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DEVELOPMENT AND MANAGEMENT OF THE BLYTHE FERRY GOOSE MANAGEMENT AREA, MEIGS COUNTY, TENNESSEE

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INTRODUCTION

Twenty years ago, Canada geese (*Branta canadensis*) were rarely observed in east Tennessee, and then, only as they were migrating to points farther south. The first known wintering geese were observed on Hiwassee Refuge, which was developed on land licensed to the Game and Fish Commission by the Tennessee Valley Authority after the impounding of Chickamauga Lake in 1940; twenty geese were known to have wintered on the refuge during this year (Wiebe et. al. 1950: 116). The wintering flock continued to grow until average populations of 6-8000 geese were attained 6 to 8 years ago. Since that time, the wintering flock has more or less become stabilized. The Tennessee Game and Fish Commission has spent considerable time and money, through Pittman Robertson federal-aid programs, to develop this refuge and related public hunting areas. However, until 1964, emphasis was placed primarily on refuge development.

As the goose flock on Hiwassee continued to grow, so did the interest in goose hunting. By 1964, nearly all private farm land surrounding Hiwassee Refuge had been leased for goose hunting. Although the Commission had developed areas for public hunting, these areas were restricted to TVA lands and waters and none had the geographic proximity to Hiwassee Refuge that favored the private leased areas.

Past records indicated annual goose harvests ranging from 2 to 8 percent of the censused wintering population on Hiwassee Refuge. The majority of the geese were killed by a few individuals hunting private leased areas. State developed public hunting areas provided poor goose hunting and low kill success. The Tennessee Game and Fish Commission recognized the need for initiating a system of managed hunting because of skewed kill distribution, low yearly harvest, and the growing discontent of a large segment of east Tennessee goose hunters, who felt their conservation dollar was not providing the returns gained by a minority hunting leased, private lands.

Blythe Ferry is a 525-acre tract located in southwestern Meigs County, Tennessee. The area lies adjacent to the Hiwassee River 0.2 mile from Hiwassee Island and separated from it by the Hiwassee River. The area is composed of 400 acres of rolling upland and 125 acres of lake-filled slough. Land capabilities were classified primarily as Class II, III, and IV. Major soil types were Sequatchie, Etowah, Cumberland, Wolftever, Emory, Hamblen, Colbert, Melvin and Taft.

Agricultural Development

Prior to its establishment as a managed shooting area, Blythe Ferry was part of the Hiwassee Refuge complex. Little attention was given to food production since ample food could be produced for the geese on Hiwassee Island and the majority of the land consisted of grown up fields or pine and hardwood stands. Agricultural development, timber sales and rebrushing operations were initiated during March, 1964, prior to anticipated Commission approval, in order to develop the area in time for the 1964-65 waterfowl hunting season.

Sixty-one acres of pines and hardwoods were cleared through timber sales arranged by the TVA. Strategically located pine stands (less than 5 acres in size) were left to provide car parking sites and natural screens between pits. State personnel and equipment cleared and rebrushed 159 acres of old fields, field borders, fence rows, lake shore, and harvested pine and hardwood areas.

Soil Conservation Service personnel conducted a soil capability survey and established contour strips averaging one chain in width. Contour strip cropping was desirable, not only as a soil conservation measure, but as a means to most equitably distribute food attraction throughout the area. A 3-year crop rotation of corn-buckwheat-winter wheat was initiated. The majority of the agricultural development on the management area in 1964-65 was through a sharecrop program.

Each year since 1964-65, the state has taken the responsibility of developing most of the acreage in order to permit more efficient planting and harvesting schedules to be followed. State development also permitted more food to be left on the management area for the geese. All crops on Hiwassee Refuge were developed by the state.

Crops and acreages developed on Blythe Ferry GMA and Hiwassee Refuge are listed in Table 1.

TABLE 1 — CROPS AND ACREAGES THAT WERE PLANTED AND LEFT ON HIWASSEE REFUGE AND BLYTHE FERRY GMA, 1964-65, 1965-66, AND 1966-67.

