

EVALUATION OF UTILIZATION, HARVEST AND HUNTING PRESSURE ON PRIVATELY OWNED HUNTING AREAS

By JIMMIE MCDANIEL, *Biologist*

Florida Game and Fresh Water Fish Commission
Tallahassee, Florida

INTRODUCTION

In northwest Florida there are numerous large bodies of water which are good waterfowl areas and are open for public hunting. There are four such lakes in Leon County: Lake Jackson, 3,520 acres; Lake Iamonia, 5,344 acres; Lake Miccosukee, 7,000 acres; and Lake Talquin, 6,700 acres (Figure 9).

Waterfowl studies were conducted in Leon County on plantations having flooded fields to determine the management practices, operational cost, hunter success, and to determine what management techniques for ducks yield the greatest utilization and kill of waterfowl.

Waterfowl hunting in Leon County during 1962-63 was restricted to three days a week: Wednesday, Saturday and Sunday. The bag limit for ducks during the 1962-63 season was three. It was felt the hunters would have better success on public waters if this staggered day shooting was in effect. The pressure from everyday shooting would tend to drive ducks off the public lakes onto the less intensively hunted private lakes and flooded cornfields that were near public hunt areas.

In each of the areas studied there were outlays such as the construction and installation of dams, dikes, well and pumps that could not be figured in as yearly expenses and were labeled as initial costs.

The waterfowl survey was conducted on private and public areas for comparison of the flooded areas with natural ponds. The survey was broken down into waterfowl days, duck days, waterfowl days per acre, and duck days per acre for better comparison. A waterfowl day or a duck day could be explained as one waterfowl or one duck for one day. Ten waterfowl days could be either ten waterfowl for one day or one waterfowl for ten days. A waterfowl day is, therefore, an expression of the length of time that a given population remains upon an area. Waterfowl days per acre or ducks per acre is then arrived at by dividing the waterfowl days by the transect acreage. Thus, for Lake Iamonia as shown in Table 1, there were 133.7 waterfowl days per acre in 1962-63. This can indicate one of or a combination of two things: (1) 133.7 days on one acre, or (2) one waterfowl for 133.7 days on one acre. This technique was developed by Ed Chamberlain and Bill Jennings, formerly of the Florida Game and Fresh Water Fish Commission, and the study they made is found in the Quarterly Progress Report, W-19-R, 1 January 1956. Table 1 shows the waterfowl population density for 1962-63 and Table 2 shows the actual number of waterfowl observed on the area.

Numerous plantations are located in the vicinity of Tallahassee where quail, dove, turkey, waterfowl and deer hunting are excellent. Most of the plantation owners reside there only during the hunting season. The plantation hires numerous employees who maintain the plantation the year round such as superintendent, dog trainer, game wardens, and laborers.

HORSESHOE PLANTATION

Horseshoe Plantation (12,000 acres) is located north of Tallahassee and is maintained primarily for private hunting. Game management techniques include controlled burning, food plots, dove fields and flooded fields. The main game that is hunted is quail, although other game species include doves, turkey, ducks and deer. On this plantation only one pond is managed for waterfowl. It is located three miles from Lake Iamonia.

Development and Management

A forty-acre holding pond was constructed using a ten-inch well to maintain the water level during dry weather. During wet weather the water level was maintained by drainage from the 1,000-acre watershed.

Figure 1 shows the holding pond. The flooded field consisted of 30 acres and of that 25 acres were planted in corn and three acres in chufa. The field was flooded in October 1962 and drained January 7, 1963.

The flooded area had permanent island-type blinds consisting of mounds of dirt pushed up by the bulldozer during the construction of the pond. These islands can be seen in the background in Figure 2. This type of blind is desirable because there is little upkeep and there is much more room for the hunter.



Figure 1. — Holding Pond at Horseshoe Plantation.



Figure 2. — The Planted Duck Field Prior to Flooding.



