

with probably the greatest use occurring during the first half of the season as was the tendency for bluegrass. Cheat, however, being extremely abundant and one of the earliest plants to develop, became increasingly important as the season progressed because it reaches maturity in late May and early June, slightly in advance of bluegrass. Dense stands of broom-sedge were not utilized except at their edges, and the most desired site appeared to be where this plant was growing in isolated clumps. Likewise, the use of cheat, bluegrass and other grasses was restricted largely to those sites where the grass matured and became lodged. In virtually all cases, only the dead vegetation from the previous or the current year's growth was used in nest construction. The importance of the effects of burning, over-grazing, mowing or pasture renovation to utilization of cover by nesting quail is apparent.

During the course of the investigation, there has been a general increase in the removal of idle and permanent cover. This has resulted in 220 acres being taken out of this classification. In addition, 8½ miles of hedge have been removed, with the bulk of this occurring in 1956. A part of the loss of idle and permanent cover has been offset by the practice of fallowing, which has shown in several cases to provide rather ideal nesting cover. This is particularly true of corn fields which are left idle for a period of 1 to 2 years following the harvest. The extent to which the quail populations can withstand the loss of edge and permanent cover is not yet apparent. However, it is believed that a depressing effect of these practices must become evident in the relatively near future.

## THE FRANCIS MARION TURKEY PROJECT (A Progress Report)

By HERMAN L. HOLBROOK

*South Carolina Wildlife Resources Department*

In June, 1948 the United States Forest Service entered a cooperative agreement with the South Carolina Wildlife Resources Department for the Department to undertake a game management program on the newly created Francis Marion National Forest Wildlife Preserve. The Preserve, with its adjacent Cooperative Wildlife Management Area, contains 60,000 acres of diversified cover including dense bays, gum and cypress swamps, hardwood transitions, and pine uplands in South Carolina's famous lowcountry. The objectives of this new program were to increase the number of wild turkeys and deer in order to insure the perpetuation of the native strain of eastern wild turkeys, provide an overflow of game onto surrounding lands both public and private to improve hunting, produce game for restocking other suitable sections of the state, and fulfill a portion of the need for quality public hunting. This paper is an up-to-date report on the progress toward these objectives.

The preserve has been subdivided into two units for management purposes. The Waterhorn Tract contains 17,000 acres, has no private holdings or public roads, is entirely surrounded by a twenty-six (26) mile stock proof fence, and contains our very best wild turkey range. Since livestock can be excluded this has been the area of most intensive development. Management has consisted chiefly of clearing, planting, prescribed burning, and protection. Three hundred and fifty (350) acres of clearings have been created as one hundred seventy-nine (179) fields and two (2) rights-of-way. About two hundred twenty-five (225) acres of permanent and annual pasture, chufas, corn, and brown top millet are planted and maintained each year. The remaining acreage is left as unsown openings. Prescribed burning of all pine lands is accomplished on a three-year rotation. Domestic stock and animals destructive to plantings have been controlled. Nearly eight hundred (800) feral hogs have been removed since 1948. In addition, large numbers of raccoons have been live trapped and released in upstate counties where they are important game animals. This tract now has very high populations of both wild turkeys and deer. The competition between these species for native and cultivated foods has become severe. It is from this tract that they have been trapped for restocking.

The Wambaw Tract contains the remaining 43,000 acres. It has several private holdings and public roads and contains a diversified assortment of both very good and poor wild turkey range. Until a recently passed stock law was put into effect it was heavily used by both hogs and cattle. Few cattle now remain and these are in leased pastures. However, hogs are still plentiful and eliminate the use of some of the most valuable food crops. Management has also consisted of clearing, planting, prescribed burning, and protection. One hundred fifty-six (156) acres of clearings have been created as forty-seven (47) fields and three (3) rights-of-way. About seventy-five (75) acres of permanent and annual pasture are planted and maintained each year. The remaining acreage is left as unsown openings. The prescribed burning is done by the Forest Service in their timber management. This tract now supports good populations of deer, and turkeys are plentiful in some sections.

