

1979

STUDENTS YEARLY REPORT

Moosehorn National Wildlife Refuge

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ABSTRACT

The total number of new American woodcock (Philohela minor) caught in 1979 was 353 which was 109 birds lower than the total in 1978. However, there was an increase in the number of adult birds caught. At the same time, there were as many as 125 fewer HY's caught. The lower catch may have been due to inclement weather at the time of hatch. Birds showed a preference for fields with slash over burnt fields. From the 1979 data, a small 1980 SY population is expected. If conditions permit survival of a good HY population in May 1980, the population should normalize in 1981.

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Introduction

The American woodcock is one of the most important game birds in the Northeast. The woodcock project at the Moosehorn National Wildlife Refuge, led by Greg Sepik, is designed to find management techniques for increasing woodcock populations which can be implemented by private small woodlot owners as well as large scale forest management. Related research has been going on at the refuge for sixteen years; this report, compiled by the student banding crew, describes and discusses the 1979 field season.

Field work began 29 March with the mistnetting of singing males and concluded on 31 August. Summer personnel, in addition to Greg and Margaret Campbell (assistant refuge manager), included federal wildlife technicians Danial McAuley, Eric Derleth, and Steve LaVoie. Student crew members were Rosi Bromley, Andy Bourke, Jane Austin, Matt Miller, Michael Duddy (all from the University of Maine at Orono), and Edward Appel (intern from the University of Massachusetts at Amherst). Visitor center employees, who occasionally assisted with field work, were Earlene Swann (Colorado State) and Kathy Wodash (University of Wisconsin at Stevens Point). Although personnel arrived at various times throughout the summer, the initial days for all fieldworkers were spent learning to age and sex woodcock wings.

Along with spring mistnetting, which continued until 7 June, singing males census routes were run during the middle

of April. Andy Amman and Bob McKee conducted brood searches with their bird dogs from the 14th to the 24th of May. Federal technicians Derleth, McAuley, and LaVoie conducted songbird censuses as well as vegetation analysis on brood locations and songbird census plots. They also laid out transects off the Horse Pasture, Goodall Heath, and Snare Meadow for brood searches and for wildlife censuses to monitor management success. Annual burning of fields was also done before summer employees arrived.

With the arrival of the students at the end of May, and the beginning of June, the field season began in earnest. Each morning traplines were run at 10:00 AM (at 8:00 AM following or on a rainy day). Mistnetting was done at dusk Monday through Wednesday. Fields were nightlighted on every rainy night without a heavy fog. Other daily activities included a variety of work. Moisture readings and earthworm analysis were done once a month. Vegetation analysis, biomass analysis, and basal area cruises were done on areas that were cut or scheduled to be cleared. Wildlife transects, owl pellet searches, and deer censusing at night were done to monitor other aspects of wildlife on the refuge. Inclement weather often found the woodcock crew spread out in the office processing data collected or mapping cut plots.

The last week of the summer was busy; the woodcock project field season was brought to a close. Mist nets and traplines were brought in for winter storage. All data was updated and the student report put together. Although the number of woodcock caught was low, the summer was deemed successful with a

controversial 4-2 softball record over the YCC.

Mistnetting of Singing Males

The capture of singing males began 26 March and ended 7 June. Males were pinpointed on their singing grounds and exact locations of flight patterns in and out of singing grounds were noted. Mist nets were placed at landing points and in the flight patterns. Most males were captured in one evening while a few birds required additional attempts. Several times subdominant and female woodcock were captured. These birds were responding to the singing of the dominant male. The number of males captured increased from 53 in 1978 to 76 in 1979. This increase in the number of singing males caught may be a result of an increase in management and an increase in effort.

Results of Mistnetting of Singing Males			
	<u>New</u>	<u>Return</u>	<u>Total</u>
SY M (dominant)	29	5	34
SY M (subdominant)	5	2	7
ASY M (dominant)	18	15	33
ASY M (subdominant)	1	1	2
Subtotals	53	23	76
Females	4	0	4
Totals	57	23	80

Brood Captures

This year, as in the last several years, Mr. G. A. "Andy" Amman, a retired biologist from Michigan, used his trained English Setters, Dolly and Gypsy, to locate woodcock broods. He was joined this year by Mr. Robert McKee of the Maryland Wildlife Administration and his Brittany Spaniels, Lady Peal and Rafael. Brood search began the 14th of May and concluded on the 24th of May.

The dogs were sent into likely brood cover and when one of the dogs froze on point the banding crew approached with hand nets and attempted to locate and net the hen and chicks. If the hen flushed, the chicks were placed in a bag and left at the site of their capture. This was an attempt to lure the hen back to the location from which she had flushed. On one occasion, Mr. Amman used a trap to capture a hen. Upon capture, all birds were banded, weighed, and the bill was measured. If the chicks were old enough, they were sexed. The location of the brood was then flagged and vegetation analysis was done at that location. Mr. McKee also ran his dogs on transects off the Horse Pasture and Goodall Heath Road.

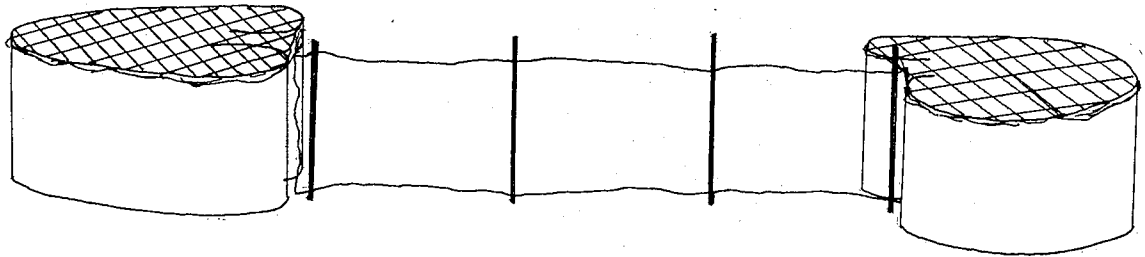
Even with the increased effort, the total number of captures of chicks decreased from 96 in 1978 to 61 in 1979. This may be a result of several periods of rain and low temperatures which coincided with the start of incubation and the date of hatch. On the following page a summary of brood captures may be found.

Traplines

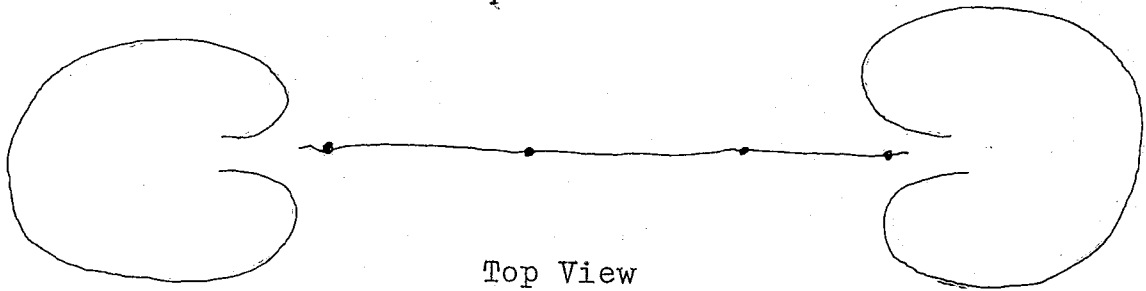
Nine traplines were run this year with the number of traps per line varying from six to twenty-three. Each trap consisted of between one and four cells which were interconnected with wire leads. The traplines were established in previous years and generally were located in either alder or conifer stands (Fig. 1).

The use of traplines began on 14 June; this was two weeks after we had started work. This time lag was primarily due to unseasonally wet weather. Initially, traplines were run twice a day by two people, once at 8:00 AM and once at 6:00 PM. Since we flushed too many birds near the traplines when we were doing them twice daily, we abandoned the twice a day runs and changed to a once a day trapline run beginning at 10:00 AM. If it rained the night before, we would run traplines at 8:00 AM to reduce any mortalities due to exposure. All songbirds and mammals caught in the traps were released, but only woodcock and snipe were banded, weighed, aged and sexed, and bill length measured. All catches were recorded by trapline number, trap number, and cell letter. Periodically the traplines were hoed. This involved hoeing the leads and cells so that the ground would be softer for the woodcock to probe in.