Figure 3. — Horseshoe Plantation Duck Pond After Flooding.

Cost of Operation

The construction of the waterfowl management program began in March of 1956 and was completed in July. The construction of dam, dike, pump and well was \$24,388.26. The electricity used for operation of the pump depends on the amount of rainfall during the year. The average cost per year is \$735.00. The total cost of electricity during 1962-63 was \$2,259.70.

The total estimate for planting and fertilizing the flooded area was \$455.00. Labor for operating the hunts was \$80.00. The total cost during the 1962-63 hunting season amounted to \$2,794.70.

Hunter Success

The flooded area on Horseshoe Plantation was hunted four times during the 1962-63 season with a total kill of 90 ducks at \$30.14 per duck.

Tables 1 and 2 show the waterfowl population density taken on this area during 1962-63.

BULL RUN PLANTATION

Bull Run Plantation (3,000 acres) is located north of Tallahassee and was once used primarily as a hunting plantation. It has now been turned into a timber and cattle operation. The open woods that were once good quail habitats are now grown up and the fields are planted in pasture for cattle.

Development and Management

The only game management program that is still being conducted is waterfowl management. There are three holding ponds of 80 acres, 60 acres and 40 acres in size. The water level of these ponds is maintained by drainage from a 2,000-acre watershed; therefore, no pump was needed. The flooded area was 20 acres in size, of which 15 acres were planted in corn. The flooded area is located $\frac{1}{2}$ mile from Lake Lamonia and was drained immediately after the waterfowl season.

Cost of Operation

The estimated initial outlay of construction of dam, dike and holding ponds in 1955 was \$30,000.00.

The total cost of planting and fertilizing the flooded area in 1962-63 amounted to \$234.00, or \$15.60 per acre.

Hunter Success

The flooded field was shot four times during the 1962-63 season with a total of 99 ducks killed. An average of 2.4 ducks were killed per hunter at a cost of \$2.36 per duck. The waterfowl population during 1962-63 is shown in Tables 1 and 2.

FOSHALEE PLANTATION

Foshalee Plantation (13,000 acres) is located 14 miles north of Tallahassee and is managed primarily for private hunting. An intensive game management program is carried out on this area with food plots being planted for quail and turkey, as well as dove fields being planted each year. Controlled burning is conducted each year, and quail feeders are in operation during certain parts of the year. This plantation has one of the best quail populations in Florida.

Two ponds located on this plantation are managed for waterfowl. The ponds are approximately 10 miles apart. On these two ponds, each shoot was recorded as to the number of waterfowl killed, number of shoots, etc.

Development and Management (Carnes Pond)

Carnes Pond is a landlocked pond located four miles from Lake Iamonia and is 40 acres in size. Drainage is by a 253 foot, 8-inch well.

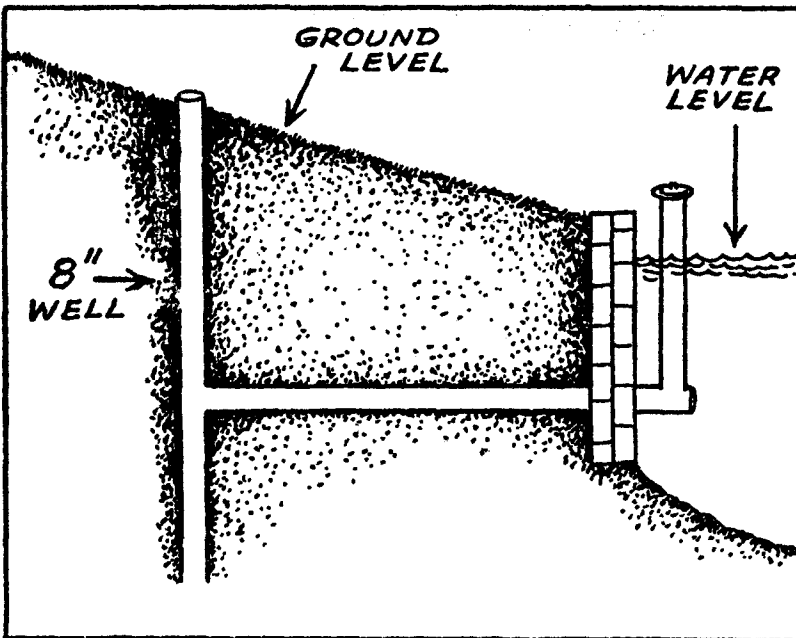


Figure 4. — Carnes Pond Drainage Well.

