

4. What Facilities Should be Provided?

The answer is none, unless they can serve dual or multiple purposes.

All-weather access, parking lots, stream crossings, hedgerow plantings, toilets and drinking water are examples of multi-purpose facilities.

Stables for horses and kennels for dogs are single purpose improvements and should be provided by the user. One notable exception is the farm building, acquired with the land and surplus to all other game management needs. In three instances, we have made such structures available to clubs for modification, maintenance and use in accordance with our specifications and standards.

Bobwhite quail and any other game used in field trials should be furnished by the user and, once released, all such game becomes the property of the State.

5. Management of the Area

There is no place in our overall management program, nor is there any demonstrated need, for the single-purpose area. Field trial grounds are no exception.

Heretofore, it has been a rather widespread belief that field trials and hunting are incompatible and few things could be farther from the truth. In the first place, the majority of trials are run prior to and immediately following the general hunting season. One-course trials depend entirely upon released birds and hunting of wild game on the same area cannot possibly have any effect upon their success or failure. There might be contiguous-course trials run exclusively on native birds but, these are rare. Even on areas supporting maximum quail populations, you will find clubs supplementing with pen-reared stock in order to equalize various courses. Such trials, when run prior to the fall opening of the hunting season, can enjoy maximum native quail populations. These numbers will be lower the next spring regardless of whether or not the area is hunted and the release of pen-reared birds at this time is necessary to assure a successful event.

With the advent of the "Planning, Programming, Budgeting System" all of us have become acutely aware of the fact that we must explore every method of utilizing wisely, and to the fullest degree, every acre of land and water for which we are responsible. Hunting dog field trial areas are but one means of achieving the goal. They can be provided at minimum cost and without interference with normal hunting activities. In fact, developing a hunting dog field trial area involves so little additional effort and expense that such an area might be considered a bonus or fringe benefit to be derived from acquisition and management of almost any public hunting area. All that is really needed is the vision and imagination to see the potential that exists and to exploit it in drawing up your multi-purpose land management plan.

THE QUANTICO STORY

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INTRODUCTION

Quantico Marine Corps Schools is not only a very busy training base but an outstanding hunting and fishing area. It has a wider variety of game and fish available to the sportsman than any other military base in Virginia. With the exception of black bear, all big game and farm game species may be hunted. Game available include deer, turkey, quail, rabbits, squirrels, ruffed grouse, mourning doves, ducks and geese.

This paper deals with the results of five years of data collected, costs of game management and a breakdown of costs per hunter day on Quantico Marine Corps Schools.

HISTORY AND DESCRIPTION OF BASE

Quantico Marine Base was established in 1917 and four years later Marine Corps Schools were founded. From the initial acquisition of 5,299 acres obtained by proclamation in 1918 the base grew to about 62,000 acres in 1941. Approximately 54,000 acres known as "Guadalcanal Area" are available for hunting. Approximately 750 acres of water in streams and impoundments are utilized for fishing and duck hunting and include about six and one-half miles of streams. There are about 7,500 acres of cleared land most of which has been cleared for training purposes.

Marine Corps Schools is located about 35 miles south of Washington, D. C. in Prince William, Stafford and Fauquier counties and consists of mostly rolling wooded land interspersed with grown-up fields which at one time made up over 100 farm and home sites. What was open farm land in 1941 has since become solid stands of Virginia pine or mixed hardwoods of pole and pulpwood size. It borders on the Potomac River with elevations from sea level to heights of 475 feet.

It is hard to say when the first game management efforts were begun. Early efforts at game management were limited to developing and planting small game patches scattered throughout the base. Numerous bicolor plantings long forgotten in grown-up fields bear evidence of these early management efforts.

Through the authority of public laws 85-337 and 86-797 approved in February 1958 and September 1960, a "Cooperative Management Plan for the Conservation and Development of Fish and Wildlife Resources at Marine Corps Schools" was formulated and approved by the Marine Corps, the Department of the Interior and the Commonwealth of Virginia 26 February 1963. Under this plan the Bureau of Sports Fisheries and Wildlife, Department of the Interior, furnishes technical assistance and professional advice on fish management while the Commission of Game and Inland Fisheries of the Commonwealth of Virginia furnishes technical assistance and professional advice and furnishes some planting materials for game management work. Following the forming of the Cooperative Plan the Marine Corps Schools Game Management program became more formalized and long range plans were implemented. In 1965 the Marine Corps Schools Conservation Committee was established to insure closer cooperation between all land use activities to promote maximum multipurpose utilization. The training mission requirements of the base may frequently override any conservation planning. The conservation committee has been able to coordinate conservation efforts with training requirements to the advantage of all concerned.

