

# NOTES ON COMMON SNIPE WINTERING ON PAYNES PRAIRIE, FLORIDA

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## ABSTRACT

From the fall of 1967 through the winter of 1972-73, 2,365 common snipe (*Capella gallinago*) were banded on Paynes Prairie, a wetlands south of Gainesville, Alachua County, Florida. Cattle-grazed maiden-cane (*Panicum hemitomen*) was the preferred cover for snipe. Fall migrants came in late-September. The wintering population stabilized from mid-November through late-February. Spring departure began in mid-March; only a few stragglers remained on the study area after the middle of April. Snipe weighed an average of 100 g from October through March and 112 g in April. Band recoveries showed that the snipe returned each year to the same winter range. Only 0.4 percent of the birds recovered were shot by hunters confirming the relative under-exploitation of the species.

## INTRODUCTION

A snipe banding project supported by the Bureau of Sport Fisheries and Wildlife was initiated in Florida during the fall of 1967 under the "Accelerated Research Program". A concise history and the projected goals of "ARP" were presented by MacDonald and Evans (1970).

The purpose of this report is to update the information which has resulted from the ARP-funded snipe banding project in Florida.

I would like to express appreciation to Joe Priest, owner of the prairie until 1970, for granting access to his property. In 1970, the Division of Parks and Recreation, Florida Department of Natural Resources, purchased the prairie and permitted the continuation of the work. Game Managers Robert W. Phillips and Jerry A. Brown assisted with much of the field work along with student assistants Neil F. Eichholz, James A. Brogden, Harvey L. Hill, Jr., Michael Miller, and Terry A. Gilbert. Special thanks are due to Dr. Leslie M. Tuck for the helpful suggestions he made during a two-week visit during February 1968. I would also like to acknowledge the administrative support of James A. Powell, A. Gordon Spratt, and Spencer R. Amend. Lovett E. Williams, Jr. offered helpful criticism on the manuscript.

## STUDY AREA

Snipe were trapped almost exclusively on Paynes Prairie, an extensive freshwater marsh lying just south of Gainesville, Florida. A general description of the area was presented earlier (Fogarty 1969).

Four distinct plant communities make up most of the prairie where the trapping was conducted. Snipe used all of these communities to some degree during the duration of the project.

The wetter parts of the marsh support mixed stands of maidencane (*Panicum hemitomen*), *Eleocharis* spp., watershield (*Brasenia schreberi*), spatterdock (*Nymphoides aquaticum*), water pennywort (*Hydrocotyle umbellata*), various smartweeds (*Polygonum* spp.), duck weed (*Lemna minor*) and American lotus (*Nelumbo lutea*).

Stands of pickerelweed (*Pondetaria lanceolata*) and cat-tail (*Typha latifolia*) are interspersed throughout the study area. This plant association is found in

depressions where the water is usually too deep for maiden-cane. When these two species were killed back by winter frosts, snipe were provided with cover and muck openings for feeding.

The deepest depressions on the study area often contain floats of water hyacinths. When the water recedes, the water hyacinths become stranded. Snipe were attracted by the hyacinths and could be seen probing vigorously. Hyacinths have an extensive, multi-branched root system that often reaches a length of three feet. This root system is a good habitat for aquatic invertebrates (O'Hara 1967) which apparently became available to snipe when the mats were stranded and compacted by receding water.

Homogeneous stands of maiden-cane cover most of the study area. Heavy use of this community by snipe was in part due to cattle that grazed the maiden-cane to a height of about six inches. The "fertilization and cultivation" provided by cattle probably increased the quantity of invertebrates eaten by snipe and enhanced feeding efficiency.

## MATERIALS AND METHODS

Nearly all of the snipe banded in this study were captured with mist nets. The trapping techniques used on Paynes Prairie were described earlier (Fogarty 1969).

After banding, snipe were weighed to the nearest gram on Ohaus "Dial-O-Gram" balance. Wing chord, tarsus-metatarsus and middle-digit, and exposed culmen lengths (after Baldwin, et. al. 1931) were measured to the nearest mm with a 30 cm metric rule cemented to a lightweight wooden board. The wing chord was measured by folding the wing and sliding it forward on the rule until the notch between the ulna and the carpometatarsus contacted a 1/4-inch block mounted on the board at the zero point of the rule. The length was measured to the tip of the longest primary. The tarso-metatarsus was placed flat on the rule so that the posterior of the tibia was in contact with the block. The leg was then measured from the nail tip to the middle digit. Bill lengths in this paper include the cere.

