

BANDING ACCOMPLISHMENTS

Lacassine National Wildlife Refuge is the only Mississippi Flyway management area currently wintering a major white-front flock. The economic importance of this flock has increased tremendously during the last decade. Through banding the void of knowledge that now exists on southern wintering white-fronts can be filled. The 290 geese captured during 1971 and 1972 are the first white-fronted geese banded in the State of Louisiana. They represent a significant step toward efficient management that will ensure the continued survival of this magnificent bird.

SUMMARY

Capture and banding of white-fronted geese is impossible with traditional, baited net-site methods. Careful study of the birds natural feeding patterns in ryegrass will, however, indicate places where the banding net can be taken to the geese. Chosen sites must be quickly prepared and camouflaged while the geese are not using the field. Lush grass is the principal attractant to the site, but larger numbers of geese can be concentrated in front of the nets by judicious baiting with rice. The best opportunity for trapping is immediately after large numbers of geese arrive on the wintering grounds while they are making initial use of grass fields.

LAW ENFORCEMENT IMPLICATIONS OF A WOOD DUCK ROOST STUDY IN LOUISIANA

by

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INTRODUCTION

Louisiana is a major production and wintering area for the wood duck which has traditionally constituted a large portion of the duck harvest in Louisiana. This paper deals with "roost shooting" of wood ducks which is perhaps the easiest and most popular way to harvest wood ducks. A study lasting from July, 1969 through February, 1971, was undertaken in Louisiana to evaluate the roosting flight count as an index to wood duck population trends in Louisiana (Tabberer, 1972). Data were collected on the effects of natural environmental factors and shooting on wood duck roosting habits.

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The practice of roost shooting wood ducks after legal shooting hours has long been recognized as an enforcement problem in Louisiana. The wood duck is quite an elusive bird during daytime and is most easily killed during the evening or morning flight to and from the roost. This paper deals only with the evening flight which appears to present the greatest enforcement problem in Louisiana. During the study, hunters were observed shooting as much as 30 minutes past sunset. During the 1972-73 waterfowl season, 18 citations for shooting wood ducks after sunset were issued by State and Federal agents in Louisiana (Graham, pers. comm.).

STUDY AREA AND METHODS

The study included 44 roosts located throughout Louisiana. Roosts were typically sloughs, wooded portions on man-made lakes, beaver ponds, flooded stream bottoms or natural lakes.

Ducks arriving at each of 44 roosts were counted on the first and third Thursday of each month from July through February for two consecutive years. The ducks were tallied as singles, pairs and flocks, with flock size noted, by five minute intervals from 20 minutes before sunset until 30 minutes past sunset. The exact time of arrival of the first and last duck was also noted. Cloud cover was classified by inspection as clear, partly cloudy or cloudy. Presence of duck shooting was noted only during the counting period. Precipitation during the counting period was noted.

DATA ANALYSIS

The relationship between arrival time of ducks in relation to sunset and time of year was obtained by regressing arrival time of the first and last duck on number of days since July 1. Tests for significance of linear, quadratic, cubic and quartic effects of days on arrival time [($Y=b_0+b_1X+b_2X^2+b_3X^3+b_4X^4$) Snedecor, 1967] were conducted. Non-significant terms were deleted from the equation by a backward deletion procedure. The percentage of ducks arriving after sunset in relation to waterfowl season and time of year was obtained. The relationship of observed roosting time to sunset, waterfowl season, cloud cover and seasonal change (summer vs. fall and winter) can be expressed for law enforcement purposes in terms of probability. The observed probability (expressed in percent) of an event's occurrence is calculated by the simple formula:

$$P = \frac{\text{Total number of occurrences of the event}}{\text{Total number of possible occurrences}} \times 100$$

RESULTS

The regressions of time of arrival of the first and last duck on days since July 1 (Figures 1 and 2) best illustrate the relationship of the roosting habit to sunset from summer through winter. The last duck was observed after sunset in all cases. The first duck was observed slightly before or right at sunset during summer and early fall, but time of observation shifted past sunset during late fall and winter. The probability of a wood duck being observed coming to roost after sunset is 20% higher during fall-winter season when waterfowl season is in progress than in summer (Table 1).