Area and Crops	1964-65		1965-66		1966-67	
	Planted	Left	Planted	Left	Planted	Left
Hiwassee Refuge						
Corn	40 A.	0 A.	70 A.	60 A.	60 A.	0 A.
Buckwheat	60 A.	60 A.	60 A.	60 A.	80 A.	80 A.
Winter Wheat	50 A.	50 A.	100 A.	100 A.	100 A.	100 A.
Rye Grass	20 A.	20 A.	0 A.	0 A.	50 A.	50 A.
Blythe Ferry GMA						
Corn	70 A.	0 A.	60 A.	0 A.	105 A.	20 A.
Sweet Corn	5 A.	5 A.	19 A.	19 A.	0 A.	0 A.
Buckwheat	59 A.	59 A.	54 A.	54 A.	30 A.	30 A.
Winter Wheat	152 A.	152 A.	167 A.	167 A.	230 A.	230 A.

Managed Hunt Development

Preparation for the managed hunts began in July, 1964, shortly after Commission approval. Parking areas, roads, pits, goose silhouettes, highway signs, and a checking station were constructed. The 10 pits were placed 300 to 650 yards apart throughout the area (approximately one pit per 52 acres); 20 silhouettes were placed at each pit. Signs were erected to designate access routes from major highways. The checking station provided quarters for area personnel in addition to providing a place to check hunters in and out of the area.

With suitable agricultural development and because of its location we believed the management area would receive heavy goose use and

provide good hunting. However, because of its small size it would be impossible to accommodate all hunters interested in hunting on the management area. Therefore, our objective was to manage the area to provide "quality" goose hunting. What constitutes quality hunting is a much debated issue among wildlife managers and sportsmen everywhere. Its definition, if definable per se, varies from region to region, state to state, and from one sportsman to another. Therefore, Blythe Ferry was developed and managed by incorporating the most desirable features which we had observed on managed waterfowl areas in our own and other states.

Two objectives, protection of the goose flock and providing hunters with an opportunity to hunt under optimum hunting conditions, were considered to be of paramount importance in the establishment of regulations governing hunting on Blythe Ferry. Hiwassee Island was utilized by the geese as their primary feeding area and the slough on Blythe Ferry (formerly part of the refuge) served as an important resting and loafing area. It was therefore necessary to establish regulations which would minimize the possibility of an excessively high kill or hunting pressure which might cause the geese to migrate from the area or discontinue use of Hiwassee Island.

Regulations such as alternate day hunting, half-day hunting, restricted hunting pressure (minimum of one hunter per 23 acres to maximum of one hunter per 14 acres), and a restricted shell limit per hunter would aid in this endeavor and encourage goose use on the management area throughout the hunting season. Hunting parties would have an opportunity to hunt under conditions, unlike those found on our public hunting areas, which would allow them to test their abilities in calling, setting decoys, shooting, etc., without interference from other hunting parties.

Rules governing hunting on Blythe Ferry were approved by the Commission as follows: (1) a minimum of two and a maximum of three hunters were allowed per pit; refills were allowed, (2) hunting was restricted to pits only except in pursuit of cripples, (3) hunting was restricted to Tuesdays, Thursdays, and Saturdays from legal shooting time until 12:00 noon, (4) hunters were restricted to eight shells for which shot size was to be no larger than number two, (5) no person under 18 years of age was allowed to hunt unless accompanied by an adult, and (6) the Game and Fish Commission reserved the right to alter hunting summarily.

Since the management area could only accommodate a maximum of 30 hunters per hunt date, it was necessary to provide a means by which sportsmen throughout the state could be guaranteed equal opportunity to participate. Thus a lottery system for determining reservations was adopted. Hunters, 18 years of age or older, were instructed to send written requests listing their names, addresses, two preferred and two alternate hunt dates to the Game and Fish Commission in Nashville. Requests were to be postmarked between September 15 and October 1. A public drawing was held within a week following the deadline date and applicants were notified of the results. Vacancies were filled on a first come-first served basis. Each hunter drawn received two reservations per season. There was no limit as to the number of times he could participate as a non-reservation applicant or as a member of a party with an advance reservation.

The checking station was opened approximately one and one-half hour before legal shooting time. One-half hour later vacancies caused by cancellations or "no-shows" (reservation holders who failed to show up for their assigned hunt), were filled at the checking station by non-reservation parties on a first come-first served basis. A drawing was then held to determine order of choice in selecting a pit. Non-reservation hunters, unsuccessful in obtaining a vacancy, could wait until a first-fill party completed their hunt, providing this occurred before 11:00 A.M.; refills were not permissible after this time. A short talk was then given to explain regulations and orient hunters to the location of pits and parking areas. Daily two dollar permits were sold and licenses were gathered, after which, the hunters were allowed to go to their pits.