Periodic moisture readings were taken at selected trap sites using a Bouyoucus Moisture Meter and gypsum blocks buried 5 cm below the soil surface. Earthworm biomass was also measured at each site monthly.



Side View



Top View

Figure 1. Woodcock ground trap.

For earthworm analysis, we cleared a $.25 \text{ m}^2$ circular plot of all duff and vegetation. Next we poured 4 liters of 0.6% formaldehyde solution on the plot and for 10 minutes we picked any worms that came out of the ground. The worms were killed and the length measured. These measurements were transformed in weights per unit area using a previously determined regression equation. This computation gave an indication of food availability for woodcock in the area surrounding the traps. For the locations of traplines used in 1979, refer to the trapline map enclosed in the report.

Summary of the Age and Sex of Birds Caught in Traps

Trapline #	HY-M	HY-F	SY-M	SY-F	ASY-M	ASY-F	AHY-M	AHY-F
1 ✓	8	4	1	-	-	-	-	-
76	4	1	-	-	-	-	-	-
4 ✓	3	1	-	2	1	3	-	-
15 ✓	-	2	2	-	-	-	-	-
77 ✓	3	1	1	-	-	-	-	1
6	2	-	-	2	-	1	-	-
11 ✓	10	8	3	1	-	2	-	-
5	7	6	1	1	-	2	-	1
16 ✓	4	2	-	-	-	1	-	-
Σ	41	25	8	6	1	9	-	2

Summary of Captures for Traplines

Line 1: Analysis of Birds Caught

Trap #	Cells	Cell days	I	II	Birds cell days	III	Birds cell days	IV	Birds cell days	V	Birds cell days	VI	Birds cell days	Total
1 - 1	2	28	-	1	0.036	-	-	-	-	-	-	-	-	1
1 - 2	2	28	-	-	-	1	0.036	1	0.036	-	-	-	-	2
1 - 3	3	42	-	-	-	-	-	2	0.048	1	0.024	1	0.024	4
1 - 4	2	28	-	-	-	-	-	-	-	-	-	-	-	0
1 - 5	3	42	-	-	-	-	-	1	0.024	-	-	1	0.024	2
1 - 6	2	28	-	-	-	1	0.036	-	-	1	0.036	-	-	2
1 - 9	3	42	-	1	0.024	-	-	-	-	-	-	-	-	1
1 - 10	2	28	-	-	-	-	-	-	-	-	-	-	-	0
1 - 11	2	28	-	-	-	-	-	-	-	-	-	-	-	0
1 - 12	3	42	-	-	-	-	-	-	-	-	-	-	-	0
1 - 13	2	28	-	-	-	-	-	-	-	-	-	-	-	0
1 - 14	3	42	-	1	0.024	-	-	-	-	-	-	-	-	1
1 - 15	2	28	-	-	-	-	-	-	-	-	-	-	-	0
Total	30	434	0	3	0.007	2	0.005	4	0.009	2	0.005	2	0.005	13

2170

Key: I June 2 - June 15
II June 16 - June 29

III June 30 - July 13
IV July 14 - July 27

V July 28 - August 10
VI August 11 - August 23

Summary of Captures for Traplines

Line 4: Analysis of Birds Caught

Trap #	Cells	Cell days	I	II	Birds cell days	III	Birds cell days	IV	Birds cell days	V	Birds cell days	VI	Birds cell days	Total
44--11	2	28	-	-	-	-	-	-	-	-	-	-	-	0
4 - 12	2	28	-	-	-	-	-	-	-	-	-	-	-	0
4 - 13	3	42	-	1	0.024	1	0.024	-	-	-	-	-	-	2
4 - 14	2	28	-	1	0.036	-	-	-	-	-	-	-	-	1
4 - 15	2	28	-	-	-	-	-	1	0.036	-	-	-	-	1
4 - 22	2	28	-	-	-	-	-	-	-	-	-	1	0.036	1
4 - 23	2	28	-	-	-	-	-	-	-	-	-	-	-	0
4 - 25	3	42	-	2	0.048	1	0.024	-	-	-	-	-	-	3
4 - 26	2	28	-	-	-	-	-	-	-	-	-	-	-	0
4 - 27	3	42	-	-	-	-	-	-	-	-	-	-	-	0
Totals	23	322	0	4	0.012	2	0.006	1	0.003	0	0.000	1	0.003	8

7610

Summary of Captures for Trapplines

Line 5: analysis of Birds Caught

Trap#	Cells	Cell days	I	II	Birds cell days	III	Birds cell days	IV	Birds cell days	V	Birds cell days	VI	Birds cell days	Total
5 - 1	3	42	-	-	-	-	-	-	-	-	-	-	-	0
5 - 2	2	28	1	-	-	-	-	1	0.036	-	-	-	-	2
5 - 3	2	28	-	-	-	-	-	-	-	-	-	-	-	0
5 - 4.5	3	42	1	1	0.024	1	0.024	-	-	-	-	-	-	3
5 - 5	4	56	-	1	0.018	-	-	-	-	-	-	-	-	1
5 - 5.5	2	28	-	-	-	-	-	1	0.036	-	-	-	-	1
5 - 6	4	56	-	1	0.018	-	-	-	-	1	0.018	1	0.018	3
5 - 7	4	56	-	1	0.018	-	-	-	-	-	-	-	-	1
5 - 8	3	42	1	-	-	1	0.024	-	-	-	-	-	-	2
5 - 9	2	28	-	-	-	1	0.036	-	-	-	-	-	-	1
5 - 10	4	56	1	-	-	-	-	-	-	1	0.018	-	-	2
5 - 11	2	28	-	-	-	-	-	-	-	1	0.036	-	-	1
5 - 12	2	28	-	-	-	-	-	-	-	-	-	-	-	0
5 - 12.5	3	42	-	-	-	-	-	-	-	-	-	-	-	0
5 - 13	4	56	-	-	-	-	-	-	-	-	-	-	-	0
5 - 14	3	42	-	-	-	-	-	-	-	-	-	-	-	0
Totals	49	686	4	4	0.006	3	0.004	2	0.003	3	0.004	1	0.001	17

3430

Summary of Captures for Traplines

Line 6: Analysis of Birds Caught

Trap #	Cells	Cell days	I	II	Birds cell days	III	Birds cell days	IV	Birds cell days	V	Birds cell days	VI	Birds cell days	Total
6 - 1	3	42	-	2	0.048	-	-	-	-	-	-	-	-	2
6 - 2	2	28	-	-	-	-	-	-	-	-	-	-	-	0
6 - 3	2	28	-	-	-	-	-	-	-	-	-	-	-	0
6 - 4	2	28	-	-	-	-	-	1	-	1	0.036	-	-	1
6 - 5	2	28	-	-	-	-	-	-	-	-	-	-	-	0
6 - 7	2	28	-	-	-	-	-	-	-	-	-	-	-	0
6 - 8	2	28	-	2	0.071	1	0.036	-	-	-	-	-	-	3
6 - 9	2	28	-	-	-	-	-	-	-	-	-	-	-	0
6 - 10	2	28	-	-	-	-	-	-	-	-	-	-	-	0
6 - 11	2	28	-	-	-	-	-	-	-	-	-	-	-	0
6 - 12	2	28	-	-	-	-	-	-	-	-	-	-	-	0
6 - 14	2	28	-	-	-	-	-	-	-	-	-	-	-	0
6 - 15	2	28	-	-	-	-	-	-	-	-	-	-	-	0
Totals	29	406	0	4	0.010	1	0.003	0	0.00	1	0.003	0	0.00	6