Figure 4 shows how this is accomplished. Figure 5 shows the water control structure. The water is pumped from a 197 foot, 8-inch well to fill the pond. Twenty of the 40 acres were planted in corn, and the field was flooded in October 1962 and drained in March 1963. The area was kept flooded after hunting season so that the ducks could consume as much corn as possible before migration. Figure 6 shows the flooded cornfield.

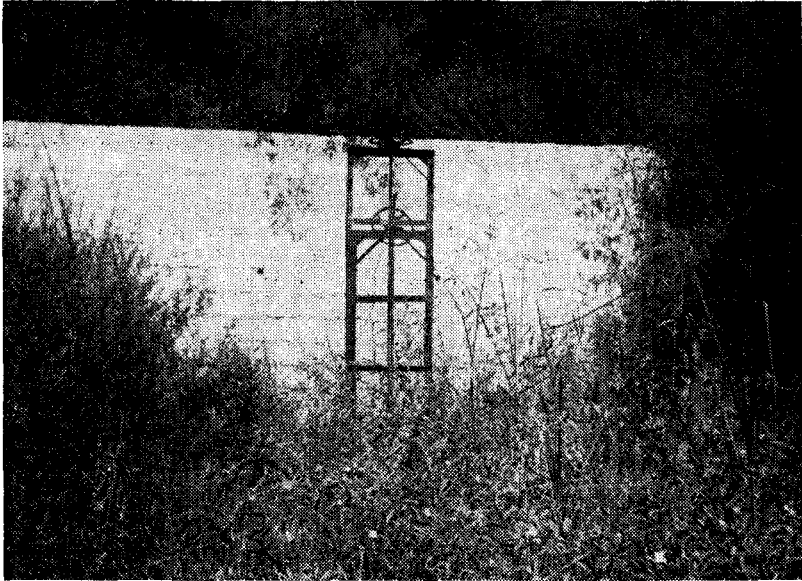


Figure 5.—Carnes Pond Water Control Structure.



Figure 6.—Flooded Corn in Carnes Pond.

Cost of Operation (Carnes Pond)

The initial outlay of the construction and installation of the wells and pump amounted to \$4,495.88. The expense of operating the flooded field during the 1962-63 season included the \$400.00 electric bill, \$865.00 for planting, \$220.00 for labor for operating the pumps, totaling \$1,085.00.

Hunter Success (Carnes Pond)

Carnes Pond was hunted six times during the 1962-63 season with a total of 70 ducks and 101 coots killed (Table 3). The estimated number of shots made during the hunts was 595 or an average of 3.4 shots per duck and coot. The cost of harvest per duck was \$15.00 and the total per coot was \$10.74. The shotgun shells were not included but were estimated at \$83.30. The waterfowl populations are shown in Tables 1 and 2.

Development and Management (Chemonia Pond)

Chemonia Pond is located ten miles east of Carnes Pond and four miles west of Lake Miccosukee. Chemonia Pond consists of 65 acres of which 40 acres were planted in corn. The water is pumped from a 190-foot, 8-inch well into an 18-acre holding pond with a 150-acre watershed (Figure 7).



Figure 7. — Pump Used to Fill Chemonia Holding Pond.

Cost of Operation (Chemonia Pond)

The initial outlay of construction and installation was as follows: \$5,000.00 estimated cost of dike, dam, water control structures and ditches; \$2,488.66 for installation of well and pump; total cost, \$7,488.66.