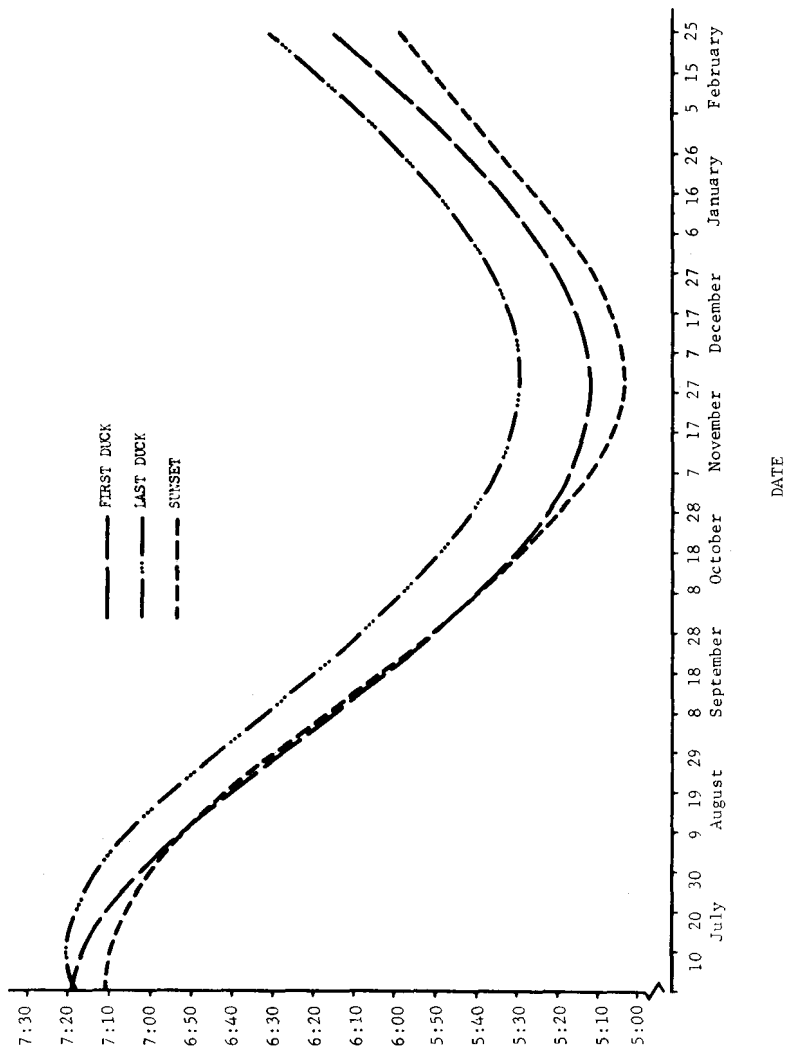


Figure 1. Regression of Time First and Last Duck Seen in Minutes Since 4:00 PM on Days Since July 1 for Year 1.

First Duck: $Y = 198.0 - 0.0201D^2 + 0.00013D^3 - 0.0000002D^4$, $R^2 = .59$

Last Duck: $Y = 214.12 - 0.0196D^2 + 0.00013D^3 - 0.0000002D^4$, $R^2 = .90$

Waterfowl season in progress November 15 through December 24.