*Perpetuation:* The present high population of wild turkeys on the Wambaw Tract places us well past the stage necessary "to insure the perpetuation of the native wild turkey" which was one of the primary objectives. Just prior to the breeding season this past year, while the Project Leader was photographing and observing turkeys from a blind at a three (3) acre chufa planting, eighty-three (83) wild turkeys were seen using the field on one occasion.

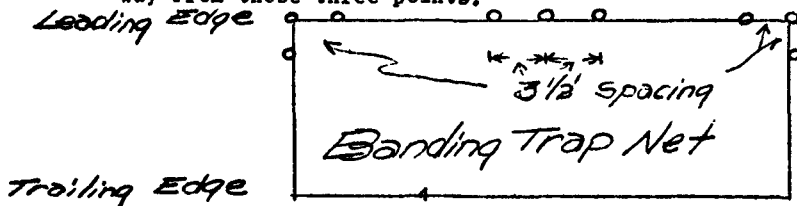
*Overflow:* The "overflow of game onto surrounding lands" is another very important function of the Preserve. Both of the counties bordering it have a deer season of four and one-half (4½) months in which the use of dogs is permitted. The turkey season in these counties is two (2) and three (3) months. Since about half of the sixty (60) mile boundary borders on open National Forest land, the hunting pressures are terrific. This coupled with bag limits of five (5) bucks and five (5) gobblers results in a heavy take.

*Live Trapping:* The aim of the live trapping work has been to restock deer and turkeys in all sections of South Carolina in which adequate food, cover, and protection are available. So far deer have been live trapped and released upon four Sumter National Forest Areas and one State Game Management Area. These deer were captured and moved with the standard box traps and equipment. We plan to change to the dart gun technique during the coming season. The deer release results are shown on Table I.

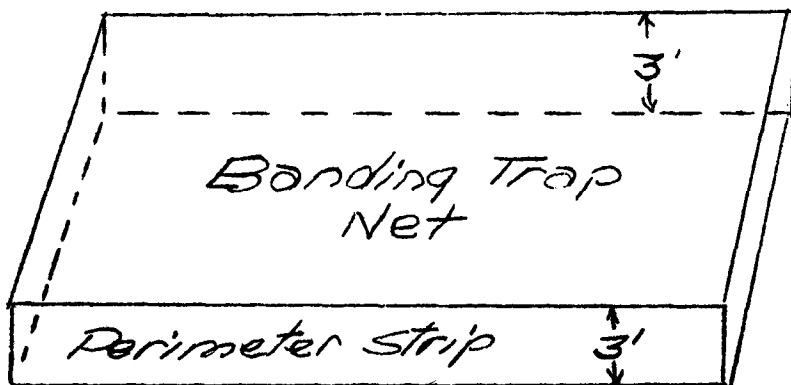
One hundred fifty (150) deer have been trapped and released. Three (3) of the releases must be regarded as successful. The outlook for the remaining two (2) is good, but they are not old enough for the results to be definite.

Live trapping of wild turkeys for restocking began in 1951. The first turkeys were taken with stationary, pen-type traps. A cannon-projected waterfowl net was then secured from the Fish and Wildlife Service. After several trials of net trapping with this trap, a new net embodying several changes adapting it for turkeys was acquired. One of the more significant changes, which was suggested by Herbert Dill, was the use of a perimeter strip of light netting gathered at intervals to form a series of bags to stop turkeys escaping from beneath the net after being captured. The specifications for our present net trap are as follows:

Banding trap net 50' x 30' - 1 3/4" bar mesh, #12 medium twine (treated with copper naphthate) rigged all around 3/8" rope with thimbles in two top corners and one midway between these corners, also thimbles to be spaced 3½' each way from these three points.



Web to hang 160' x 3' - 2" bar mesh,  
 #12 medium twine (also treated),  
 Attach this 160' strip to entire  
 perimeter of trap net.



For a propellant and primer we prefer black powder and a No. 6 electric blasting cap set off with a six-volt hot shot battery. Wire used is 2 conductor telephone wire with a series hookup. Slick finish magazine paper has made excellent wadding. Experimenting on wadding and loading was necessary until a satisfactory combination was found.

Release results are shown in Table II.

Two hundred and forty-one (241) turkeys have been trapped and released. Eight (8) major releases have been made. Four (4) must be regarded as successful, one (1) as a failure, and the remainder as uncertain.