Operating expenses during 1962-63 season included a \$260.00 electric bill; \$930.00 estimated planting cost; \$220.00 for labor for operation of hunts; total \$1,310.00.

Hunter Success (Chemonia Pond)

Chemonia Pond was hunted six times during the 1962-63 season with a total of 70 ducks and 120 coots killed (Table 4).

The cost of harvest per duck was \$18.71 and \$10.92 per coot. The total number of shots fired was estimated at 584 which averaged 3.0 shots per coot and duck at \$0.14 per shot; therefore, \$81.76 was spent by the hunters for shells above the cost of operation of the flooded fields.

VELDA FARMS

Velda Farms (11,000 acres) is located eight miles north of Tallahassee and operates as a dairy farm. The land was acquired

from two plantations that formerly operated as hunting plantations which offered quail, turkey, duck and deer hunting. Numerous fields are planted on the farm in corn which offers good dove hunting. The hunting rights are leased on this area.

Development and Management

One 45-acre flooded field was located on the area with 35 acres planted in corn and browntop millet planted around the edge. The well that furnishes the water was originally installed for irrigation. The area is located eight miles from Lake Jackson and Lake Iamonia.

The one well fills and drains the field. Figure 8 shows how this is accomplished. The dike is built to furnish a road to service the pump. When pumping water in the field, the lower outlet is closed so that the water can flow out the top outlet. The field is drained by

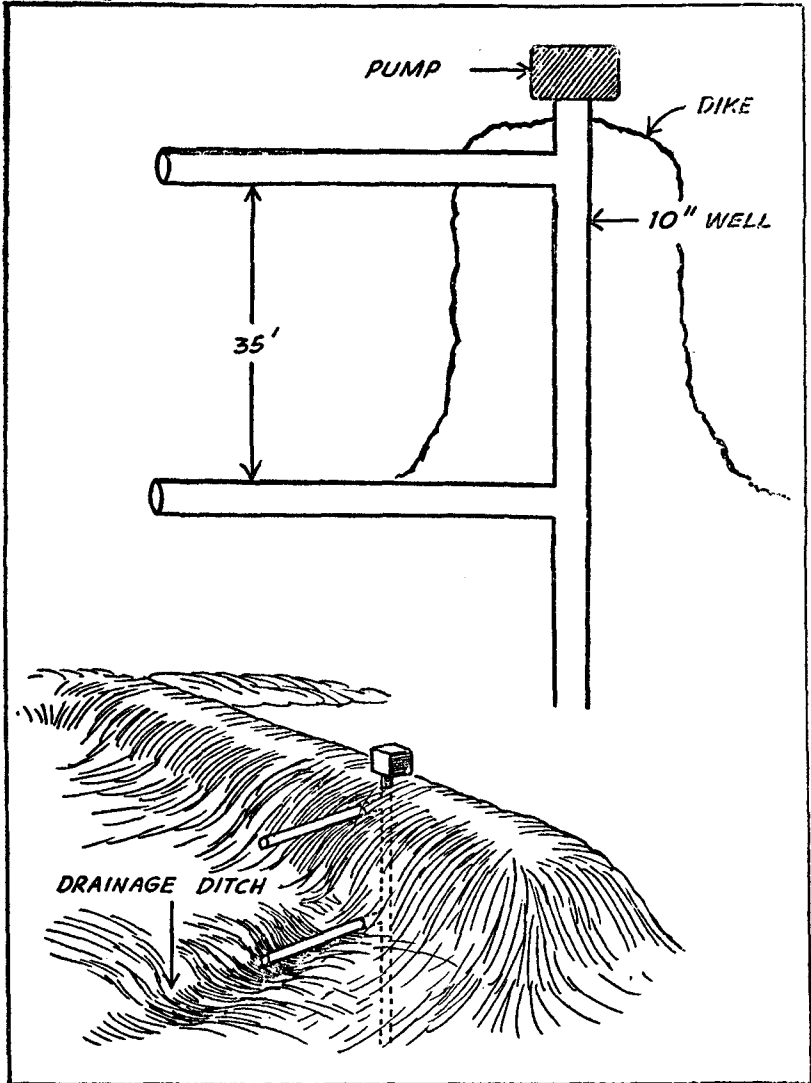


Figure 8.

opening the lower outlet. The pump has to be pulled out to drain the field if there is considerable rainfall during the drainage period. This operation will add an estimated \$175.00.

