

# MOOSEHORN NATIONAL WILDLIFE REFUGE

1984



ANNUAL WOODCOCK REPORT

1984

Moosehorn National Wildlife Refuge

Student Woodcock Crew: Brian Benedict  
Kurt Eilo  
Angela Judice  
Jeff Mason  
Tina Muehlbauer  
Nancy Phelps  
Chris Vann  
Brian Warren

DEDICATIONS

This report is dedicated to:

Greg Sepik, whose Irish eyes are always smiling (even when his face isn't).



Eric Derleth, who became quite attached to bird #811 one night (or was it the other way around?). Besides, he's never had anything dedicated to him before.

Douglas Mullen, same to you pal!



And to 610-1, our favorite Canadian.

TABLE OF CONTENTS

	<u>Page No.</u>
Introduction.....	1
Traps.....	5
Table 1 - Summary of Age and Sex of Woodcock Caught in Ground Traps.....	7
Mist Netting.....	8
Night Lighting.....	9
Table 2 - 1984 Woodcock Banding Results.....	10
Table 3 - Yearly Capture Summary (1964 - 1984).....	11
Radio Telemetry.....	12
Critique.....	16

## INTRODUCTION

The American woodcock (Scolopax minor) is one of the most popular game birds in the northeastern United States. Like many migratory birds, the woodcock winters in the southeastern seaboard states and breeds, during the spring and summer months, in the northeast. Moosehorn National Wildlife Refuge, located in Baring, Maine, is situated in the heart of the woodcock's breeding range, and is the only federal wildlife refuge devoted to the study of this game bird.

Establishing sound woodcock management techniques that can be used by private landowners and which can be incorporated into current forest management practices, is the goal of the study being conducted at Moosehorn. The research also attempts to improve the understanding of the life history, behavior, and population dynamics of the woodcock.

Present woodcock management practices being conducted on the refuge occur in several forms, the most prominent being uneven aged management in even aged blocks. Currently, most of the management cutting on the refuge is being carried out by the Washington County Vocational Technical Institute. During the summer months, Youth Adult Conservation Corps workers and Student Conservation Association volunteers also help with the management cutting. The refuge is divided into several areas with each area having a specific rotation age. The rotation times are determined by the type, condition, and age of the cover types present in each area. This management practice provides excellent woodcock courting and roosting areas, and helps rejuvenate brood-nesting and diurnal cover. White-tailed deer (Odocoileus virginianus), ruffed grouse (Bonasa umbellus), and many other early successional species

also benefit from this practice.

Burning is another management technique in use on the refuge. Burning clears unwanted slash from management cuts, maintains low vegetation heights in certain fields, creates suitable roosting habitat, and controls softwood regeneration while promoting aspen growth.

The 1984 study season began on 21 May. Activities included mist-netting of singing males and roosting fields, brood capture by Dan McAuley and his dog Whiskey, trapping using modified shorebird traps, night lighting, and the third and final year of the radio telemetry project. Other activities included pellet counts (everyone's favorite) to determine population estimates, painting stakes for night lighting fields, softball and volleyball games, the annual awards banquet, and parties at Greg's house.

Woodcock Crew



1 2 3 4 5 6 7 8 9 10

This year at Moosehorn there were ten full-time members of the woodcock crew. Members of this unique group were as follows:

