

MULTIPLE-USE MANAGEMENT OF PUBLIC GAME LANDS

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ABSTRACT

During the years 1960-1964, the Florida Game and Fresh Water Fish Commission's 62,500-acre Cecil M. Webb Wildlife Management Area in southwest Florida was converted from a more-or-less single-use area into a true multiple-use public recreation area. Management of the area during this time constituted a unique experiment in applying multiple-land-use concepts to lands which have hunting as the primary land use. A sound philosophy of management was promulgated for the area with provisions for hunting, fishing, camping, hiking, horseback riding, field trials, dog training, bird watching, nature study, target shooting, and other types of outdoor recreation. Area rules and regulations were modernized. New and improved grazing and farming leases were negotiated, and other business dealings on the area were strengthened. Public relations were greatly improved. Technical and non-technical information and education materials were disseminated. Cooperative endeavors with other agencies and organizations were encouraged. The wildlife research program already extant on the area was streamlined and additional needed studies were added. Most of this research involved the bobwhite, with limited work being done on deer and outdoor recreation. A comprehensive land-management program, designed to benefit wildlife and increase income from the area at the same time, was initiated. Existing game management techniques were improved. A reforestation program was started, along with the institution of improved timber management. Planning for long-term water-control projects was begun. Efforts in the field of information and education were increased to improve administration of the area and get the story of modern game management and multiple-use land management to the public. This was accomplished by public speaking, TV shows, personal contacts, and news releases, along with such other methods as fitted the immediate situation. The approach to law-enforcement problems on the area was modernized and increased effort was made to improve public relations in this sphere. The results of the overall program were most gratifying. There was an extraordinary increase in recreational use of the area by the public and substantial increases in game harvests as well. It was found that hunting as a primary land use could be more than adequately maintained within a multiple-use land-management program designed to provide the maximum in outdoor recreation opportunities for the public.

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Introduction

Outdoor recreation, wildlife habitat management, water management, and preservation of wilderness and natural beauty all involve the use of land surfaces. However, in some areas, we often find that there does not seem to be enough land that is available, accessible, or in manageable units or ownerships, to meet some of the requirements generated by our growing population.

This state of affairs is especially prevalent in the vicinity of urban complexes. In the future, things are likely to get worse, not better.

Public land administrators and professional resource managers have a responsibility in helping to solve these problems of land scarcity. Multiple land use has been offered as one solution to the management

of land and its attendant resources for the needs of society (4). As to future demands for land and multiple use, Landsberg (7) states:

"Increasing demands on land space for outdoor recreation, urban growth, highways, airports, and perhaps forests by the year 2000 will far exceed any relief provided by possible reduction in land needed for crops and the amounts of now unused land that can be pressed into service. According to the estimates for 2000, land requirements, if each use is counted separately, would add up to 50 million more acres than the country has, and this assumes no increase whatsoever in forest land. There are two ways to avoid so untenable a situation: more intensive single-purpose use of land, and multiple use of land. The second alternative offers new and expanded opportunities for ingenuity of policy and management."

It may be that land use problems of the future will be more institutional than physical. Studies by the Outdoor Recreation Resources Review Commission (8) indicate, for example, that: 1) most of the recreational acreage is in the West, but most of the people are not (and this is particularly true of Federal lands); 2) forest agencies at all levels of government manage the greatest number of acres, but a small percentage of the total number of areas, and 3) most of the acreage is in large tracts, and conversely most of the units are small—under forty acres. Therefore, there may not be a land shortage per se, but there definitely is a shortage of land which is strategically located, accessible, in manageable units, and suitable for use by the public. In such instances, multiple use coupled with good planning may be the only way of making the land which is available meet the growing needs of our future urban society.

In many instances, wildlife conservation agencies advocate multiple use of land resources to provide a sufficient supply of public hunting. Often, there are obstacles to obtaining multiple use, chiefly in the form of doubts on the part of those responsible for the land that multiple use would be compatible with their primary land-use objectives. In order that such doubts might be resolved, research is needed.