2030

Summary of Captures for Traplines

Line 11: Analysis of Birds Caught

Trap #	Cells	Cell days	I	II	<u>Birds</u> cell days	III	<u>Birds</u> cell days	IV	<u>Birds</u> cell days	V	<u>Birds</u> cell days	VI	<u>Birds</u> cell days	Total
11 - 1	22	28	-	-	-	1	0.036	-	-	-	-	-	-	1
11 - 2	2	28	-	-	-	-	-	-	-	-	-	-	-	0
11 - 3	2	28	-	-	-	-	-	-	-	-	-	-	-	0
11 - 4	2	28	-	-	-	-	-	-	-	-	-	1	0.036	1
11 - 5	2	28	-	-	-	-	-	-	-	1	0.036	2	0.071	3
11 - 6	2	28	-	-	-	3	0.107	1	0.036	2	0.071	1	0.036	7
11 - 7	2	28	-	-	-	1	0.036	-	-	-	-	-	-	1
11 - 8	2	28	-	-	-	-	-	-	-	-	-	-	-	0
11 - 9	2	28	-	-	-	-	-	-	-	-	-	-	-	0
11 - 10	2	28	-	-	-	-	-	-	-	-	-	-	-	0
11 - 11	2	28	-	-	-	-	-	-	-	-	-	-	-	0
11 - 12	2	28	-	-	-	-	-	-	-	-	-	-	-	0

continued

Summary of Captures for Traplines

Line 11, continued

Trap #	Cells	Cell days	I	II	<u>Birds</u> cell days	III	<u>Birds</u> cell days	IV	<u>Birds</u> cell days	V	<u>Birds</u> cell days	VI	<u>Birds</u> cell days	Total
11 - 13	2	28	-	-	-	2	0.071	-	-	-	-	11	0.036	33
11 - 14	2	28	-	-	-	1	0.036	-	-	-	-	-	-	1
11 - 15	2	28	-	1	0.036	-	-	-	-	-	-	-	-	1
11 - 16	2	28	-	-	-	-	-	-	-	-	-	-	-	0
11 - 17	2	28	-	2	0.071	-	-	-	-	-	-	-	-	2
11 - 18	2	28	-	1	0.036	-	-	2	0.071	-	-	-	-	3
Totals	36	504	0	4	0.008	8	0.016	3	0.006	3	0.006	5	0.010	23

2520

Summary of Captures for Traplines

Line 16, continued

Trap #	Cells	Cell days	I	II	<u>Birds</u> cell days	III	<u>Birds</u> cell days	IV	<u>Birds</u> cell days	V	<u>Birds</u> cell days	VI	<u>Birds</u> cell days	Total
16 - 13	2	28	-	-	-	-	-	-	-	-	-	-	-	0
16 - 14	2	28	-	-	-	-	-	-	-	-	-	-	-	0
16 - 15	2	28	-	-	-	-	-	-	-	-	-	-	-	0
16 - 16	2	28	-	-	-	-	-	-	-	-	-	-	-	0
16 - 17	2	28	-	-	-	-	-	-	-	-	-	-	-	0
16 - 18	2	28	-	-	-	-	-	-	-	-	-	-	-	0
16 - 19	2	28	1	-	-	-	-	-	-	-	-	-	-	1
16 - 20	2	28	-	-	-	-	-	1	0.036	-	-	-	-	1
16 - 21	2	28	-	-	-	-	-	-	-	-	-	-	-	0
16 - 22	2	28	-	1	0.036	-	-	-	-	1	0.036	-	-	2
16 - 23	2	28	-	-	-	-	-	-	-	-	-	-	-	0
Totals	45	630	1	3	0.005	1	0.002	3	0.005	1	0.002	0	0.000	9

3156

Summary of Captures for Traplines

Line 76: Analysis of Birds Caught

Trap #	Cells	Cell days	I	II	<u>Birds</u> cell days	III	<u>Birds</u> cell days	IV	<u>Birds</u> cell days	V	<u>Birds</u> cell days	VI	<u>Birds</u> cell days	Total
76 - 1	2	28	-	-	-	-	-	-	-	-	-	-	-	0
76 - 2	2	28	-	-	-	-	-	-	-	-	-	-	-	0
76 - 3	32	42	-	-	-	-	-	-	-	-	-	-	-	0
76 - 4	2	28	-	-	-	-	-	-	-	-	-	-	-	0
76 - 5	2	28	-	-	-	-	-	-	-	-	-	-	-	0
76 - 6	2	28	-	-	-	-	-	1	0.036	-	-	-	-	0
76 - 7	2	28	-	-	-	-	-	-	-	-	-	-	-	0
76 - 8	2	28	-	-	-	-	-	-	-	-	-	1	0.036	1
76 - 99	2	28	-	-	-	-	-	-	-	2	0.071	1	0.036	3
Totals	19	266	0	0	0.00	0	0.00	1	0.004	2	0.008	2	0.008	5

1330

Summary of Captures for Traplines

Line 77: Analysis of Birds Caught

Trap #	Cells	Cell days	I	II	<u>Birds</u> cell days	III	<u>Birds</u> cell days	IV	<u>Birds</u> cell days	V	<u>Birds</u> cell days	VI	<u>Birds</u> cell days	Totals
77 - 1	3	42	-	-	-	-	-	-	-	1	0.024	-	-	1
77 - 2	2	28	-	-	-	-	-	-	-	-	-	-	-	0
77 - 3	2	28	-	-	-	-	-	-	-	-	-	-	-	0
77 - 4	3	42	-	-	-	1	0.024	1	0.024	-	-	1	0.024	3
77 - 5	2	28	-	-	-	-	-	-	-	-	-	-	-	0
77 - 6	2	28	-	-	-	-	-	-	-	-	-	1	0.036	1
Totals	14	196	0	0	0.000	1	0.005	1	0.005	1	0.005	2	0.010	5

980

Summary of Captures for Traplines

Line 15: Analysis of Birds Caught

Trap #	Cells	Cell days	I	II	<u>Birds</u> cell days	III	<u>x Birds</u> cell days	IV	<u>Birds</u> cell days	V	<u>Birds</u> cell days	VI	<u>Birds</u> cell days	Total
15 - 1	2	28	-	1	0.036	-	-	-	-	-	-	-	-	1
15 - 2	1	14	-	-	-	1	0.071	-	-	1	0.071	-	-	2
15 - 3	2	28	-	-	-	-	-	-	-	-	-	-	-	0
15 - 4	2	28	-	1	0.036	-	-	-	-	-	-	-	-	1
15 - 5	2	28	-	-	-	-	-	-	-	-	-	-	-	0
15 - 6	2	28	-	-	-	-	-	-	-	-	-	-	-	0
15 - 7	2	28	-	-	-	-	-	-	-	-	-	-	-	0
15 - 8	2	28	-	-	-	-	-	-	-	-	-	-	-	0
15 - 9	2	28	-	-	-	-	-	-	-	-	-	-	-	0
15 - 10	2	28	-	-	-	-	-	-	-	-	-	-	-	0
Totals	19	266	0	2	0.008	1	0.004	0	0.000	1	0.004	0	0.000	4

330

Mistnetting

The fields mistnetted in 1979 are indicated on the map of mistnetting areas enclosed in the report. Nine fields were mistnetted on a rotational basis in groups of three fields. The fields were grouped as follows: 1, 10, and 39/40; 11, 20, and 36; 2, 7, and 29. Each group of three fields^d was mistnetted weekly if weather conditions permitted.

Fields were set up with nets at the beginning of the summer. Nets were left in the fields for the remainder of the summer. The position of the nets was periodically changed and damaged nets were replaced.

Mistnetting began the week of June the 4th and continued through the week of August the 27th. Each evening the nets were put down 15 to 20 minutes before dusk. The nets were kept down until dark at which time they were raised and furled. Any woodcock caught were banded, aged, sexed, weighed, and had bill lengthⁿ measured. Any other birds caught in the nets were removed and released immediately.