Snipe were aged according to the method described by Tuck (1972). General plumage characteristics and evidence of molt were noted.

## RESULTS AND DISCUSSION

*Weights.* Snipe were weighed during two of the wintering periods (1968-69 and 1972-73) and parts of two others (1967-68 and 19769-70) (Table 1).

Tuck (1972) noted that snipe summering in Newfoundland averaged about 100 g from May through September before experiencing a significant weight gain of about 25 g in October. He attributed the gain to the deposition of pre-migratory fat. Snipe arriving on Paynes Prairie in early October weighed 99.5 g, indicating that the weight was lost during migration.

Snipe averaged slightly less than 100 g while on the study area from October through March. The average weight of 23 birds captured in April increased to 112 g, suggesting a spring premigratory weight gain similar to that of the October birds described by Tuck (1972). In his banding work in southeastern Texas, Arnold (1972) observed that snipe weights stabilized in January and February before increasing in late March and April prior to migration.

Although the average weights were constant during the winter months, weight changes of individual snipe were severe (Table 2). Five of seven snipe recaptured within one week of banding showed weight losses which may have resulted from the stress of being handled. Snipe recaptured more than seven days after banding were evenly divided between those gaining and those losing weight,

Table 1. Snipe weights at weekly intervals, 1967-1973.

Week	Sample Size	Range	Average	Standard Deviation
October 1-7	54	85 - 118	99	+ 6.4
October 8-15	36	83 - 114	100	+ 7.9
October 16-23	42	82 - 113	95	+ 8.7
October 24-31	111	70 - 116	98	+ 8.6
November 1-7	192	53 - 153	98	+ 9.3
November 8-15	52	82 <i>u</i> 122	99	+ 9.7
November 16-23	58	82 - 123	99	+ 7.7
November 24-30	0			
December 1-7	40	89 - 113	101	+ 6.1
December 8-15	62	84 - 119	102	+ 7.4
December 16-23	49	76 - 129	104	+ 9.0
December 24-31	29	84 - 119	99	+ 7.9
January 1-7	4	87 - 103	93	+ 9.2
January 8-15	10	92 - 119	106	+ 7.5
January 16-23	33	91 - 117	100	+ 6.8
January 24-31	92	81 - 119	101	+ 7.1
February 1-7	116	81 - 124	103	+ 7.3
February 8-15	45	76 - 113	94	+ 8.1
February 16-23	26	84 - 119	99	+ 8.8
February 24-29	90	83 - 116	100	+ 7.9
March 1-7	45	86 - 118	99	+ 8.1
March 8-15	11	88 - 110	97	+ 7.9
March 16-23	5	96 - 105	102	+ 3.8
March 24-31	0			
April 1-7	8	92 - 126	111	+ 10.9
April 8-15	15	89 - 136	113	+ 13.2

Table 2. Weight changes of recaptured snipe.

Weight (g) on date of:		No. Days Lapse	Weight Change	Percent Change
1st Capture	Recapture			
114 - 4 Nov. 68	95 - 6	Nov. 68	2	-98
99 - 31 Jan. 68	87 - 2 Feb. 68	2	-12	12
98 - 1 Feb. 68	98 - 3 Feb. 68	2	0	0
93 - 2 Feb. 68	89 - 4 Feb. 68	2	-4	4
90 - 14 Nov. 68	91 - 17 Nov. 68	3	1	1
100 - 9 Feb. 68	98 - 13 Feb. 68	7	-2	2
96 - 30 Oct. 72	116 - 27 Oct. 72	7	-2	2
87 - 18 Oct. 72	116 - 27 Oct. 72	9	29	33
92 - 3 Nov. 72	84 - 12 Nov. 72	9	-8	9
110 - 6 Nov. 68	110 - 17 Nov. 68	11	0	0
98 - 17 Oct. 68	110 - 9 Jan. 69	23	12	12
104 - 15 Nov. 68	104 - 20 Dec. 68	35	0	0
93 - 12 Nov. 72	102 - 19 Dec. 72	37	9	10
98 - 12 Nov. 72	103 - 19 Dec. 72	37	5	5
111 - 3 Nov. 72	92 - 13 Dec. 72	40	-19	17
104 - 3 Nov. 68	103 - 16 Jan. 69	44	-1	1
84 - 18 Oct. 72	97 - 19 Dec. 72	61	13	15
76 - 27 Oct. 72	98 - 29 Dec. 72	62	22	29
113 - 14 Oct. 72	105 - 19 Dec. 72	65	-8	7
113 - 14 Oct. 72	100 - 29 Dec. 72	75	-13	12
104 - 14 Oct. 72	97 - 17 Jan. 73	94	-7	7