The Cecil M. Webb Wildlife Management Area

The Cecil M. Webb Wildlife Management Area is a 62,500-acre public hunting area located southeast of Punta Gorda, Florida. Its 100-square-mile land area constitutes one-seventh of the county in which it is located (Charlotte). It is owned by the Florida Game and Fresh Water Fish Commission, and was purchased with Pittman-Robertson funds. Initial land acquisition was undertaken in 1941—the first large acreage purchased by the Game and Fresh Water Fish Commission under the Game Management Division's public hunting area program (3).

The Webb Area is composed of second growth, cut-over slash pine flatwoods, interspersed with open, temporary ponds and seasonally wet sloughs, prairies, and hammock forests. Wildlife species of importance on the area are bobwhite, deer, dove, hogs, ducks, snipe, and woodcock.

During the years 1960-1964, the Webb Area was converted from a more-or-less single-use area into a true multiple-use public recreation area. Management of the area during this time constituted a unique experiment in applying multiple land-use concepts to lands which have hunting as the primary land use.

In this instance, the advantage of having hunting as the primary land use is obvious. Other recreation activities could be made available on the area along with the hunting, and the results of this combination readily determined. Where the primary land use is other than hunting, e.g., in parks, it is often difficult to get public hunting instituted so that the results of combining hunting with other recreational uses can be observed.

Philosophy of Management

In order to manage any land to the best advantage, it is desirable

to have a philosophy which will serve as a guide in choosing among the various courses of action that might be taken (6). The philosophy of management espoused by those responsible for the Webb Area was that:

1) The area should be manipulated to produce the greatest amount of hunting that is consistent with wise resource use.

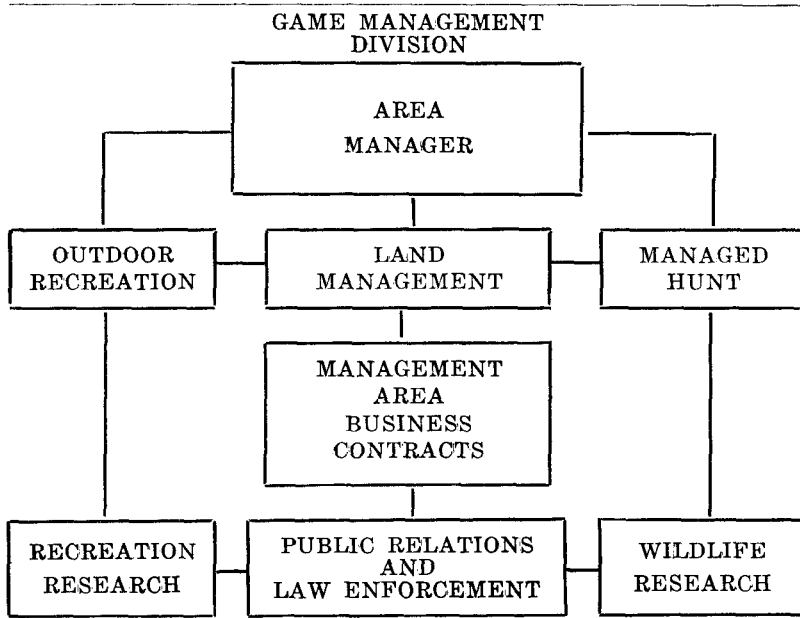
2) The greatest possible amount of outdoor recreation of all other types should be incorporated with the hunting.

This philosophy was backed by a determination on the part of Webb Area personnel to secure the objectives of a multiple-land-use program on the area.

Administration

Administration of the Webb Area entailed the development of a public outdoor recreation area within a self-supporting land-management unit. Attention was given to outdoor recreation opportunities and facilities, land management, business relationships, research, public relations, and law enforcement. Figure 1 shows how the administration of the area was organized.

Figure 1. Administrative Organization on the Cecil M. Webb Wildlife Management Area, Charlotte County, Florida, 1960-64.



Day-to-day decision making was accomplished by the area manager. In addition, certain business-decision making was transferred from the Game Management Division central office to the Webb Area office in order that decisions could be made by those having daily contact with the local situation. In this manner, it was possible to greatly strengthen business dealings on the management area.

Administrative efficiency was increased by the construction of a residence on the area for the area manager. Having the manager reside on the area also strengthened law enforcement and public relations, and increased the efficiency of managed hunt operations.

The Managed Hunt

Controlled public hunting has been conducted on the Webb Area since 1950. Some of Florida's finest quail hunting is found there.