Mist Netting 1979

Field	Date	#Nets	#Birds	#HY	<u>#HY</u> Net	#SY	<u>#SY</u> Net	#ASY	<u>#ASY</u> Net	<u>#Birds</u> Net	#♂s	<u>#♂s</u> Net	#qs	<u>#qs</u> Net
09	1 6/04	26	1	1	0.04	0	0.00	0	0.00	0.04	1	0.04	0	0.00
	6/11	200	20	0	0.00	1	0.05	1	0.05	0.10	2	0.10	0	0.00
	6/18	26	1	1	0.04	0	0.00	0	0.00	0.04	0	0.00	1	0.04
	6/25	32	1	1	0.03	0	0.00	0	0.00	0.03	1	0.03	0	0.00
	7/02	24	2	1	0.04	0	0.00	1	0.04	0.08	1	0.04	1	0.04
	7/09	26	1	1	0.04	0	0.00	0	0.00	0.04	1	0.04	0	0.00
	7/16	24	3	1	0.04	2	0.08	0	0.00	0.13	2	0.08	1	0.04
	7/23	24	2	2	0.08	0	0.00	0	0.00	0.08	1	0.04	1	0.04
	7/30	24	0	0	0.00	0	0.00	0	0.00	0.00	0	0.00	0	0.00
	8/06	26	0	0	0.00	0	0.00	0	0.00	0.00	0	0.00	0	0.00
	8/20	266	1	1	0.04	0	0.00	0	0.00	0.04	1	0.04	0	0.00
		278												
10	6/04	21	1	0	0.00	1	0.05	30	0.00	0.05	0	0.00	1	0.05
	6/11	21	0	0	0.00	0	0.00	0	0.00	0.00	0	0.00	0	0.00
	6/18	21	3	1	0.05	0	0.00	2	0.10	0.14	1	0.04	2	0.10
	6/25	21	0	0	0.00	0	0.00	0	0.00	0.00	0	0.00	0	0.00
	7/02	21	1	1	0.05	0	0.00	0	0.00	0.05	1	0.05	0	0.00
	7/09	21	1	1	0.05	0	0.00	0	0.00	0.05	1	0.05	0	0.00
	7/16	21	1	1	0.05	0	0.00	0	0.00	0.05	1	0.05	0	0.00
	7/23	20	1	1	0.05	0	0.00	0	0.00	0.05	0	0.00	1	0.05
	7/30	21	0	0	0.00	0	0.00	0	0.00	0.00	0	0.00	0	0.00
	8/06	25	1	1	0.04	00	0.00	0	0.00	0.04	1	0.04	0	0.00
		213												

Mist Netting 1979

Field	Date	#Nets	#Birds	#HY	<u>#HY</u> Net	#SY	<u>#SY</u> Net	#ASY	<u>#ASY</u> Net	<u>#Birds</u> Net	#♂s	<u>#♂s</u> Net	#♀s	<u>#♀s</u> Net
39/40	6/04	15	0	0	0.00	0	0.00	0	0.00	0.00	0	0.00	0	0.00
	6/11	15	0	0	0.00	0	0.00	0	0.00	0.00	0	0.00	0	0.00
	6/18	15	1	0	0.00	0	0.00	1	0.07	0.07	0	0.00	1	0.07
	6/25	17	0	0	0.00	0	0.00	0	0.00	0.00	0	0.00	0	0.00
	7/02	17	0	0	0.00	0	0.00	0	0.00	0.00	0	0.00	0	0.00
	7/09	17	2	2	0.12	0	0.00	0	0.00	0.12	2	0.12	0	0.00
	7/16	17	1	1	0.06	0	0.00	0	0.00	0.06	0	0.00	1	0.06
	7/23	17	1	1	0.06	0	0.00	0	0.00	0.06	1	0.06	0	0.00
	7/30	17	0	0	0.00	0	0.00	0	0.00	0.00	0	0.00	0	0.00
	8/06	17	1	1	0.06	0	0.00	0	0.00	0.06	1	0.06	0	0.00
		164												
11	6/05	17	0	0	0.00	0	0.00	0	0.00	0.00	0	0.00	0	0.00
	6/12	17	2	2	0.12	0	0.00	0	0.00	0.12	1	0.06	1	0.06
	6/19	17	0	0	0.00	0	0.00	0	0.00	0.00	0	0.00	0	0.00
	6/26	17	2	2	0.12	0	0.00	0	0.00	0.12	2	0.12	0	0.00
	7/10	17	0	0	0.00	0	0.00	0	0.00	0.00	0	0.00	0	0.00
	7/17	17	1	1	0.06	0	0.00	0	0.00	0.06	1	0.06	0	0.00
	7/24	17	2	1	0.06	0	0.00	1	0.06	0.12	1	0.06	1	0.06
	7/31	17	1	1	0.06	0	0.00	0	0.00	0.06	0	0.00	1	0.06
	8/07	17	1	1	0.06	0	0.00	0	0.00	0.06	1	0.06	0	0.00
	8/14	17	0	0	0.00	0	0.00	0	0.00	0.00	0	0.00	0	0.00
		167												

Mist Netting 1979

Field	Date	#Nets	#Birds	#HY	<u>#HY</u> Nets	#SY	<u>#SY</u> Nets	#ASY	<u>#ASY</u> Nets	<u>#Birds</u> Nets	#♂s	<u>#♂s</u> Net	#♀s	<u>#♀s</u> Net
20	6/05	10	0	0	0.00	0	0.00	0	0.00	0.00	0	0.00	0	0.00
	6/12	10	3	3	0.30	0	0.00	0	0.00	0.30	3	0.30	0	0.00
	6/19	10	1	1	0.10	0	0.00	0	0.00	0.10	0	0.00	1	0.10
	6/26	10	1	1	0.10	0	0.00	0	0.00	0.10	1	0.00	0	0.00
	7/10	10	0	0	0.00	0	0.00	0	0.00	0.00	0	0.00	0	0.00
	7/17 ⁰	10	1	1	0.10	0	0.00	0	0.00	0.10	1	0.10	0	0.00
	7/24	10	0	0	0.00	0	0.00	0	0.00	0.00	0	0.00	0	0.00
	7/31	10	1	0	0.00	0	0.00	1	0.10	0.10	0	0.00	1	0.10
	8/07	10	0	0	0.00	0	0.00	0	0.00	0.00	0	0.00	0	0.00
	8/14	10	1	1	0.10	0	0.00	0	0.00	0.10	1	0.10	0	0.00
	8/28	10	0	0	0.00	0	0.00	0	0.00	0.00	0	0.00	0	0.00

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36	6/05	06	2	0	0.00	2	0.33	0	0.00	0.33	0	0.00	2	0.33
	6/12	12	1	1	0.08	0	0.00	0	0.00	0.08	1	0.08	0	0.00
	6/19	12	0	0	0.00	0	0.00	0	0.00	0.00	0	0.00	0	0.00
	6/26	11	1	0	0.00	0	0.00	1	0.09	0.09	0	0.00	1	0.09
	7/10	12	2	2	0.17	0	0.00	0	0.00	0.17	2	0.17	0	0.00
	7/17	12	0	0	0.00	0	0.00	0	0.00	0.00	0	0.00	0	0.00
	7/24	12	0	0	0.00	0	0.00	0	0.00	0.00	0	0.00	0	0.00
	7/31	12	2	2	0.17	0	0.00	0	0.00	0.17	1	0.08	1	0.08
	8/07	12	0	0	0.00	0	0.00	0	0.00	0.00	0	0.00	0	0.00
	8/14	13	0	0	0.00	0	0.00	0	0.00	0.00	0	0.00	0	0.00
	8/21	13	0	0	0.00	0	0.00	0	0.00	0.00	0	0.00	0	0.00
	8/28	13	1	1	0.08	0	0.00	0	0.00	0.08	0	0.00	1	0.08

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Mist Netting 1979

Field	Date	#Nets	#Birds	#HY	<u>#HY</u> Net	#SY	<u>#SY</u> Net	#ASY	<u>#ASY</u> Net	<u>#Birds</u> Net	#♂s	<u>#♂s</u> Net	#♀s	<u>#♀s</u> Net
2	6/20	11	2	2	0.18	0	0.00	0	0.00	0.18	0	0.00	2	0.18
	6/27	11	2	1	0.09	0	0.00	1	0.09	0.18	0	0.00	2	0.18
	7/03	11	2	2	0.18	0	0.00	00	0.00	0.18	1	0.09	1	0.09
	7/11	11	6	6	0.55	0	0.00	0	0.00	0.55	4	0.36	2	0.18
	7/18	11	0	0	0.00	0	0.00	0	0.00	0.00	0	0.00	0	0.00
	7/25	11	1	1	0.09	0	0.00	0	0.00	0.09	1	0.09	0	0.00
	8/02	10	2	1	0.10	1	0.10	0	0.00	0.20	0	0.00	2	0.20
	8/08	10	2	2	0.20	0	0.00	0	0.00	0.20	1	0.10	1	0.10
	8/15	11	0	0	0.00	0	0.00	0	0.00	0.00	00	0.00	0	0.00
	8/22	11	0	0	0.00	0	0.00	0	0.00	0.00	00	0.00	0	0.00
7		106												
7	6/06	19	0	0	0.00	0	0.00	0	0.00	0.00	0	0.00	0	0.00
	6/13	19	2	1	0.05	1	0.05	0	0.00	0.11	2	0.11	0	0.00
	6/20	17	2	2	0.12	0	0.00	0	0.00	0.12	1	0.06	0	0.06
	6/27	19	3	3	0.16	0	0.00	0	0.00	0.16	2	0.11	11	0.05
	7/03	19	1	1	0.05	0	0.00	0	0.00	0.05	0	0.00	1	0.05
	7/11	19	0	0	0.00	0	0.00	0	0.00	0.00	0	0.00	0	0.00
	7/18	19	1	1	0.05	0	0.00	0	0.00	0.00	0.00	0.00	1	0.05
	7/25	19	3	3	0.16	0	0.00	0	0.00	0.16	2	0.11	1	0.05
	8/08	19	1	1	0.05	0	0.00	0	0.00	0.05	0	0.00	1	0.05
	8/15	19	3	3	0.16	0	0.00	0 0	0.00	0.16	1	0.05	2	0.11
		166												