suggesting that the vicissitudes of weather and feeding dictated the weight changes of individual birds. Tuck (1972) observed that a captive snipe placed in a wet field where food resources were suspected to be low, lost 12.6 percent of its total weight in one day and 41.0 percent in seven days. In this study a snipe captured 31 January 1968 lost 12.0 percent of its weight in two days. Another bird recaptured after a nine-day lapse in October 1972 experienced a 33.0 percent weight gain. One snipe not listed in Table 2 was recaptured twice. It weighed 94 g when banded on 5 November 1972. The snipe had gained 3 g when recaptured seven days later. On 17 November 1972, the snipe was caught again and weighed 94 g.

All snipe recaptured in this study appeared healthy.

*Other Measurements.* The following measurements were originally taken with the hope that they may provide some clues to sex and age identification. Studies conducted in Louisiana (Hoffpauer 1969 and Perry 1971) showed that apparently there are no statistical correlations among these and many other measurements which would allow accurate sex differentiation in the field. Consequently, the measurements are presented here merely to aid in the identification or characterization of this particular segment of the snipe population.

The wing chord of 324 wings measured at different periods throughout three banding seasons averaged 131.6 mm and ranged from 121 to 145 mm.

The length of the tarsus-metatarsus to the nail tip of the middle digit of 461 snipe captured during the first two seasons of banding averaged 72.5 mm with a range of 59 to 81 mm.

Bill measurements of 410 snipe captured during the 1967-68 season averaged 65.5 mm with a range of 56 to 77 mm.

*Age ratios.* Tuck (1972) described a method of aging snipe based on characters of the wing coverts. Using this method during the 1972-73 season, close

agreement was found in the adult to juvenile ratio (57:43) of 287 snipe to the ratio of 250 birds aged by Tuck in Louisiana during March 1966 (58:42). However, the same method was used in previous years on the prairie and the age ratios obtained were inconsistent (Table 3).

Table 3. Age ratios of Paynes Prairie snipe.

Year	Age Ratio (Adults; juveniles)
1969-1970	34:66
1970-1971	23:77
1971-1972	23:77
1972-1973	57:43

Tuck (1972) commented that there were four young banded to each adult during his entire study in which he handled about 5,300 snipe. In this study, 1,616 snipe were aged using his technique. The ratio was 30:70 or about 2.33 young per adult.

*Molt.* In his discussion of plumage and molt, Tuck (1972) stated that juvenile snipe begin the Pre-Basic 1 molt around mid-August or when about 3-1/2 months old. This partial molt includes replacement of the rectrices. A small percentage, roughly 7.6, of the birds handled in October on Paynes Prairie were undergoing tail feather replacement. Presumably, these were late-hatched juveniles.

Tuck (1972) commented further that the Pre-Alternate molt begins in mid-January and continues up to early May depending on the bird's age. This molt is also incomplete and does not involve the flight feathers of the wing. Some juveniles (but no adults) lose their tail feathers; others only the center-two rectrices.

Notes were kept on tail molt during the 1968-69 season. Between 25 February and 2 March 1969, 117 snipe were banded. There were 67 birds undergoing active tail molt and 34 others wearing new tail feathers. Only 16 birds (13.7 percent) showed no sign of molt.

During the next three seasons, banding was terminated before mid-February when the tail molt usually commences.

During the 1972-73 season, only 13 snipe were captured between 23 February and 20 March. In this small sample, seven snipe (53.8 percent) showed new rectrices or rectrices in cannons.