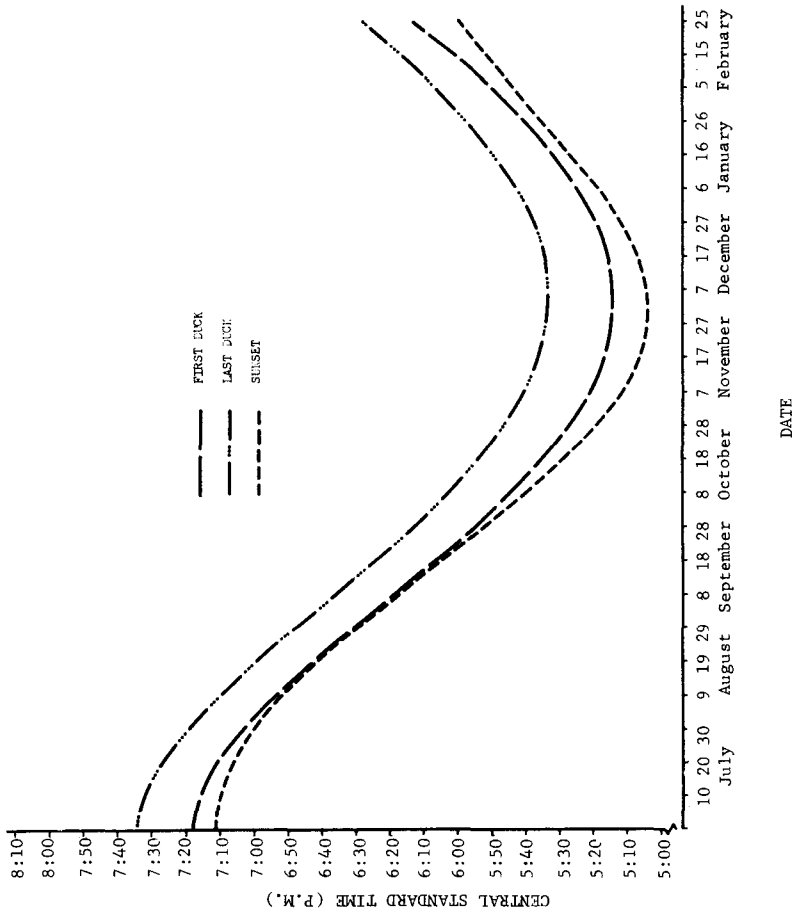


Figure 2. Regression of Time First and Last Duck Seen in Minutes Since 4:00 PM on Days Since July 1 for Year 2.

First Duck: $Y = 198.944 - .0223D^2 + .000149D^3 - .000000253D^4$, $R^2 = .65$

Last Duck: $Y = 198.388 + .484D - .0266D^2 + .000165D^3 - .00000027D^4$, $R^2 = .65$

Waterfowl season in progress between: November 7-29 and December 12-January 12.

Wood duck shooting at the observed roosts occurred primarily during the waterfowl season (Table 2) and did affect total roosting numbers (Table 4) and arrival time in relation to sunset. Wood ducks were observed coming to roost later during the waterfowl season (Figures 1 and 2) and a larger percentage of wood ducks arrived after sunset during waterfowl season than before or after the season (Table 3).

ENFORCEMENT IMPLICATIONS

Wildlife managers in Louisiana are faced with the fact that wood ducks are most popularly and easily harvested coming to roost. The majority of wood ducks roost after sunset and the majority of hunters continue shooting after sunset. The results of this study indicate that a hunter will have only 21 chances in 100 to shoot at a roosting wood duck legally, that is before sunset, on any randomly picked day during the waterfowl season at any randomly picked roost in Louisiana. His chances of legally harvesting a wood duck at the roost increase with an increase in cloud cover to a maximum of 33 in 100 on a cloudy day as opposed to 24 in 100 on a clear day. The presence and intensity of shooting at the roost site decreases the possibility of one's legally harvesting a wood duck for two reasons: (1) fewer ducks use roosts that are hunted and (2) the percentage of ducks coming to roost after sunset increases with shooting.

Other waterfowl management problems noticed at the roosts were high crippling loss and a low percentage of dead ducks retrieved. Roosting cover was thick, visibility poor due to darkness, and many hunters failed to retrieve both crippled and dead ducks.