Raccoons have been live trapped from the Waterhorn Tract to protect plantings of corn and chufas from depredations. Some trapping has also been done on other areas by non-federal aid personnel supervised by this project. The results have been as follows:

		RACCOON RELEASES	
<i>Project</i>	<i>Number</i>	<i>Counties</i>	
15-D-1	63	Greenwood and Vicinity	
15-D-2	256	Abbeville, Anderson, Cherokee, Laurens and Spartanburg	
15-D-3	261	Abbeville, Anderson, Cherokee, Greenville, Greenwood, Oconee, Pickens, Saluda, Spartanburg and Union	
15-D-4	127	Cherokee, Edgefield, Greenville, Oconee, Pickens and Spartanburg	
15-D-5	71	Greenville	
15-D-6	14	Greenville	
15-D-7	80	Cherokee, Greenville, Greenwood, Laurens and Spartanburg	
15-D-8	20	Oconee and Anderson	
<b>TOTAL</b>	<b>892</b>	Releases made in all counties in western third of the state	

The above figures do not include known mortality which has averaged 10%.

*Public Hunting:* In the face of substantial increases in the number of deer and turkeys and the severe competition between them for native and cultivated foods, a program of limited public hunting was initiated last season. The hunts included an archery hunt, a still hunt, and a series of one-day drive hunts. The archery and still hunts were held on the Waterhorn Tract prior to the turkey

season. The remaining drive hunts were held on the Wambaw Swamp Tract during the open season for gobblers.

FIRST PUBLIC HUNT RESULTS (1956)					
<i>Archery Hunt</i>	<i>Dates</i>	<i>Hunters</i>	<i>Man Days</i>	<i>Game Taken</i>	<i>Wounded</i>
A-1	Oct. 8 - 12	24	43½	2 bucks 1 hog	1 hog
<i>Still Hunt</i>	<i>Dates</i>	<i>Hunters</i>	<i>Man Days</i>	<i>Game Taken</i>	<i>Wounded</i>
B-1	Nov. 1 - 2	98	143	20 bucks *	2 bucks
<i>Drive Hunts</i>	<i>Dates</i>	<i>Hunters</i>	<i>Man Days</i>	<i>Game Taken</i>	<i>Wounded</i>
Drives made from horseback					
C-1	Nov. 28 - 30	135	135	1 buck	None
Drives made with dogs					
C-2	Dec. 10 - 12	120	120	3 bucks	1 buck
Drives made with dogs					
C-3	Dec. 19 - 21	83	83	4 bucks 1 gobbler	2 bucks

Small game was also taken on these hunts.

\* Two (2) recovered by trail dog on leash.

Plans for the 1957 version of the hunting program show considerable expansion over 1956. For archery hunters there will be a limit of two bucks instead of one. For the still hunters there will be an additional hunt. Hunt B-1 will include the entire 17,000-acre Wambaw Tract instead of the central 10,000 acres. Their hunt time has been extended from two days to four days and the number of hunters has been increased from 100 to 125. Hunt B-2 is the first real turkey hunt to be held. This is also a four-day hunt. The dog men will have six days to drive hunt instead of one day. Hunting effort should be approximately triple the 525 man days of 1956.

The procedure used for handling the hunts will remain essentially the same. They were advertised by newspapers, sportsmen's shows, and by distribution of the hunt summaries, a copy of which is included along with sample instructions, permits, and data cards in Tables III and IV. Applications were accepted and selected upon a lottery basis. When the application was processed, the hunter received his post card sized instructions and data card, map, and self-locking tags.

Designated sites are available for those desiring to camp. Included in these sites are wells, latrine facilities, and fire breaks prepared by the Forest Service. The immense popularity of the multi-day hunts has made this step necessary.

### SUMMARY

The Francis Marion Turkey Project has been in operation since June, 1948. It has assured the perpetuation of our native wild turkey, provides an annual overflow of game into surrounding areas to improve hunting, has provided both wild turkeys and deer for restocking, and now fulfills a portion of the need for quality public hunting.

Management has consisted of clearing, planting, prescribed burning, control of domestic stock, and protection. Five hundred and six (506) acres have been cleared and are maintained as openings. About three hundred (300) acres of crops are planted and maintained each year to supplement the native food supply. Prescribed burning of pine stands has been done on a three (3) year rotation to maintain an open understory.