Mist Netting 1979

Field	Date	#Nets	#Birds	#HY	<u>#HY</u> Net	#SY	<u>#SY</u> Net	#ASY	<u>#ASY</u> Net	<u># Birds</u> Net	#♂s	<u>#♂s</u> Net	#♀s	<u>#♀s</u> Net
29	6/06	11	2	0	0.00	0	0.00	2	0.18	0.18	1	0.09	1	0.09
	6/13	11	2	1	0.09	1	0.09	0	0.00	0.18	1	0.09	1	0.09
	6/20	12	5	5	0.42	0	0.00	0	0.00	0.42	5	0.42	0	0.00
	6/27	12	2	2	0.17	0	0.00	0	0.00	0.17	2	0.17	0	0.00
	7/11	12	3	3	0.25	0	0.00	0	0.00	0.25	1	0.08	2	0.18
	7/18	12	1	1	0.08	0	0.00	0	0.00	0.08	1	0.08	0	0.00
	7/25	12	2	1	0.08	0	0.00	1	0.08	0.17	0	0.00	2	0.17
	8/08	12	3	2	0.17	0	0.00	1	0.08	0.25	2	0.17	1	0.08
	8/15	12	2	2	0.17	0	0.00	0	0.00	0.17	2	0.17	0	0.00

job

Nightlighting

Nightlighting techniques were the same as in 1978. We walked through fields and flushed any birds roosting and "lighted" them with intense lights to confuse the birds and cause them to land. We then tried to net the birds with long handled nets. In the fields that can be driven with a jeep, two people would sit on the hood, one lighting the other netting, while the driver slowly drove down mowed strips in the field (see enclosed map for areas nightlighted). This technique was usually more successful than the flushing method. The birds tended to sit in the strips and not flush as the jeep approached.

We found that the best nights for nightlighting were overcast with moderate to heavy rains. When we started working on the Moosehorn, the weather was cloudy with moderate rains and our ratio of captures to birds seen was quite good. The weather changed to hot and humid conditions and when it rained, much fog was produced which reduced the penetration of our lights. Our success ratio dropped considerably. Finally, the weather changed to cooler and drier conditions; thus, when it rained our success ratio improved.

The most difficult part of nightlighting was trying to walk through those fields with slash. The woodcock seemed to prefer the slash; therefore, we had to stumble our way through it to flush the birds. We only nightlighted or mist netted a particular field once a week so use of that field by the woodcock would not be disrupted.

SUMMARY OF NIGHTLIGHTING SUCCESS OF MAJOR FIELDS IN 1979

FIELD 1

Date	# Birds Caught	# Observers	# Hours In Field	# Man-Hrs.	# Flushes	Total # Birds In Field	Total # Birds/Man-Hr.
5/29	3	7	3.00	21.00	5	8	0.38
6/21	14	6	0.92	5.52	0	4	0.72
7/12	2	7	0.092	6.44	7	9	1.39
7/25	0	7	0.42	2.94	5	5	1.70
8/1	4	6	1.27	7.62	13	17	2.23
8/12	3	5	1.17	5.85	1	4	0.68
8/27	4	7	1.00	7.00	18	22	3.14

# Birds Caught	# Man-Hr.	# M	# F	#HY M	#HY F	#SY M	#SY F	#ASY M	#ASY F
0.14		3	0	0	0	3	0	0	0
0.72		3	1	2	0	1	1	0	0
0.31		1	1	1	0	0	1	0	0
0.00		0	0	0	0	0	0	0	0
0.52		2	2	0	1	2	0	0	1
0.51		2	1	1	0	1	1	0	0
0.57		3	1	0	1	3	0	0	0

FIELD 7

Date	# Birds Caught	# Observers	# Hours In Field	# Man-Hrs.	# Flushes	Total # Birds In Field	Total # Birds/Man-Hr.
5/30	5	-	-	-	5	10	-
7/01	0	7	0.33	2.31	0	0	0
8/19	1	6	0.42	2.52	0	1	0.40
8/29	5	7	1.17	8.19	5	10	1.22

Field 7 cont.

# Birds Caught/Man-Hr.	# M	# F	#HY M	#HY F	#SY M	#SY F	#ASY M	#ASY F	#AHY M	#AHY F
0	3	2	2	0	0	0	1	2	0	0
0	0	0	0	0	0	0	0	0	0	0
0.40	0	1	0	1	0	0	0	0	0	0
0.61	2	3	1	1	0	0	0	0	1	2

FIELD 10

Date	# Birds Caught	# Observers	# Hours In Field	# Man-Hrs.	# Flushes	Total # Birds In Field	Total # Birds/Man-Hr.
5/29	5	7	1.25	8.75	5	10	1.14
6/21	2	6	0.75	4.50	3	5	1.11
7/12	0	7	0.67	4.69	10	10	2.13
7/25	1	7	0.75	5.25	7	8	1.52
8/1	1	6	0.92	5.52	10	11	1.99
8/12	12	5	1.75	8.75	11	13	1.49
8/19	8	5	1.58	7.90	2	10	1.27
8/27	1	7	0.25	1.75	8	9	5.14

# Birds Caught/Man-Hr.	# M	# F	#HY M	#HY F	#SY M	#SY F	#ASY M	#ASY F
0.57	5	0	0	0	4	0	1	0
0.44	1	0	0	1	0	0	1	0
0.00	0	0	0	0	0	0	0	0
0.19	1	0	1	0	0	0	0	0
0.18	1	0	1	0	0	0	0	0
1.37	5	7	2	1	2	4	1	2
1.01	6	2	2	2	2	0	1	0
0.57	0	1	0	1	0	0	0	0

FIELD 11

<u>Date</u>	<u># Birds Caught</u>	<u># Observers</u>	<u># Hours In Field</u>	<u># Man-Hrs.</u>	<u># Flushes</u>	<u>Total # Birds In Field</u>	<u>Total # Birds/Man-Hr.</u>
5/30	2	-	-	-	4	6	-
6/21	12	3	2.75	7.25	1	13	1.79
7/01	3	3	1.42	4.26	0	4	0.94
7/12	1	4	0.92	3.64	2	3	0.82
7/25	1	4	1.00	4.00	1	2	0.50
8/01	6	3	1.00	3.00	8	14	4.67
8/12	2	3	1.25	3.75	1	3	0.80
8/19	1	3	0.75	2.25	0	1	0.44
8/29	0	3	0.17	0.51	0	0	0.00

<u># Birds Caught/Man-Hr.</u>	<u># M</u>	<u># F</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>
-	1	1	0	0	0	0	1	1
4.66	8	4	8	4	0	0	0	0
0.70	3	0	1	0	2	0	0	0
0.27	0	1	0	0	0	0	0	1
0.25	1	0	1	0	0	0	0	0
2.00	2	4	2	3	0	1	0	0
0.53	2	0	2	0	0	0	0	0
0.44	1	0	1	0	0	0	0	0
0.00	0	0	0	0	0	0	0	0

FIELD 20

<u>Date</u>	<u># Birds Caught</u>	<u># Observers</u>	<u># Hours In Field</u>	<u># Man-Hrs.</u>	<u># Flushes</u>	<u>Total # Birds In Field</u>	<u>Total # Birds/Man-Hr.</u>
5/30	4	-	-	-	2	6	-
6/21	0	6	0.33	1.98	1	1	0.51
7/12	0	4	0.25	1.00	1	1	1.00
8/01	0	3	0.17	0.51	0	0	0.00
8/12	0	3	0.08	0.24	0	0	0.00
8/19	2	3	0.58	1.74	0	2	1.15
8/29	0	3	0.33	0.99	0	0	0.00

Field 20 cont.