Hunters pay a daily fee of \$5.00 for hunting permits which are obtained at checking stations on the area.

The Webb Area can be thought of as the "Last of the Mohicans" insofar as public quail hunting areas in Florida are concerned. Generally speaking, it is no longer feasible for game commissions to attempt to furnish public quail hunting as such (2). It takes far too many acres to produce sufficient numbers of quail for even a limited number of quail hunters. However, quail hunting, like native trout fishing, is a quality sport and is still available on the Webb Area. This quality quail hunting is part of the heritage of the southeastern United States, and probably should be preserved somewhere, somehow, if possible. The \$5.00 daily fee on the Webb Area serves to limit the number of quail hunters to the point where each of the hunters can expect to have quail hunting of good to excellent quality.

Prior to 1960, the length of the quail season on the Webb Area was by and large determined by the length of time during which a reasonably high daily bag could be maintained. The season usually ran from four to eight weeks. During the quail season on the area, hunting for dove, snipe, and woodcock was also permitted when federal open seasons on these species ran concurrently.

As time progressed, however, it became apparent that the quail hunters were as much if not more interested in a quality place to hunt as in a high daily bag. This situation was a direct result of an increase in hunters and a decrease in acreage available to the hunter. Research projects on the area also suggested that the total annual kill on the area could be expanded without harm to the quail population, and that the length of the season was not the main determinant of the total kill. Therefore, in order to obtain the greatest possible amount of hunting from the area that would be consistent with wise resource use, both the annual quail harvest and the season length were gradually increased.

Since the eradication of the screw worm in south Florida, the deer herd has been increasing rapidly. This increase in deer numbers made it possible to open the Webb Area for deer hunting in 1962. Duck hunting was permitted on the area beginning in 1963, and hog hunting in 1964.

Table 1 shows the season lengths and results of the hunting seasons during the years 1960-64. It can be seen that hunting opportunity on the area was greatly expanded during this period of time.

Managed dove fields were established for the first time in 1963. Browntop millet was planted on approximately 300 acres of land formerly utilized for truck farming. A daily fee of \$2.00 was charged for hunting on these fields. However, during the quail hunt, those purchasing the regular \$5.00 daily hunt permit were entitled to hunt on the dove fields at no extra charge. The dove fields were a phenomenal success, with 846 hunters firing over 50,000 shotgun shells and harvesting 6,003 doves during the 1963-64 season.

Table 1. Results of Hunting Seasons on the Cecil M. Webb Wildlife Management Area 1960-1964.

Year	Deer Hunters	Quail Hunters	Dove Hunters	Deer Kill	Quail Kill	Dove Kill	Snipe Kill	Woodcock Kill	Season length in weeks for quail
1960									
1961	Area closed to all hunting because of effects of hurricane "Donna"								
1961									
1962		633			3,484				12
1962									
1963	68 ¹	480	—	2	2,351 ²	31	21	3	13
1963									
1964	470	850	846 ³	22	6,043	6,003	152	2	15

¹ Area opened to deer hunting for first time.

² 1962 quail population reduced by unfavorable weather conditions.

³ Managed dove fields opened for first time.

Outdoor Recreation

Development of the Webb Area for other types of outdoor recreation included the establishment of unimproved campsites and picnic areas, managed fish ponds, dog training areas, a Boy Scout camping area, and rifle and pistol ranges. A wildlife photo corral and a field trial area had been established previously on the area.

Each year the Webb Area plays host to at least four important bird dog field trials. It is anticipated that in the future, beagle trials will also be held on the area. The field trial grounds include a well-fitted club house, dog kennels that will house up to 160 dogs, horse stables, and a picnic pavilion.

Other outdoor recreation activities which were made available to the public were horseback riding, bird watching, nature study, hiking, fossil collecting, wildlife photography, and frog gigging.

An attempt was made to furnish the public with almost any outdoor recreation activity in which they showed interest. People were made to feel welcome on the area the year around, and there was hardly a day of the year in which the area didn't have some worth-while activity to offer.

Land Management

In 1961, a comprehensive land-management plan was initiated on the Webb Area by Commission personnel. Basically, this plan called for farming, reforestation, grazing and pasture improvement, water control, and the mining of shell and marl to increase fish and wildlife populations, as well as to increase the Commission's income from the area. Because state conservation agency budgets are nearly always rather limited, it is all to the good if an income can be realized from land-management activities of agency-owned lands, so long as such activities are of benefit to wildlife and do not deplete the other resources of the land.