DISCUSSION

Hunter Participation

The number of individuals hunting and man-days of hunting have steadily increased since the initiation of the management area (Table 2). The reduction in the number of reservations a hunter could have per season from two to one in 1965 provided an opportunity for more individuals to hunt on the management area. Reservations were reduced because of the unexpectedly large numbers of hunters who applied for reservations in 1964 and the expected increase for ensuing years since the area was quite popular with the hunters in 1964-65 and undoubtedly would become more so as additional hunters learned of the area. Also, the addition of two pits, one each in 1965 and 1966, increased the available numbers of reservations and man-days of hunting. The addition of a pit in 1966 was possible because of the purchase, by the Game and Fish Commission, of 87 acres which adjoined the management area on the south.

Goose Kill and Its Effect on the Hiwassee Refuge Population

Total goose kill and related statistics are presented in Table 2. The refuge goose population has not been observed to suffer any adverse effects since the establishment of Blythe Ferry GMA. Yearly goose harvest remained approximately the same as it was prior to the establishment of the management area. Hunting pressure has undoubtedly been reduced. Since the establishment of Blythe Ferry, hunting pressure and goose kill have been reduced on private areas to the extent that only one area was leased for the 1966-67 hunting season and the goose kill on private land did not exceed 100 birds. Most of the hunters who once hunted private land now participate on the managed hunt. Therefore, instead of having unrestricted hunting pressure in the vicinity of the refuge, hunting was controlled by hunter quotas, alternate, half-day shooting and shell limits, all of which contributed to reduced hunting pressure.

During 1964-65, 6,000 geese left the refuge at the end of the first week of the hunting season (November 13). Hunting pressure and related harassment were first thought to be responsible. However, since similar population losses in November were observed in past years and no known losses were observed in 1965-66 and 1966-67, hunting pressure was not considered to be the reason the geese left. It was possible that a shortage of food caused the geese to leave since all of the corn on the refuge and management area was harvested prior to November 1; observations revealed that little corn was available for the geese by November 13. Corn was available on the refuge and/or management area throughout the 1965-66 and 1966-67 hunting seasons and no known population losses were observed.

Goose kill ranged from 347 in 1966-67 to 204 in 1965-66 (Table 2). The low goose kill occurring in 1965-66 was believed due to weather conditions present during the hunting season and the amount of available corn on Hiwassee Island; an average goose population (based on 10 years census data) was present on the refuge. Extremely warm weather conditions plus approximately 60 acres of standing corn on Hiwassee Island greatly reduced goose movements off the refuge and the kill on Blythe Ferry and private and public hunting areas.

Percent Harvest of Population

The percent harvest of the mean Hiwassee Refuge population, present during the hunting season, has ranged from 9.7 in 1964-65 to 3.3 in 1965-66 (Table 2). The percent harvest in 1964-65 is misleading in that 35 percent (114) of the total kill (325) occurred prior to the departure of the 6,000 geese. The percent harvest, derived from the mean goose population present during the hunting season, suggests a higher harvest than actually occurred on the population.

Goose Kill per Man-Day Hours and Shells Fired Per Goose Killed and Crippling Loss

With the exception of the total goose kill, the most favorable kill statistics were obtained during the 1964-65 hunting season (Table 2).

TABLE 2 — HUNTER AND KILL DATA COLLECTED FROM THE MANAGED GOOSE HUNTS AT BLYTHE FERRY GMA, 1964-65, 1965-66, AND 1966-67.