<u># Birds Caught/Man-Hr.</u>	<u>#</u> <u>M</u>	<u>#</u> <u>F</u>	<u>#HY</u> <u>M</u>	<u>#HY</u> <u>F</u>	<u>#SY</u> <u>M</u>	<u>#SY</u> <u>F</u>	<u>#ASY</u> <u>M</u>	<u>#ASY</u> <u>F</u>
-	3	1	0	0	0	0	3	1
0.00	0	0	0	0	0	0	0	0
0.00	0	0	0	0	0	0	0	0
0.00	0	0	0	0	0	0	0	0
0.00	0	0	0	0	0	0	0	0
1.15	0	2	0	0	0	0	0	2
0.00	0	0	0	0	0	0	0	0

FIELD 22 (Cow Pasture)

<u>Date</u>	<u># Birds Caught</u>	<u># Observers</u>	<u># Hours In Field</u>	<u># Man-Hrs.</u>	<u># Flushes</u>	<u>Total # Birds In Field</u>	<u>Total # Birds/Man-Hr.</u>
7/01	7	4	1.83	7.62	3	10	1.31
7/12	1	7	0.83	5.81	7	8	1.38
7/25	2	7	1.25	8.75	1	3	0.34
8/29	0	3	0.50	1.50	0	0	0.00

FIELD 25 (Cow Pasture)

7/01	0	4	0.50	2.00	6	6	3.00
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	<u># Birds Caught/Man-Hr.</u>	<u>#</u> <u>M</u>	<u>#</u> <u>F</u>	<u>#HY</u> <u>M</u>	<u>#HY</u> <u>F</u>	<u>#SY</u> <u>M</u>	<u>#SY</u> <u>F</u>	<u>#ASY</u> <u>M</u>	<u>#ASY</u> <u>F</u>
FIELD 22	0.92	4	3	4	2	0	1	0	0
	0.17	1	0	1	0	0	0	0	0
	0.23	0	2	0	0	0	2	0	0
	0.00	0	0	0	0	0	0	0	0
FIELD 25	0.00	0	0	0	0	0	0	0	0

FIELD 29

<u>Date</u>	<u># Birds Caught</u>	<u># Observers</u>	<u># Hours In Field</u>	<u># Man-Hrs.</u>	<u># Flushes</u>	<u>Total # Birds In Field</u>	<u>Total # Birds/Man-Hr.</u>
5/30	3	-	-	-	5	8	-
7/01	5	7	1.00	7.00	3	8	1.14
8/19	12	6	1.58	9.48	2	14	1.48
8/29	3	7	0.67	4.64	5	8	1.71

<u># Birds Caught/Man-Hr.</u>	<u># M</u>	<u># F</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>#AHY M</u>
	1	2	1	0	0	2	0	0	0
0.71	3	2	3	2	0	1	0	0	0
1.27	3	9	2	4	1	3	0	2	0
0.64	0	3	0	2	0	0	0	0	1

FIELD 36

<u>Date</u>	<u># Birds Caught</u>	<u># Observers</u>	<u># Hours In Field</u>	<u># Man-Hrs.</u>	<u># Flushes</u>	<u>Total # Birds In Field</u>	<u>Total # Birds/Man-Hr.</u>
5/30	0	-	-	-	0	0	-
6/21	1	5	0.33	1.65	6	7	4.24
7/01	1	4	0.42	1.68	1	2	1.19
7/12	0	4	0.42	1.68	0	0	0.00
8/1	0	3	0.25	0.75	2	2	2.67

<u># Birds Caught/Man-Hr.</u>	<u># M</u>	<u># F</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>
	0	0	0	0	0	0	0	0
0.61	0	1	0	1	0	0	0	0
0.59	1	0	0	0	1	0	0	0
0.00	0	0	0	0	0	0	0	0
0.00	0	0	0	0	0	0	0	0

FIELD 39-40

Date	# Birds Caught	Observers	# Hours In Field	# Man-Hrs.	# Flushes	Total # Birds In Field	Total # Birds/Man-Hr.
7/01	0	4	0.42	1.68	5	5	2.98
7/12	0	5	0.67	3.35	5	5	1.49
7/25	1	7	0.58	4.06	4	5	1.23
8/12	6	5	0.75	3.75	2	8	2.13
8/19	2	5	0.75	3.75	1	3	0.80
8/29	5	7	1.00	7.00	2	7	1.00

# Birds Caught/Man-Hr.	# M	# F	#HY M	#HY F	#SY M	#SY F	#ASY M	#ASY F	#AHY M
0.00	0	0	0	0	0	0	0	0	0
0.00	0	0	0	0	0	0	0	0	0
0.25	1	0	0	0	1	0	0	0	0
1.60	4	2	0	1	2	0	2	1	0
0.53	2	0	0	0	1	0	1	0	0
0.71	5	0	3	0	1	0	0	0	1

FIELD 90 (Horse Pasture)

Date	# Birds Caught	# Observers	# Hours In Field	# Man-Hrs.	# Flushes	Total # Birds In Field	Total # Birds/Man-Hr.
7/01	0	4	0.50	2.00	6	6	3.00
7/12	1	7	0.58	4.06	5	6	1.48
7/25	1	7	0.33	2.33	0	1	0.43

# Birds Caught/Man-Hr.	# M	# F	#HY M	#HY F	#SY M	#SY F	#ASY M	#ASY F
0.00	0	0	0	0	0	0	0	0
0.24	1	0	0	0	1	0	0	0
0.43	0	1	0	0	0	0	0	1

FIELD 41 (Barn Meadow)

<u>Date</u>	<u># Birds Caught</u>	<u># Observers</u>	<u># Hours In Field</u>	<u># Man-Hrs.</u>	<u># Flushes</u>	<u>Total # Birds In Field</u>	<u>Total # Birds/Man-Hr.</u>
7/25	4	4	1.75	7.00	4	8	1.14
8/01	3	3	1.20	3.60	12	15	4.17
8/29	7	3	1.83	5.49	3	10	1.82

<u># Birds Caught/Man-Hr.</u>	<u># M</u>	<u># F</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>#AHY F</u>
0.57	2	2	2	1	0	1	0	0	0
0.83	1	2	1	2	0	0	0	0	0
1.28	3	4	3	2	0	0	0	0	2

Woodcock Weights - HY M

Time periods	Traps		Mist Nets		Nightlighting		Total Avg wt (grams)
	Sample size	Avg wt (grams)	Sample size	Avg wt (grams)	Sample size	Avg wt (grams)	
5/31 - 6/03	0	0	0	0	0	0	00
6/04 - 6/10	0	0	1	144.0	0	0	144.0
6/11 - 6/17	4	139.5	7	143.6	0	0	142.1
6/18 - 6/24	5	135.6	7	149.0	10	138.8	141.3
6/25 - 7/01	3	137.7	7	144.4	8	143.9	143.1
7/02 - 7/08	2	129.0	4	150.5	0	0	143.3
7/09 - 7/15	1	147.0	8	143.1	2	149.5	144.6
7/16 - 7/22	2	149.5	4	150.5	0	00	150.2
7/23 - 7/29	7	140.6	6	151.5	4	152.0	147.1
7/30 - 8/05	3	137.3	1	149.0	4	153.8	147.0
8/06 - 8/12	4	131.8	5	153.2	5	148.0	145.2
8/13 - 8/19	5	134.2	4	149.8	5	151.6	144.9
8/20 - 8/26	4	133.0	1	155.0	0	0	137.4
8/27 - 9/02	2	126.0	0	0	7	155.7	149.1
Totals	42		55		45		