Cost of Operation

The cost of planting the corn was \$37.00 per acre with half the corn being harvested, thus paying for the cost of planting.

The initial outlay of building the dam and dikes was \$4,500.00, of which \$1,600.00 was paid by the Agricultural Stabilization Program. The 200-foot, 8-inch well and pump was \$3,200.00. The total was \$7,800.00 minus the \$1,600.00 the ACP paid, leaving a final total cost to the owner of \$6,200.00.

Operating expenses for the flooded field during the 1962-63 season included a \$900.00 electric bill, \$150.00 labor for constructing the blinds, and \$280.00 labor for operating the hunts. Total cost of operation was \$1,330.00.

There are 14 two-man blinds located in the field, and 10 were sold for \$300.00 each. This \$3,000.00 was deducted from the total operation, leaving a balance of \$1,670.00, which can be applied to the initial cost of the dam, dike and well and pump construction. Using these figures, therefore, the initial cost could be paid for in four years.

Hunter Success

The two surveys conducted during the hunts showed that 2.7 ducks and 4 coots were killed per hunter. There were 14 shoots during the 1962-63 hunting season with a total of 420 hunters at the shoots. Using the average number of ducks and coots killed per hunter, there was an estimated total of 1,134 ducks and 1,680 coots killed. The hunters that leased the blinds paid \$4.05 per duck and \$2.67 per coot.

SUMMARY

The most economical operation, which includes cost of construction and maintenance of a flooded field for waterfowl, would be a landlocked pond, pumped and drained by the same well.

The cost per duck and coot varied with the type of water control structure used for flooding the fields. The greatest number of ducks killed were ringnecks and wood ducks. Other species killed were blue wing teal, green-wing teal, shoveller, mallard, pintail, hooded merganser and coots. Ringnecks and coots made up the majority of the bag limits.

Planting of corn is recommended with interspersed chufas and fringes planted in browntop millet or Japanese millet.

Construction of permanent island-type blinds is recommended. This type of blind is desirable because there is little upkeep and much more room for the hunter.

Size of the planted area should be 20 acres or larger to maintain a good waterfowl population. Staggered day shooting is recommended not to exceed two days a week. Flooded areas should be left undrained as long as feasible so that ducks gain as much benefit as possible before migration.

Table 1. — Waterfowl Survey Showing Carrying Capacities (1962-63).

	Waterfowl Days	Coot Days	Duck Days	Waterfowl Days Per Acre	Coot Days Per Acre	Duck Days Per Acre
Horseshoe Plantation	288,316	10,763	273,188	4118.8	153.7	3902.6
Bullrun Plantation	72,000	5,400	66,600	3600.0	270.0	3330.0
Foshalee Plantation						
Carnes Pond	118,883	18,425	111,658	2972.1	460.6	2791.5
Lake Iamonia	175,824	15,300	160,524	133.7	6.0	62.4
Lake Micco.	25,683	2,865	22,782	3.7	.4	3.3
Lake Talquin	281,933	222,615	10,062	42.1	33.2	1.5
Lake Jackson	118,404	11,553	106,817	33.6	3.3	30.3

Table 2.—Waterfowl Survey Showing Actual Numbers of Waterfowl on Areas (Estimated) 1962-63.