One hundred fifty (150) deer and two hundred forty-one (241) turkeys have been live trapped and released for restocking other suitable areas.

South Carolina's first public hunting program was initiated last year with good results on archery and still hunts on the Waterhorn Tract and fair results on the drive hunts held on the Wambaw Tract. An expanded hunting program will be in effect in the 1957 season.

TABLE I  
DEER RELEASE RESULTS

<i>Name and County</i>	<i>Zone</i>	<i>Status</i>	<i>Quarterly Date</i>	<i>No.</i>	<i>Buck : Doe</i>	<i>Prerelase Occurrence</i>	<i>Present Trend</i>	<i>Evaluation</i>
Long Cane Edgefield McCormick	Piedmont	Sumter NF	Dec., 1951 Mar., 1952	14 14	2 12 7 7	Occasional	Increasing Rapidly	Highly Successful*
Clemson Pickens Oconee	Mountain	Clemson GMA	Mar., 1954	28	9 19	None	Increasing	Successful†
Stomp Sprs. Newberry Laurens	Piedmont	Sumter NF	Mar., 1955 Mar., 1956	50 4	17 33 4 0	None	Increasing	Successful
Parson's Mtn. Greenwood Abbeville McCormick	Piedmont	Sumter NF	Mar., 1956	54	21 33	Occasional	Increasing	Uncertain‡
Enoree Rv. Union Laurens	Piedmont	Sumter NF	Mar., 1957	27	12 15	None	Increasing	Uncertain

\* Population estimate of Biologist in charge, Paul Shrader, is 600. The first controlled hunt is being held this year.

† Drive census on 375 acres of this 10,000-acre area yielded ten deer.

‡ Difficult dog situation is being encountered on this area.

TABLE II  
TURKEY RELEASE RESULTS

<i>Name and County</i>	<i>Zone</i>	<i>Status</i>	<i>Quarterly Date</i>	<i>No.</i>	<i>Gobbler : Hen</i>	<i>Prerelapse Occurrence</i>	<i>Trends and Broods, '57</i>	<i>Evaluation</i>
Long Cane Edgefield McCormick	Piedmont	Sumter NF	Mar., 1951	2	2	0	Increasing 10 Broods	Successful
			Mar., 1952	11	2	9		
			Mar., 1953	3	2	1		
			Sept., 1953	22	7	15		
			Dec., 1953	4	4	0		
Mar., 1955	15	10	5					
			57	27	30			
Marlboro	Upper Coastal Plain	State Sanct.	Mar., 1951	2	2	0	Stationary	Uncertain
			Sept., 1951	5	0	5		
			7	2	5			
Bethera, Berkeley	Coastal Plain	Francis Marion NF	Mar., 1951	4	2	2	Stationary	Uncertain
			Mar., 1957	8	3	5		
				12	5	7		
Bull's Is. Charleston	Coastal Plain	Federal Refuge	Mar., 1952	1	1	0	Stationary	Uncertain
			Mar., 1954	4	4	0		
				5	5	0		
			6	1	5			
Clemson, Pickens	Mountain	State GMA	Sept., 1952	6	1	5	Increasing 7 Broods	Successful
			Dec., 1952	4	1	3		
			Mar., 1953	9	4	5		
			Mar., 1957	22	11	11		
			41	17	24			

TABLE II—Continued

		TURKEY RELEASE RESULTS								
Name and County	Zone	Status	Quarterly Date	No.	Gobbler : Hen	Prerelease Occurrence	Trends and Broods, '57	Evaluation		
Bear's Is. Colleton	Coastal Plain	State GMA	Mar., 1954	16	5 11	None	Disappeared	Failure		
Wambaw Swp. Charleston	Coastal Plain	Francis Marion NF	Mar., 1954	5	2 3	Common	Stationary	Uncertain		
Gen. Pickens Oconee	Mountain	Sumter NF	Mar., 1955	25	12 13	None	Increasing 5 Broods	Successful		
Beaufort	Coastal Plain	Private*	Mar., 1956 Mar., 1957	10 2	3 7 2 0	None	Increasing 3 Broods	Successful		
				12	5 7					
Stomp Sprs. Newberry Laurens	Piedmont	Sumter NF	Mar., 1957	33	15 18	None	Increasing 2 Broods	Uncertain		
Enoree Rv. Union Laurens	Piedmont	Sumter NF	Mar., 1957	28	11 17	None	Increasing	Uncertain		

\* Stocked at owner's expense.