Woodcock Weights - HY F

Time periods	Traps		Mist Nets		Nightlighting		Total Avg wt (grams)
	Sample size	Avg wt (grams)	Sample size	Avg wt (grams)	Sample size	Avg wt (grams)	
5/31 - 6/03	0	0	0	0	0	0	0
6/04 - 6/10	0	0	0	0	0	0	0
6/11 - 6/17	0	0	1	168.0	0	0	168.0
6/18 - 6/24	5	161.8	5	179.8	6	168.2	169.8
6/24 - 7/01	3	166.0	2	182.0	2	175.0	173.1
7/02 - 7/08	3	159.7	2	191.0	0	0	172.2
7/09 - 7/15	4	149.5	4	183.3	0	0	166.4
7/16 - 7/22	1	165.0	3	200.7	0	0	191.8
7/23 - 7/29	2	148.5	4	170.3	1	182.0	165.7
7/30 - 8/05	1	183.0	3	190.7	6	180.8	184.0
8/06 - 8/12	4	172.5	3	179.3	2	184.0	177.3
8/13 - 8/19	2	148.0	2	179.5	7	182.1	175.4
8/20 - 8/26	0	0	0	0	0	0	0
8/27 - 9/02	0	0	1	193.0	6	192.5	192.6
Totals	25		30		30		

Woodcock Weights - AHY M

Time Periods	Traps		Mist Nets		Nightlighting		Total Avg wt (grams)
	Sample size	Avg wt (grams)	Sample size	Avg wt (grams)	Sample size	Avg wt (grams)	
5/31 - 6/03	0	0	0	0	0	0	0
6/04 - 6/10	0	0	1	146.0	0	0	146.0
6/11 - 6/17	0	0	3	151.7	0	0	151.7
6/18 - 6/24	1	165.0	0	0	2	152.5	156.7
6/25 - 7/01	3	140.7	0	0	7	149.3	145.0
7/02 - 7/08	1	125.0	0	0	0	0	125.0
7/09 - 7/15	0	0	1	143.0	1	154.0	148.5
7/16 - 7/22	1	161.0	2	149.0	0	0	153.0
7/23 - 7/29	0	0	0	0	1	164.0	164.0
7/30 - 8/05	0	0	0	0	2	146.5	146.5
8/06 - 8/12	1	144.0	1	142.0	8	152.3	150.4
8/13 - 8/19	1	93.0	0	0	6	143.0	135.9
8/20 - 8/26	1	135.0	0	0	0	0	135.0
8/27 - 9/02	0	0	0	0	6	152.7	152.7
Totals	9		8		29		

Woodcock Weights - AHY F

Time Periods	Traps		Mist Nets		Nightlightings		Total Avg wt (grams)
	Sample size	Avg wt (grams)	Sample size	Avg wt (grams)	Sample size	Avg wt (grams)	
5/31 - 6/03	0	0	0	0	0	0	0
6/04 - 6/10	0	0	4	210.8	0	0	2210.8
6/11 - 6/17	4	175.5	1	198.0	0	0	180.0
6/18 - 6/24	2	156.0	3	206.3	1	181.0	185.3
6/25 - 7/01	3	195.0	2	198.0	3	189.0	193.5
7/02 - 7/08	1	178.0	1	189.0	0	0	168.5 183.5
7/09 - 7/15	0	0	0	0	2	189.0	189.0
7/16 - 7/22	1	116.0	0	0	0	0	116.0
7/23 - 7/29	0	0	2	213.0	4	179.5	190.7
7/30 - 8/05	0	0	22	205.0	2	189.5	197.3
8/06 - 8/12	1	170.0	0	0	8	190.3	188.0
8/13 - 8/19	0	0	0	0	7	186.7	186.7
8/20 - 8/26	1	196.0	0	0	0	0	196.0
8/27 - 9/02	1	187.0	0	0	5	191.4	190.7
Totals	14		15		32		

1979 Banding Results

	New Birds	Returns	New Bird Mortalities	Return Mortalities
HY M	89	-	2	-
HY F	62	-	1	-
HY U(chicks)	40	-	0	-
L F	7	-	0	-
L M	13	-	0	-
SY M	50	9	0	0
SY F	22	5	0	0
ASY M	24	20	1	1
ASY F	14	21	0	0
AHY M	0	0	0	0
AHY F	3	0	0	0
U F	1	0	0	0
Totals	325	55	4	1

Yearly Capture Summary (Baring) 1964-1979

<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

New - a bird not previously banded

Return - a previously banded bird captured for the first time in that year

Repeat - capture of a bird which has already been caught in that year

*includes 13 birds known to be dead

**includes 3 birds known to be dead

***includes 28 captures of birds known to be dead now

+includes 5 birds known to be dead

++includes 1 bird known to be dead

+++includes 4 captures of birds known to be dead now

Discussion

Following the 1978 record catch, the 1979 summer was characterized by a very low number of birds caught. We believe this was caused by inclement weather in May at the time of hatch. Mendall and Aldous (1943) found that the average hatching dates in Maine were between 11 May and 25 May. Temperature and precipitation between 10 May and 30 May for 1978 and 1979 were significantly different.

1978			1979		
High Avg. Temp. °F	Low Avg. Temp. °F	Precipita- tion	High Avg. Temp. °F	Low Avg. Temp. °F	Precipita- tion
72.9	42.4	0.73 in	61.4	44.7	6.79 in

Significant here is the fact that in 1979 during the brood hatching period there was a much greater amount of rain with generally colder temperatures than in 1978. This could have placed a great stress on the newly hatched birds and mortalities would have been high. This idea is borne out in examining the breakdown of birds caught in the years 1978 and 1979 (page). Although the total birds caught in 1979 was 149 birds lower than 1978, there was actually an increase in the number of adults caught. However, there were as many as 153 fewer HY caught.

Slash preferences began to be seen this year. The slash in Field 1 was burned 7 June while the slash area in Field 10 was left unburned. Field observations while nightlighting previous to 7 June showed high bird roosting usage in both slash areas. After burning, usage of the slash area in Field

1 dropped off, while usage of the slash in Field 10 remained high. Observation suggests that birds preferred unburned slash for roosting.

Judging from this year's data, the number of birds caught next year should remain relatively low with a very small SY population. If conditions permit survival of a good HY population in May 1980, the population should begin to normalize in 1981 with about 10 HY caught to every adult.

Critique of Summer's Work

The 1979 field crew experienced a variety of activities and got much accomplished. We had five crew members, two more than last year, and were assisted by YCC enrollees who accompanied us in our work, especially earthworm analysis and vegetation analysis. The work of the YCC, YACC, and vocational school in clear-cutting strips and plots was also greatly appreciated as it freed the woodcock crew for more work in data collection and related tasks.

Better care and treatment of the mist nets when removing slash and birds would save both time and money in replacing damaged nets. Care is also needed when pulling mist net poles off the stakes. Mushroomed stakes should be replaced whenever possible to prevent sagging and damaged nets.

Checking traplines between 10:00 AM and 12:00 noon worked well. On rainy days the lines were run between 8:00 AM and 10:00 AM to reduce the problems of exposure for the trapped birds. In some instances portable traps would be helpful in capturing woodcock that are frequently flushed from one spot.

Nightlighting would be easier by replacing the awkward shoulder battery packs with backpack frames. Also hand nets should be given closer attention for wear and tear and the heavy handles replaced with lighter aluminum handles. All of these changes could improve the ease and success in capturing woodcock, particularly in slash.

In addition to usual nightlighting areas, the recent strip cuts along Icehouse and Magurrewock roads were nightlighted once during the summer. Very little use was being made of these areas for roosting. This could be monitored more closely in future seasons.

During the summer there were a number of areas where birds were continuously flushed, such as along the stream bank going into trapline 4. The use of "portable traps" might be re-instituted. Portable traps were used in 1965 and had a good success rate. Their return might be a relatively easy way of increasing trapline success.