	November		December		January	
	Ducks	Coots	Ducks	Coots	Ducks	Coots
Horseshoe Plantation	400	100	7,500	175	425	150
Bullrun Plantation	5,300	100	2,100	500	—	—
Foshalee Plantation						
Carnes Pond	400	75	2,600	600	382	50
Lake Talquin	200	600	—	4,670	325	2,200
Lake Jackson	873	50	2,640	175	309	200
Lake Iamonia	612	200	7,225	1,500	12,000	400
Lake Micco.	250	50	65	70	720	—

Table 3. — Waterfowl Hunters Bag Check.
Carnes Pond

Date	No. of Hunters	Hours Hunted	No. Bagged Ducks	No. Bagged Coots	No. Ducks Lost	G. W. Teal	Shoveller	Wood Duck	Ringneck	Shots
11/22	4	4	11	9	6	2	—	—	9	80
12/1	5	10	8	30	—	3	—	—	5	75
12/12	2	3	6	—	4	—	1	3	2	65
12/25	2	2	5	8	2	—	—	—	3	40
12/29	7	10	19	27	8	—	—	4	15	155
12/30	7	14	21	27	10	—	—	3	13	180
Totals	27	43	70	101	30	5	1	12	52	595

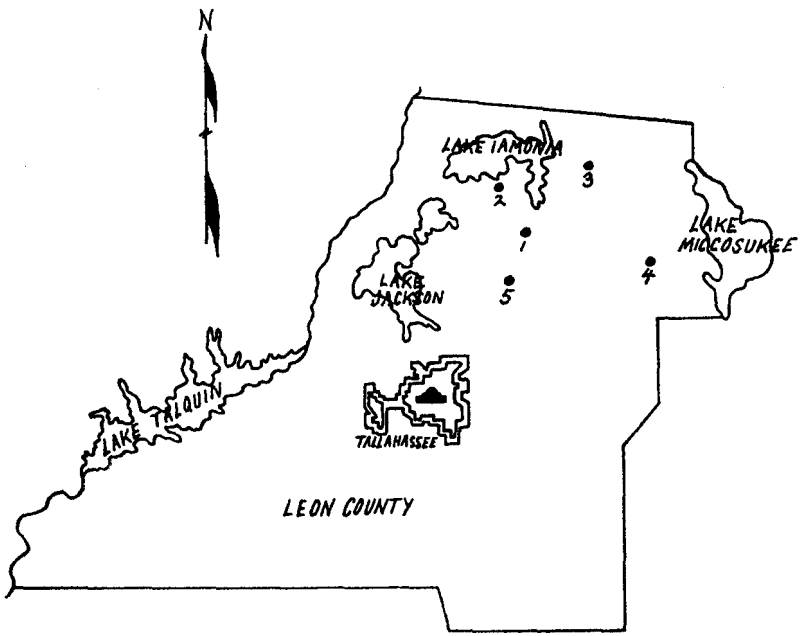
2.6 ducks/hunter 3.7 coots/hunter 3 shots/duck & coot

Table 4. — Waterfowl Hunters Bag Check.
Chemonia Pond

Date	No. of Hunters	Hours Hunted	No. Bagged Ducks	No. Bagged Coots	No. Ducks Lost	G. W. Teal	Shoveller	Pintail	Wood Duck	Ringneck	Shots
11/25	4	8	11	14	3	—	—	—	—	11	50
11/28	3	6	5	14	1	1	—	—	—	4	64
12/1	2	6	3	16	2	1	—	—	—	2	60
12/2	6	12	18	22	—	1	1	—	2	14	120
12/15	5	8	15	25	11	—	1	2	5	7	145
12/22	6	9	18	29	7	—	—	—	3	15	145
Totals	27	49	70	120	24	3	2	2	10	53	584

2.6 ducks/hunter 4.4 coots/hunter 3.4 shots/duck & coot

LOCATION OF PUBLIC HUNTING LAKES AND FLOODED CORN FIELDS



● FLOODED CORN FIELDS

Figure 9.