Table 1. Probability (expressed in percent) of a wood duck being observed flying to roost after sunset during July-Sept. and Oct.-Jan.

	<u>July-Sept.</u> %	<u>Oct.-Jan.</u> %	<u>Difference</u> %
Year 1	58	78	20
Year 2	69	85	16
Over Years	60	80	20

Table 2. Percent of roost visits¹ during which wood duck shooting occurred with waterfowl season open and closed.

Year 1 Waterfowl Season		Year 2 Waterfowl Season	
Closed	Open	Closed	Open
2	25	2	22

¹One roost visit = one 50 minute counting period at one of forty-four roosts.

Total number of roost visits was 1,092.

Table 3. Probability (expressed in percent) of a wood duck being observed after sunset with waterfowl season open and closed.

	Waterfowl Season		
	Open %	Closed %	Difference %
Year 1	72	69	3
Year 2	89	81	8
Over Years	79	72	7

Table 4. Total ducks seen on all roosts by date.

Year 1 (1969-1970)		Year 2 (1970-1971)	
Date	No. Ducks Seen	Date	No. Ducks Seen
July 17	530	July 15	137
Aug. 7	1,336	Aug. 6	115
Aug. 21	959	Aug. 20	290
Sept. 4	950	Sept. 3	270
Sept. 18	1,788	Sept. 17	278
Oct. 2	2,775	Oct. 1	564
Oct. 16	2,486	Oct. 15	471
Nov. 6	2,129	Nov. 5	1,776
Nov. 20	400*	Nov. 19	454*
Dec. 4	509*	Dec. 3	479
Dec. 18	449*	Dec. 17	537*
Jan. 8	1,276	Jan. 7	196*
Jan. 22	1,504	Jan. 21	574
Feb. 5	1,633	Feb. 4	447
Feb. 19	2,460	Feb. 18	798

*Waterfowl season in progress.

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FORCING CANADA GEESE INTO ELEVATED NESTING STRUCTURES¹

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ABSTRACT

Canada goose nests were manually transferred from normal ground position into a metal tub. Nesting success for transferred geese was 68.5 percent. Three years average hatchability of disturbed eggs was 62.0 percent while that of undisturbed eggs was 67.5 percent.

INTRODUCTION

Artificial elevated nesting structures for Canada geese (*Branta Canadensis*) have long been recognized as an important technique in increasing production (Craighead and Stockstad 1961; Brakhage 1965; and Dill and Lee 1970). Conservation agencies in Missouri, (Brakhage 1965) and Ohio (Bednarik 1970) have been most successful in developing resident nesting flocks of geese. Their success has been directly related to the use of artificial elevated nesting structures. Gore and Barstow, 1969, reported on the establishment of a local nesting free-flying flock of Canada geese in middle Tennessee. Elevated nesting tubs were an integral part of the Tennessee project. This paper will describe a technique used to hasten the acceptance of elevated nesting structures by geese.

I wish to thank Calvin J. Barstow for providing supervision of the project and for reviewing this manuscript.

METHODS

A tub nesting program was started in conjunction with the middle Tennessee goose flock in 1967. Tubs were made from 55-gallon drums and were constructed and erected following the Ohio pattern (Bednarick 1970). The tubs were distributed in and around the five largest farm ponds on the private estate on which the goose flock started.

Eleven tubs were put up over water, while 29 tubs were placed over land. Of the 29 over-land tubs, only eight were elevated. Land tubs were placed near locations where geese had nested in previous years. It was hoped that the geese would originally accept some of the tubs for nesting sites. An alternate plan was to move the nest into a tub during the fourth week of incubation if the geese proceeded to nest on the ground. After a nest was moved into a tub, providing the goose accepted the move, the plan was to block up or elevate the tub by placing 4 x 4-inch timbers under the structure.

¹A contribution of Tennessee Pittman-Robertson Project W-9-D.

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