HUNTING REGULATIONS

Hunting seasons have generally conformed with the State regulations for the counties of location. One notable exception has been the deer bag limit which has been manipulated to control the size of the herd. All hunters are required to take a hunting safety course and obtain either a rod and gun club card or a hunter safety card before being permitted to hunt. Civilians may hunt as guests of Quantico stationed personnel or by written permission obtained through the Commandant, Marine Corps Schools, Assistant Chief of Staff, G-4.

COLLECTION OF DATA

A check in-check out system for hunters and fishermen makes possible control of the numbers of sportsmen utilizing the area. To promote safety in hunting the base is divided into hunting areas with well-defined boundaries of roads, fire trails or streams. All areas are limited to a given number of hunters per day. Hunters are assigned to an area and must hunt in that area only. Due to the training mission of the Schools all or parts of the base may be closed to hunting on a given day. A maximum of about 700 hunters could hunt at one time if all areas were open. However, this seldom happens for training is being conducted at all times.

For the period of this report, 1962-67, a record of hunter days, hours hunted and game killed was compiled.

COSTS OF GAME MANAGEMENT

The costs used in this report includes Game Commission (PR) budgeted, military budgeted and unbudgeted, and MCS Rod and Gun Club funds. Table 1 tabulates these costs for the period of the report by fiscal year. These are the costs used to determine total costs although there are other costs that cannot be determined. Timber harvest, grounds maintenance and range fire control benefit wildlife management but are not included. It is believed that much of the game management practices contribute to these departments and thus balance out each other. Also cost of work done free of charge such as Boy Scouts is not considered. The one large cost is personnel salaries. This has increased each year and with the hiring of a full-time game manager in 1966 nearly doubled.

GAME MANAGEMENT PRACTICES

One prime concern in improving game habitat was the need to retard growth of undesirable species and reopen many of the grown-up areas. Controlled burning was utilized where practical. In addition it was used as a preventive measure against wild fires set by live firing exercises, thereby serving a two-fold purpose. Instead of small game food patches, long rambling strips of feed are planted. Dove fields of various foods were planted in a continuing dove field experiment. Brush areas unsuited to burning were cleared by use of a rolling chopper or bush and bog disc.

In 1966 game management practices under the direction of the Marine Corps Schools Game Warden were aimed at influencing or improving the habitat on about 10% of the land area. Through use of extensive plowing, planting, controlled burning, mowing and timber cutting this goal was accomplished. Stream and impoundment improvements increased the fishing potential while manipulation of water level and planting of beaver ponds helped duck hunting.

Previous to the 1963 implementation of the Cooperative Agreement and development of a long-range management plan most game management consisted of planting annual food patches and a field of corn which was used for emergency feed for squirrels and turkeys. Table 2 tabulates the various management practices used during the last five years.

TABLE 2 — WILDLIFE MANAGEMENT WORK COMPLETED ON
QUANTICO MARINE SCHOOLS, 1962-67

Year	1962-63	1963-64	1964-65	1965-66	1966-67
	Acres				
Planting of Farm Crops and Annual Mix	250	232	500	310	333
Aerial Seeding				1500	
Control Burning		3000	2200	2750	2300
Brush Clearing		620	740	700	790
Top Dress Wildlife Plantings				88	120
House Site Clearing		3(11)	20(15)	35(21)	60(26)
Renovate Bicolor			3(21)	5(40)	7(56)
Beaver Ponds Seeded					
Jap Millet		8(4)	8(4)	10(5)	20(8)
Fruit Trees Pruned		20	25		24
Fruit Trees and Shrubs Planted			26	725	
Fire Breaks and Access Roads Built		12 mi.	21 mi.		6 mi.
() Number involved					