Investigations on controlled burning showed that this is probably the most important game-management tool available to the wildlife biologist in south Florida. Controlled burning eliminates older vegetation and permits the growth of valuable quail food plants which occur only in the early stages of ecological succession. Certain deer food plants in the area are also benefitted by controlled burning. Happily, controlled burning in south Florida is also necessary for the production of cattle forage on native range (5). Here is an instance where the raising of quail and cattle on the same range is not only feasible, but desirable. Because of this situation, it was possible to lease the Webb Area for grazing, and to have the grazing lessees do most of the burning as part of their responsibilities under their lease. Approximately one third of the Webb Area was control burned each year.

Farmers were allowed to grow a vegetable crop on certain parcels of the Webb Area during the late fall and winter growing season. The farmers clear the land, bed it, and apply lime and fertilizer. This enhances soil fertility and water control. Then, in the spring after the vegetable crop is harvested, the grazing lessee follows the farmer and plants the area to a grass which will be of benefit to both cattle and quail. The two major plantings used in this connection were Alyce clover and Pensacola bahia. The ultimate outcome of this farming-grazing operation is a wildlife food plot at no cost to the landowner. Preliminary evaluations of this land treatment were most encouraging; during the 1963-1964 hunting season, some of the improved areas held very large numbers of quail.

Mining of marl and shell on the area is done in such a way as to produce fish ponds as the marl is removed. The marl pits are dug according to specifications set up by the Commission's Fish Management Division, and the Commission receives a royalty on sales of the mined material. Upon completion, the pits are fertilized and stocked with game fish. The immediate area around the pits is then landscaped to make it attractive for picnicking and camping, two activities which go hand-in-hand with public fishing.

The reforestation program will increase the aesthetic value of

the management area, produce income for the Commission in future years, and provide added cover for wildlife (one of the limiting factors for deer on the area is believed to be an inadequacy of timber cover). In addition, it will provide firewood for area campsites. In the 1962-1963 program, fifty acres of slash pine and ten acres of Eucalyptus were planted in ten-acre blocks. Three of the slash pine blocks were control burned before planting, while the other two received total site preparation. The object of this dual treatment is to determine if slash pine can be grown successfully with a minimum of site preparation in south Florida quail habitat, where fire is an important quail management tool as well as a normally occurring ecological factor.

Plantings in 1963-1964 consisted of sixty acres of slash pine, arranged in long strips within old farm fields. The planting arrangement of blocks and long strips provides for the greatest amount of edge that is consistent with local topography and forest economic considerations.

Upgrading of the management of timber resources already extant on the area was accomplished with the assistance of the Florida Board of Forestry.

It is believed that the chief limiting factor for the quail population on the Webb Area is excess surface water in the summer months. The area is characterized by poor quality soils underlain with sedimentary deposits composed principally of limestone, marls, and calcareous sandstones. The topography is flat; drainage patterns are poor. Therefore, plans were made for initiating studies which could provide information on how to obtain adequate water control on the area. In this connection, a distinction was made between water control and drainage. Much of south Florida is already over-drained.

An example of other business arrangements which provide an income from the area and make possible improved land management is the oil and gas drilling lease which the Commission recently entered into with the Gulf Oil Company. It is anticipated that drilling operations will eventually involve the construction of access roads which could not otherwise be built because of the attending expense. The drilling will be done under conditions which will insure that no damage is done to other management area resources.

Land management on the Webb Area also includes routine maintenance of roads, bridges, fences, signs, and buildings. A substantial part of the fence and sign maintenance is done by grazing lessees under the terms of their contracts.

When business contracts are negotiated by the Commission, consideration is first given to improvements in wildlife and land management which can be obtained through the business operations; secondary consideration is given to the income which will accrue to the Commission.