- Greg Sepik (1) - refuge biologist and folksinger in the making (if he only knew the words to the songs).
- Eric Derleth (3) - commercial jet pilot who moonlights as a wildlife biologist for Patuxent Research Center, and also husband of the famous artist Cindy House.
- Nancy Phelps (10) - graduate student from Penn State University who will be remembered for the wise saying "Worms, worms, worms, ha, ha, ha!"
- Brian Benedict (missing from photo) - recent graduate of the University of Maine, and the only person to have seen the Bald Mountain Boogeyman and lived to tell about it.
- Kurt Eilo (4) - UMO student and connoisseur of fine Grateful Dead music and hacky sacks.
- Brian Warren (7) - also known as BW - UMO student who tried in vain to teach all of his out-a-state comrades the "finah" points of the Maine lingo.
- Chris Vann (8) - SCA volunteer from the University of Connecticut, who was pulled over by the Border Patrol on Rt. 1 as a potential OUI although he had not had a single drink (blame it on the front end alignment!)
- Jeff Mason (5) - SCA volunteer from Purdue University, who fishes in a "crick", eats rare-bit, and taught us all how to play yuker without renegeing.
- Angela Judice (2) - SCA volunteer and recent graduate of West Virginia University, who transforms into Hilda (one of three Swedish babes) on Saturday nights.
- Tina Muehlbauer (6) - SCA volunteer from Northland College in Wisconsin, also known as Inga (second of the three Swedish babes), who is a whiz at burp-talking.



Annette Macek (9) - assistant refuge manager trainee, who spent endless hours pursuing the wily radioed woodcock (when she wasn't too busy leafing through the latest L.L. Bean catalog).

Additional help on the project was received from: Sandra Goltz, SCA volunteer from Purdue University; Carole Geraci, SCA volunteer from Ohio (also known as Gretta, the third of the three Swedish babes); Susan Foster, SCA volunteer from North Carolina State University; Dirk Amtower, SCA volunteer from North Carolina State University; Rick Pullman, SCA volunteer from Maine; and Rolland Woltaszewski, SCA volunteer from Nebraska, who tried to hire a maid for the inhabitants of the YCC barracks.

## TRAPLINES



Modified shorebird traps were used to capture woodcock in their diurnal cover. The traps were made from 2.5 by 5.0 cm welded wire shaped into circular "cells" with one or more funnel-shaped openings. The cells were covered on the top with nylon netting. Leads for the traps were made from lengths of chicken wire staked vertically and running toward the center of the funnel-shaped openings. The area underneath and surrounding the leads and cells was hoed to attract woodcock, which probe for earthworms. The traps work on the principle that the probing birds will follow the lead into the cells. Once inside the cell, the woodcock is prevented from escaping by the funnel-shaped openings.

There were six traplines operating in 1984. Each trap consisted of one to four cells connected by the wire leads. All traplines were in or near alder habitat, a preferred diurnal cover for woodcock. Traps were checked daily, usually first thing in the morning. Traplines were operated from 12 June until 17 August, when they were removed.

Birds other than woodcock were frequently caught in the traps, including ruffed grouse, spruce grouse (Dendragapus canadensis), yellow-shafted flickers (Colaptes auratus), and various passerines. All species caught were recorded, along with the trapline and cell number, and then released. Captured woodcock were banded, and age, sex, weight, bill length, and presence or absence of a grey neckband were recorded. Occasionally a captured woodcock was fitted with a radio transmitter, in which case the radio's frequency was also recorded.

Table 1. Summary of Age and Sex of Woodcock Caught in Ground Traps \*

<u>Trapline #</u>	<u>HY-M</u>	<u>HY-F</u>	<u>SY-M</u>	<u>SY-F</u>	<u>ASY-M</u>	<u>ASY-F</u>	<u>L-U</u>	<u>TOTAL</u>
Line 1	2	3	-	1	-	3	-	9
Line 4	1	9	-	-	-	-	-	10
Line 5	5	4	2	1	1	1	-	14
Line 11	4	5	-	1	-	1	-	11
Line 20	-	-	2	-	-	-	4	6
Line 76	-	2	-	1	-	1	-	4
<u>TOTAL</u>	<u>12</u>	<u>23</u>	<u>4</u>	<u>4</u>	<u>1</u>	<u>6</u>	<u>4</u>	<u>54</u>

\* newly banded birds only

## MIST NETTING



To supplement woodcock ground trap captures, 2.5 cm mesh nets measuring 60 feet in length and 10 feet in height, were placed in common roosting sites. These roosting sites may include meadows, blueberry fields, and clearcuts, although only blueberry fields were used in the 1984 season. Woodcock flying into these roosting sites became entangled in the mist nets, and were then removed to be banded, weighed, and to have their age and sex determined. Bill measurements were also taken, and radio transmitters were placed on selected woodcock for the telemetry study.