TABLE 1 -- GAME MANAGEMENT COSTS FOR FISCAL YEARS 1962-63 THROUGH 1966-67, QUANTICO MARINE CORPS SCHOOLS, VIRGINIA

Source	1962-63	1963-64	1964-65	1965-66	1966-67
Budgeted:					
Commission of Game and Inland Fisheries (PR)		7,544.00	4,949.00	4,772.00	4,672.00
Marine Wildlife Management	1,500.00	2,750.00	3,020.00	4,050.00	4,200.00
Marine Special Services	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00
Marine Rod and Gun Club	350.00	500.00	700.00	1,000.00	1,000.00
Unbudgeted:					
Marine Personnel Salaries	8,316.00	8,694.00	9,366.00	9,450.00	16,596.00
Marine Equipment		2,309.00		1,495.00	5,835.00
Total	\$11,166.00	\$22,797.00	\$19,038.00	\$21,767.00	\$33,303.00

COLLECTION OF DATA

With all hunters required to check in and out each day the Marines have kept a continuous record of hunter days and game killed. When hunters check out when leaving the area big game was checked and tagged with the official Virginia big game kill tag. Weight, sex, and age data was also collected. Small game kills were recorded if reported by the hunter. Starting in 1963-64 all hunters were asked for the small game killed in order to get a more accurate count. In 1964-65 a sample of the hunters was taken to get the number of hours per hunter day. The last two years each hunter was checked for hours hunted and game killed.

RESULTS OF DATA COLLECTED

Hunter days and game harvested (Table 3) during the ten hunting seasons have varied. Hunter days and deer kill increased steadily until the 1963-64 season, then declined slightly. The 1966-67 drop in hunter days is believed partially due to the stepped-up training due to war in Vietnam. A second reason for loss of hunter days is believed to be the change in deer bag limits. The change from two deer, one of which may be a doe, to one deer, either sex the first day, was expected to cut the deer kill by at least one-half. Turkey kills during the ten-year period have varied up and down. Most small game has increased gradually during the last five-year period.

TABLE 3—HUNTER DAYS AND GAME KILL 1957-67, QUANTICO MARINE CORPS SCHOOLS, VIRGINIA.

	1957-58	58-59	59-60	60-61	61-62	62-63	63-64	64-65	65-66	66-67
Hunter days	3104	4213	4995	6490	7169	7169	9534	8248	8991	7558
Game Kill:										
Deer	121	178	342	479	572	564	721	581	465	190
Turkey	24	3	47	88	42	71	32	41	15	70
Quail	634	462	994		348	367	111	502	576	670
Grouse						5	5	81	53	97
Rabbit	437	349	732		147	112	87	670	807	1023
Squirrel	268	349	680		88	124	119	531	1011	748
Dove						232	120	292	421	501
Ducks						13	18	95	174	267

The hunter hours per hunter day (Table 4) for the three-year period indicate that hunters on Quantico average five and one-half to six hours per hunter day during the deer season. Hours were estimated by most hunters to the nearest hour.

TABLE 4—HUNTER-DAY, HUNTER-HOUR DATA FOR DEER SEASON, QUANTICO MARINE CORPS SCHOOLS, VIRGINIA.

	1964-65	1965-66	1966-67
Total Hunter Days	7746	8726	5721
Sample Hunter Days Checked	4654	8726	5721
Total Sample Hours Hunted	30652	43505	34707
Average Hours per Hunter Day	6.58	4.985	6.666

Kill records by week for the 1966-67 fall season (Table 5) show that the majority of the deer were killed during the first week. This was due to an either sex opening day which harvested 89 deer. There were 54 antlerless.

TABLE 5 — GAME HARVEST BY WEEK DURING DEER SEASON, 1966-67, HUNTING SEASON, QUANTICO MARINE CORPS SCHOOLS VIRGINIA.

Period	Sept.		Nov.				Dec.			Jan.		Feb.	Total
	17-19	21-26	28-3	5-10	12-17	19-24	26-31	2-7	9-4				
Game Harvested													
Deer	3	141	15	9	8	3	6	5	Closed			190	
Turkey		48	22	Closed								70	
Quail		163	65	83	14	12	0	0	332			676	
Grouse		28	16	12	5	3	8	9	16			97	
Rabbit		150	84	90	52	35	55	106	451			1023	
Squirrel		184	67	103	57	65	46	66	160			748	
Duck	157	49	25	21	12	8	6	0	Closed			278	
Dove	501	Closed	—	—	—	0	0	0	Closed			501	

The fall turkey season was two weeks, the shortest season on record. However, the kill was the third highest on record.

