time involved in telephone conversations.

The IBM PC system in our Elgin field office was linked to the mainframe computer at the University of Illinois, Champaign.

Considerable time this quarter was devoted to data analyses and preparation of the FY87 annual report.

Preparation of this quarterly report.

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DATE: 30 September 1987