TABLE III  
PUBLIC HUNT PROGRAM FOR FRANCIS MARION WILDLIFE PRESERVE  
SUMMARY OF HUNTS OFFERED

Location	Area (Ac.)	Designation	Hunters	Archery—No Dogs			Game
				Period	Fee	Dates (1957)	
Refuge Waterhorn	17,000	A-1	150	6 Days	\$5.00	Nov. 4-9	Two (2) bucks and all game in season. <i>No Turkeys.</i>
			<i>Still Hunts—Shotguns or Rifles—No Dogs</i>				
Refuge Waterhorn	17,000	B-1	125	4 Days	\$5.00	Nov. 13-16	Bucks (1), Fox, Coon and Wildcat. <i>No Turkeys or Small Game.</i>
			43,000	B-2	180	4 Days	\$5.00
Preserve (Wambaw Swamp)	43,000	C-1			<i>Drive Hunts—Shotguns Only—Hunters Provide Own Dogs</i>		
			180	6 Days	\$5.00	Dec. 16-21	Buck (1), Gobbler (1) and all other game in season.

1. Applications for hunt permits should be made to S. C. Wildlife Resources Dept., Hunt Applications, Box 360, Columbia, S. C.  
 2. Applications must be received by October 1, 1957.  
 3. Include your name, address and permit fee. (Remit by check or money order.)  
 4. State the first hunt preference and the acceptable alternates.  
 5. Groups of hunters may apply if total fee is included.  
 6. Apply for only one gun hunt. You may apply for the archery hunt as well.  
 7. You will be promptly notified of your hunt assignment.  
 8. A State hunting license is required.  
 9. Arrangements to transfer permits must be completed one week prior to the hunt.

A list of local residents willing to act as guides and assist with dogs has been prepared for the hunt designated as C-1. Anyone desiring this list contact H. L. HOLBROOK, *Project Leader*, McClellanville, S. C.

Archery applications must show "Archery" on outside of envelope.



TABLE IV  
SAMPLE POST CARD SIZE FORM FOR A-1 HUNT

A-1 Green  
B-1 & 2 Red  
C-1 Yellow

FRONT

INSTRUCTIONS

1. Two bucks with visible antlers and all game in season may be taken. Deer must be tagged around tendon on hind leg before moving.
2. The season is not open on turkeys.
3. Each hunter must have permit, tags, and license on his person while hunting. After the tags are used, the holder is not entitled to additional hunting.
4. Cross bows are prohibited.
5. Dogs on leash may be used to retrieve wounded game.
6. Consider the safety of yourself and others. Neither the Dept. nor the Forest Service assumes any responsibility in case of injury.
7. Permits are not transferable.
8. Camps may be established from 1/2 day before until 1/2 day after the hunt.
9. Be careful with fire.

2¢  
POSTAGE  
DUE

S. C. WILDLIFE RESOURCES DEPARTMENT  
Francis Marion Turkey Project  
McClellanville,  
South Carolina

BACK

Permit 57A1 No. (1 through 150) Nov. 4-9, 1957  
The S. C. Wildlife Resources Department and the U. S. Forest Service extend a sincere welcome to you and your friends.  
This permit enables you to hunt with bow and arrow, fish and camp in the designated area of the refuge of the Francis Marion National Forest for the period indicated. All state and federal regulations prevail.  
Please complete and return the attached card with comments when you have finished hunting.

HELP PREVENT FOREST FIRES  
AND  
CONSERVE YOUR NATURAL RESOURCES

DATA  
Permit 57A1 No. (1 through 150)

Total Days Hunted \_\_\_\_\_

Killed \_\_\_\_\_

Wounded \_\_\_\_\_

This card must be returned for permittee to be eligible for future hunts.

Similar forms are used for the remaining three hunts with variations in color as shown above.