The hunter days recorded by week (Table 6) appear to have some correlation to the deer kill. Hunters hunted fewer hours the first two weeks than the remainder of the season. At no time were all the hunting areas open to hunting. During opening week only about one half the area was open. Although the areas open were restricted, only 48.4 percent of hunting spaces were filled and the percentage dropped to a low of 17.6 percent December 19-24.

TABLE 6 — HUNTER DAYS, HOURS HUNTED, AVERAGE HOURS PER HUNTER, APPROXIMATE ACRES HUNTED, HUNTER SPACES AVAILABLE, PERCENT SPACES FILLED, QUANTICO MARINE CORPS SCHOOLS, VIRGINIA, 1966-67 HUNTING SEASON.

Month	Nov.		Dec.				Jan.			Total	
	21-26	28-3	5-10	12-17	19-24	26-31	2-7	Deer	Gen.	Seas.	Seas.
Week											
Hunter days											
Military	1133	461	327	287	193	446	335	3182	4137		
Civilian	553	456	270	233	203	469	355	2539	3421		
Total	1686	917	597	520	396	915	690	5721	7558		
Hours hunted	8880	5222	4087	3380	2490	6132	4516	34707	36444		
Av. hrs. per hunter day	5.267	5.694	6.846	6.500	6.313	6.701	6.545	6.666	4.82		
App. acres/day	46426	34786	25700	34173	29960	34720	21866				
Hunter spaces available	3482	2609	1935	2563	2247	2604	1640	17080			
Percent spaces used	48.4	35.1	30.8	20.4	17.6	35.2	42.1	35.3			

In addition to the fall seasons a spring gobbler season has been open since 1962 (Table 7) furnishing a fair number of hunter days and yielding a fair harvest of gobblers.

TABLE 7 — HUNTER DAYS, KILL AND HUNTER DAYS PER KILL, QUANTICO MARINE CORPS SCHOOLS, 1963-67.

	1963	1964	1965	1966	1967
Hunter days					
Military			124	120	152
Civilian			220	230	353
Total	185	303	344	400	505
Kill	5	15	9	17	12
Hunter days per gobbler	37.0	20.2	38.2	23.5	42.1

COST PER HUNTER DAY

If the costs of game management are figured on the basis of cost per hunter day (Table 8), then the cost of management has varied from \$1.52 to \$4.21 per hunter day, with a five-year average of \$2.51 per hunter day.

TABLE 8 — COSTS OF GAME MANAGEMENT, HUNTER DAYS AND COST PER HUNTER DAY FOR FISCAL YEARS 1962-63 THROUGH 1966-67, QUANTICO MARINE CORPS SCHOOLS, VIRGINIA.

Year	Game Management Costs	Hunter days-Fall and Spring Seasons	Cost Per Hunter Day
1962-63	\$ 11,166.00	7354	\$1.52
1963-64	22,797.00	9837	2.33
1964-65	19,038.00	8592	2.22
1965-66	21,767.00	9391	2.32
1966-67	33,303.00	7911	4.21
Total	\$108,071.00	43085	
Av. cost per hunter day for five years			2.51

If the costs were figured on a per acre basis for the 54,000 acres of hunting area, the costs would be \$2.00 per acre for the five-year period or about \$0.40 per acre per year.

CONCLUSIONS

Quantico Marine Corps Schools have a very good game management program which should assure a continuing supply of game for excellent hunting. However, it has not always been a low cost program. Future costs should be expected to increase as the cost of equipment, materials and labor continue to rise. It is believed that the costs of the game management program on Quantico have been reasonable and well justified.

It cannot be emphasized enough that Quantico Marine Corps Schools is only one of several military reservations in Virginia that are playing a vital role in providing hunting and fishing for the general public in addition to carrying out their primary mission. This is a "fringe benefit" and they are to be commended for their excellent efforts.

ACKNOWLEDGMENTS

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