	Hunting Season		
	1964-65	1965-66	1966-67
No. Pits	10	11	12
No. Individuals Hunting	421	575	673
No. Man-days Hunting	751	859	1,025
Total Goose Kill	325	204	347
Percent Harvest Mean			
Hiwassee Population	9.7	3.3	6.2
Goose Kill per Man-day	0.41	0.24	0.34
Hours per Goose Killed	8.9	16.4	13.4
Shells Fired per Goose Killed	5.0	6.4	6.6
Percent Crippling Loss	16.7	19.8	18.2

I believe the success obtained during this hunting season was because of the type of hunter who hunted on the management area. Prior to the establishment of Blythe Ferry GMA, the majority of the goose hunters in this area spent many hours on the mudflats of the Tennessee and Hiwassee rivers in an attempt to kill a goose. Most could not afford to lease the surrounding corn and green fields, and fields of this type in the vicinity of the refuge and not leased were non-existent. The majority of the applicants in 1964-65, and subsequently, the hunters on the management area were the "mudflat goose hunters." These people were experienced goose hunters. The success of the management area during the 1964-65 hunting season created an interest in many hunters who had given up in attempting to kill a goose because of the difficulty of doing so and in hunters who had always wanted to kill a goose but had never had the opportunity to do so. This was shown by the large increase in the number of applications received in 1965 (750) and 1966 (882) as compared to 1964 (350). The reduction in the number of advanced reservations from two in 1964 to one in 1965 as well as the increased number of pits, made it possible for a greater number of these types of hunters to be drawn for the hunts. It appeared from observations made of the hunters at the managed hunts in 1965-66 and 1966-67, that a significant number of the inexperienced hunters were drawn for the hunts, and may explain, at least in part, the poorer kill statistics for 1965-66 and 1966-67. The difference in kill statistics attained in 1965-66 as compared to 1966-67, with the exception of the shells fired per goose killed, was attributed to the lack of goose movement off the refuge which provided hunters little opportunity to kill geese. There was no apparent reason for the increase in shells fired per goose killed in 1966-67 as compared to 1965-66.

Crippling loss records were based on hunter response. A crippled bird was one which, to the hunters' estimation, was hit by shot but unretrieved. It could have dropped dead, sailed to the refuge, or in some manner, such as loss of feathers, given indication of being hit. Crippling loss was highest in 1965-66 (19.8). Goose movement into the management area during 1965-66 was reduced to the level that hunters shot at almost any goose that came into the area, regardless of the range or eight shell limit; a resulting high crippling loss occurred.

Development and Managed Hunt Changes

Few problems have been encountered in the development work and managed hunts. Rebrushing operations have been continued in an attempt

to make the area more appealing to the geese. An additional 31 and 25 acres were rebrushed in 1965 and 1966, respectively. Observations have shown that pits with the highest kill success records were those that had the least amount of obstructions (pine stands, fence rows, brush-piles, etc.) in their vicinity.

Crop acreages (particularly corn) were increased on Blythe Ferry and Hiwassee Island during 1965 and 1966; this was enhanced by the purchase of 87 acres, which adjoined the management area on the south, by the Game and Fish Commission in March, 1966. Additional crop acreages were considered necessary to avoid population losses, such as occurred in 1964-65, and to sustain goose use on the management area throughout the hunting season. Most of the crop development has been assumed by the state, rather than through sharecroppers, to allow more timely crop manipulations.

Few changes were made in the operation of the managed hunt. Vacancies caused by cancellations or no shows, were filled on a first come-first served basis in 1964-65. This resulted in hunters spending the night in their vehicles in the parking lot to be first on the register and on several occasions there were disagreements among the hunters as to who should be first on the list. Party splitting, to allow a better chance for selecting a high choice pit, also occurred. This problem was eliminated by making non-reservation parties sign the register as a party and a drawing was held from these parties to fill the vacancies. Daily permit fee was increased from two dollars to three. To conform to statewide wildlife management regulations, the minimum age limit of applicants and hunters on the area unaccompanied by an adult was dropped from 18 to 16 years of age. Following the 1965-66 hunting season, applicants were required to send their hunting license number along with their names, addresses, and selected hunt dates; several industrious people sent in numerous applications for the 1965-66 drawing with fictitious addresses, disguised names, or listed a friend's name but used their post office box for an address.

CONCLUSION

The establishment of the Blythe Ferry Goose Management Area has been well received by hunters. The development and management of the area has accomplished the two primary objectives, protection of the goose flock and providing hunters an opportunity to hunt under optimum conditions. No adverse effect has been observed on the goose population on Hiwassee Refuge. Yearly harvest remains about the same as it was before the management area was established. The majority of the goose kill is now being taken by the general public rather than the few individuals who hunt private leased land.

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