Mist netting yielded only eight woodcock, but the use of this capture method was greatly reduced from previous years. Passerines were also susceptible to mist net capture techniques.

## NIGHT LIGHTING

Another effective method of capturing woodcock is night lighting. Large hand held nets and bright lights are used to search for and capture woodcock in blueberry fields, meadows, or clearcuts. The woodcock are either flushed a short distance and then netted or they are netted before they flush. Some woodcock are attracted to the lights and make for an easy capture. Occasionally the woodcock will flush from the area and cannot be caught.

Depending upon the terrain, the area may be searched by vehicle or on foot. The most preferable conditions for night lighting are during dark, rainy nights during the months of June, July, and August.

Each captured woodcock is banded, weighed, and the age and sex are determined. Bill measurements are made and occasionally radio transmitters are attached for the telemetry study.

Night lighting efforts in 1984 yielded 15 unbanded woodcock and two repeat captures in only four night lighting attempts.

Table 2. 1984 Woodcock Banding Results

	<u>NEW</u>	<u>RETURNS</u>	<u>REPEATS</u>
L-M	-	-	1
L-F	-	-	3
L-U	13	-	1
HY-M	22	-	4
HY-F	25	-	10
SY-M	18	2	1
SY-F	9	-	2
ASY-M	7	8	4
ASY-F	4	4	3
AHY-M	1	-	-
AHY-F	-	-	-
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TOTAL	99	14	29

Table 3. Yearly Capture Summary (1964-1984)

<u>YEAR</u>	<u>NEW</u>	<u>RETURNS</u>	<u>REPEATS</u>	<u>TOTALS</u>
1964	221	17	110	348
1965	151	25	129	305
1966	249	20	135	404
1967	270	22	99	391
1968	191	24	116	324
1969	297	13	123	433
1970	175	31	86	292
1971	221	23	142	386
1972	335	23	173	531
1973	319	16	97	432
1974	381	30	184	595
1975	280	17	92	390
1976	294	20	122	436
1977	423	44	265	732
1978	474	53	257	784
1979	325	55	152	532
1980	344	57	102	502
1981	232	29	51	312
1982	229	25	92	346
1983	82	13	11	106
1984	99	14	29	<del>142</del>



## RADIO TELEMETRY

Monitoring of radioed woodcock began on 24 May. Birds were captured using ground trapping (20), mist netting (13), and night lighting (3) techniques. One hen was captured using a bird dog. Radioed birds were selected so that each age and sex group was represented.



Each bird was fitted with a four to five gram MPB-1220-HD radio transmitter. These 164 MHz radios are manufactured by Wildlife Materials, Inc., of Carbondale, IL., and are divided into three categories of pulse rates. A slow pulse rate ranged from 30 to 46 pulses per minute, a medium pulse rate ranged from 50 to 90 pulses per minute, and a fast pulse rate ranged from 100 to 120 pulses per minute. Transmitter life was estimated by the manufacturer to be 90 to 200 days, depending on the pulse rate.

Upon initial capture, each bird was banded, and its age, sex, weight, and bill length were recorded. The radio was secured to the bird's dorsal

surface, to one side of the spine and behind the wings, using cattle tag cement. Fatigue resistant, single loop wire (previously wound around the radio casing) was threaded under the wings and tied beneath the breastbone with either a square knot or a surgeon's knot. Care was taken to avoid hindering wing mobility, and each bird's condition and behavior upon release were noted.