*Arrival and departure.* Although a few snipe were seen on Paynes Prairie in mid-September, large flocks arrived later in the month and in early October. New arrivals flew around the study area in large flocks. Mist-netting during this period was productive.

Fall departure began near the end of February. Successful trapping continued through March. Only stragglers remained on the study area after mid-April.

Tuck (1972) described the pre-migratory restlessness of snipe in the fall and commented on the segregation of age groups. Heavy September flights near Codroy, Newfoundland were dominated by juveniles, and young birds outnumbered adults in October five to one.

Apparently, age class segregation also occurs in the spring prior to migration. The 117 snipe captured between 24 February and 2 March 1969 displayed pre-migratory restlessness. Although these birds were not aged by the wing covert pattern, the age ratio was 14:86 (adults to juveniles) based on the Pre-Alternate molt sequence rectrix replacement during this molt indicates a juvenile).

*Band retrieval data.* In this study, 2,365 snipe were banded and 74 were re-encountered, excluding three birds which were trapped on the study area more

than three months after banding but during the same season. Of the 74 recoveries, 66 (89.2 percent) were recovered in Florida, 62 were recaptured on the study area, three were recovered within a few miles of Paynes Prairie, and one was shot the year after banding about 120 miles south-southeast of the banding site.

The numbers of snipe recovered each year appeared relative to the total numbers of snipe handled during the season and the numbers of snipe released the prior season (Table 4). Arnold (1972) estimated a 5 to 8 percent recovery rate for wintering snipe in Texas. The recovery rate for Paynes Prairie was somewhat lower, approximately 3.2 percent.

Recoveries in the years subsequent to banding are presented in Table 5. Nearly 63 percent of the 62 snipe recovered on Paynes Prairie were re-encountered the year following banding. Only 14 (22.6 percent) were caught in the second post-banding season. A snipe banded 22 November 1967 was collected 59 months later. Another snipe was collected during 1972, five years and 28 days after banding. Tuck (1972) mentioned a recovery of an adult male banded 20 August 1960 in Codroy, Newfoundland was found freshly dead in Newfoundland on 3 January 1971

The few direct recoveries demonstrate the low hunter kill of the common snipe (Table 6). U. S. Fish and Wildlife Service banding records (Henry Reeves, pers. comm.) as of 31 August 1972 showed only a 2.4 percent recovery rate. How these birds were obtained was not specified in these data. By comparison, the rate of recovery for the American woodcock (*Philomena minor*) was 6.23 percent, roughly 2.6 times greater. Only nine birds (0.4 percent) of those snipe banded on Paynes Prairie were reported shot by hunters. Tuck (1972) reported a hunter kill rate of only 1.1 percent.

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Table 4. Recovery of common snipe on Paynes Prairie in year subsequent to banding.

Year Banded	Number Caught	Number Released with bands	Number Recovered And Year of Banding	Percent of Number Caught
1967-68	540	501	-	--
1968-69	520	507	11 - 1967-68	2.11
1969-70	452	442	3 - 1967-68 5 - 1968-69	1.76
1970-71	124	118	1 - 1967-68 4 - 1968-69 1 - 1969-70	4.83
1971-72	572	565	3 - 1967-68 1 - 1968-69 5 - 1969-70	2.27
1972-73	281	254	4 - 1970-71 2 - 1967-68 2 - 1968-69 0 - 1969-70 2 - 1970-71 18 - 1971-72	8.54

Table 5. Year-class of indirect recoveries on Paynes Prairie after five years of banding.

Year Class After Banding	Number of Recoveries	Percent
1	39	62.9
2	14	22.6
3	2	3.2
4	5	8.1
5	2	3.2
TOTAL	62	100.0

Table 6. Recoveries of common snipe from other areas.

Location	Lapse (Post-banding seasons)	Fate
Near Paynes Prairie	1	Shot
Near Paynes Prairie	None	Found dead
30 mi. E. Paynes Prairie	None	Shot
Osceola Co., Florida	1	Shot
Chattanooga, Tennessee	3	Shot
Springfield, Kentucky	1	Found dead
White River, Indiana	2	Shot
Muncie, Indiana	1	Caught; injured
Lone Tree, Iowa	1	Shot
Stella Creek, Wisconsin	1	Shot
22 mi. S. Ottawa, Ontario	1	Shot
Malartic, Quebec	2	Shot