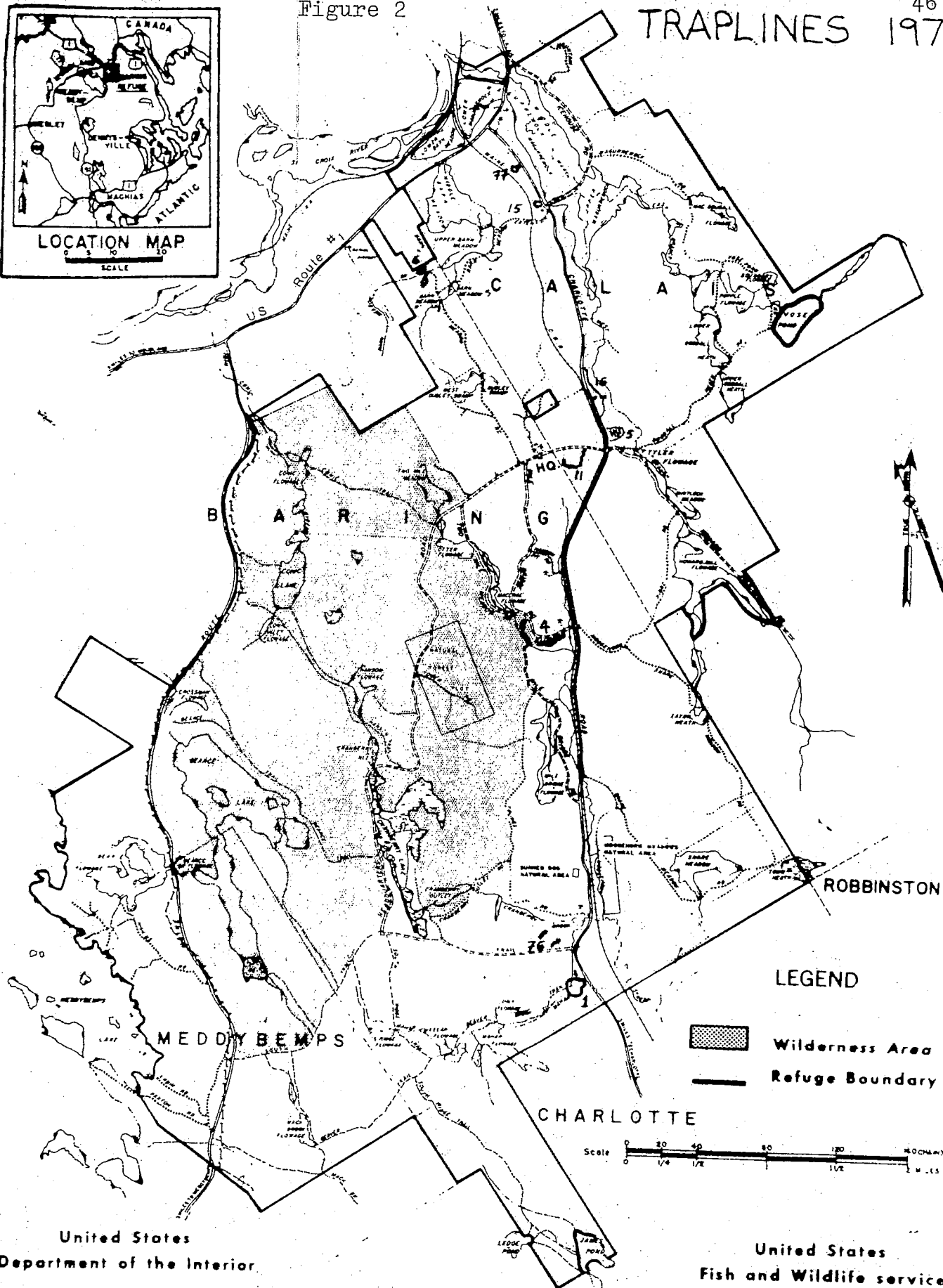
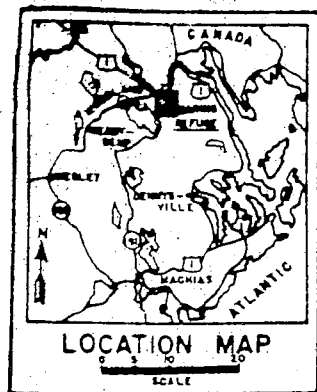
Deer and wildlife night censusing this year was started too late to permit evaluation of its worth as an index. However, it should be continued next year, preferably starting in the spring, in an attempt to determine its value and also determine the wildlife usage of the fields and cuts.

Good team spirit in the woodcock shack, in the field, and on the softball field made for a good summer which would have been even more productive had the woodcock population stayed strong as in previous years.

Figure 2

TRAPLINES 1979

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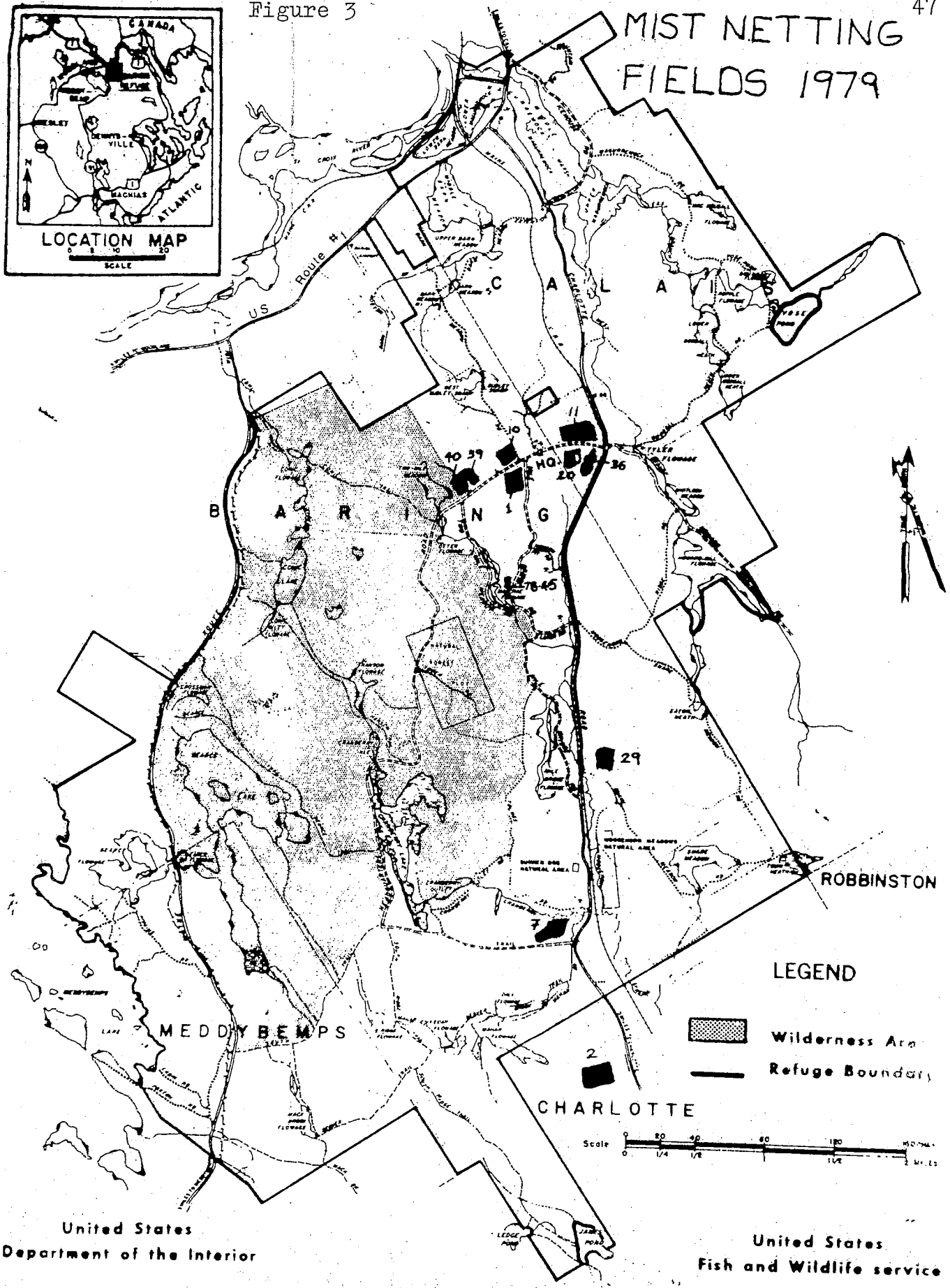
United States
Department of the Interior

United States
Fish and Wildlife Service

Moosehorn National Wildlife Refuge
Washington County Maine

Rev. 12/4/75

Figure 3



Moosehorn National Wildlife Refuge
Washington County, Maine

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