Diurnal (from dawn until sunset) and nocturnal (from one hour after sunset until dawn) locations were obtained daily for each bird. Seven element, 164 MHz antennae were attached to a jeep and two pick-up trucks. These vehicles, used in conjunction with multichannel programmable receivers, enabled operators to monitor bird movements throughout the refuge. The programmable receivers enabled the operator to scan for as many frequencies as desired, at an interval of one frequency every 3.7 seconds.



After locating a radio-marked bird with the vehicle antenna, the operator used a hand held, three element antenna to determine the bird's exact location.

Using a compass, the operator then measured the perpendicular distance from the bird's position to the nearest road. Pacing to a landmark (e.g. road intersection, stream, clearcut) and reference to aerial photographs then enabled the operator to ascertain the bird's location on refuge maps. Distances were measured in chains (1 chain = 66 feet), and the bird's location was considered accurate to within one chain.

During the day, woodcock were found most often in forested areas, usually near alder thickets, but were not necessarily located within easy walking distance of a road. Two birds favored wooded areas on the wrong side of the Moosehorn Stream, at least as far as the telemetry crew was concerned. Forging this stream after five straight days of torrential rains was not a feat to be taken lightly; and, at one point, scuba gear was considered almost a necessity. Nocturnal locations usually required less hazardous walking, as birds tended to favor clearcuts, blueberry fields, and natural openings in wooded areas reasonably near the roads, for roosting. However, locating radioed birds at night had its own set of disadvantages, including a haunted blue bus parked along one of the roads, and things that went bump in the night.

Each bird was flushed from its diurnal location once a week. A bird's exact position was determined and it was flushed deliberately. Where it was not possible to determine the bird's position visually, fresh splashings often indicated its position before it flushed. A vegetation plot was done at this location. Earthworm biomass, soil moisture (gravimetric and soil suction), canopy cover (% cover), ground cover (% bare ground), shrub species, stems per acre, and basal area were determined. Also, the bird's condition and the presence or absence of splashings and probes were noted.

Vegetation plots provided habitat data and also served as a means to assess a bird's condition. In several cases, when a bird's diurnal and



nocturnal locations matched and did not vary for several days, a dropped radio was found at the site when a vegetation plot was attempted.

In the course of the summer, 32 different radio frequencies were used. Two radios were used twice and one was used four times. Seven radios were found dropped, and two radioed woodcock were found predated (radios with remains found). The highest number of birds tracked in one day was 31. The longest retention time for a radio as of 31 August was 100 days, the shortest was two days.

In mid August, five birds were repeatedly not found during diurnal and nocturnal telemetry. Three of these birds were later located, from an airplane, at distances of six to ten miles from the refuge, and these birds were no longer monitored. At the time of this writing, the remaining two birds have still not been found (it is suspected they left the country...period).

## CRITIQUE

This summer at the Moosehorn Refuge has been both exciting and educational. We all gained valuable field experience to help us pursue our careers in wildlife.

Reflecting upon our summer, we thought of a few improvements that could have made the job more efficient. Telemetry equipment breakdowns were common and could be very discouraging. If we had had more backup equipment or made quicker repairs on existing equipment, telemetry locations would have been made with more ease and less frustration.

Also, many of the woodcock were found in areas where access was difficult. Clearing and marking better trails to these difficult areas would have saved considerable time during nocturnal locations.

While the SCA volunteers had the opportunity to work with the woodcock crew in the evenings, we feel that they could have been included more in our daily activities.

Our living quarters here at the refuge were a little too crowded for both the guys and the girls. However, they were convenient, comfortable, and provided a situation where we could all get to know one another better.

Mostly, we regret not having the government driver's education booklet to accompany the two hour audio tape.

We created many lasting memories here at the Moosehorn and enjoyed activities like: trips to Baxter and Acadia, campfires, parties at Greg's, swimming at Meddybemps, the Motor Inn dances, the Portside Inn, and picking up dead seagulls.

In conclusion, we would like to express our gratitude to Greg Sepik for providing us with excellent job experience and an A-1 summer.

To all a fond adieu,

Woodcock Crew of '84