Research

Development of any land area should be based upon a broad research program. Accordingly, various research studies are included in the management scheme of the Webb Area. Since bobwhite is the foremost game species on the area, a study of its life history and population dynamics has been paramount. This particular phase of the research program was initiated in 1946 by Dr. O. E. Frye, Jr. (1). Other studies have determined the effects of hunting on the quail population, the effectiveness of automatic quail feeders (and their cost) in increasing quail numbers, and the effects on the quail population of the land management techniques already described. Other research is being done on deer, outdoor recreation, and tropical hardwoods. In the latter study, the availability of wildlife food plants in Eucalyptus plantations having different tree spacings is being measured. This is a cooperative endeavor between the Game and Fresh Water Fish Commission, the Florida Board of Forestry, and the Southeastern Forest and Range Experiment Station. If Eucalyptus should become an important commercial timber species in south Florida,

as many believe it might, this information will be invaluable to future wildlife management in that geographical area.

An attempt has been made to streamline the research program, while at the same time expanding it to meet the total needs of the management area.

Law Enforcement and Public Relations

In addition to the administration, land management, and research activities already mentioned, multiple-use management of the Webb Area also includes law-enforcement and public relations activities. An especial effort was made to improve and maintain good public relations because so many aspects of area management were dependent upon the good will and trust of the surrounding community. This was accomplished by public speaking, TV and radio shows, news releases, dissemination of information and education material, personal contacts, and such other methods as were appropriate to the immediate situation. One of the most important of these activities was the training of youngsters in safe gun handling and marksmanship. Every other Sunday, members of the Peace River Valley Junior Rifle Club met at the Webb Area junior rifle range where they were given courses in Hunter Safety and Marksmanship by certified National Rifle Association instructors. In the years 1962 through 1964, more than 200 Charlotte County juniors completed the NRA Hunter Safety course.

In the law-enforcement sphere, efforts were made to improve public relations and to modernize the approach to law-enforcement problems. Area rules and regulations were revised and updated so as to give the public as much freedom on the area as was consistent with proper resource management.

Conclusion

Management of public game lands such as the Webb Area is complex and challenging. The management program must of necessity be a dynamic one, ready to accommodate new research findings and changing conditions in society. Plans must be long term, extending 25 or even 50 years into the future.

Primary land use of different public lands will naturally vary. However, experience on the Webb Area has proven that good land management, hunting, and other outdoor recreation activities, good business, and resource conservation can all be realized on the same public area through true multiple-use management. If those responsible for our public lands have the knowledge, the skills, the social awareness, and the determination, what has been accomplished on the Webb Area can be accomplished elsewhere.

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PREDATION BY EUROPEAN WILD HOGS ON DUMMY NESTS OF GROUND-DWELLING BIRDS¹

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The object of this study was to determine the effect European wild hogs (*Sus scrofa*) have on ruffed grouse (*Bonasa umbellus*) and wild turkey (*Meleagris gallopavo*) populations. This effect was determined through enumeration of predation on birds' nests. The recent increased interest in transplanting wild hogs to other state areas containing native game bird populations has created a need for information on interactions between the hog and native game bird species.

The study was conducted on the Tellico Wildlife Management Area in the Appalachian Mountains of southeastern Tennessee. This area contains a herd of European wild hogs plus huntable populations of wild turkeys and ruffed grouse.

Jim Lewis, Supervisor of Game Research, contributed encouragement and support to this research approach.

PROCEDURE

Fifty dummy nest sites were selected in areas thought to be likely nesting places for turkey and grouse. The selection was based on descriptions of nest sites in the literature and experience with nests found previously in the wild state. Nests were placed in the different types of cover occurring alongside old logging roads, foot trails, and food plots and in areas of both high and low populations. A small depression was made in the leaves and five fresh, brown, pullet eggs were placed in it. The eggs were then covered with leaves of the same type as that used for the nest. The literature indicates that both grouse and turkeys lightly cover the eggs with leaves and other material when not incubating.

The classification of low and high hog populations was based on field signs such as rooting, tusking, and wallowing. In the area of low population these signs were scarce and attempts to trap hogs in this area during the study were unsuccessful. The high-use area exhibited a large amount of the signs previously listed and many hogs were trapped.

Marking tape was placed in the general area to locate the nests for checking. Nests were not approached directly during the checking period but were observed from a distance. Examinations for predation were conducted either two or three times a week.

The study was conducted in the spring during the normal turkey and grouse nesting season and extended over a period of 45 days. Forty-three days were thought sufficient to permit a hen turkey 16 days to lay the clutch of eleven eggs, the average size of the turkey clutch, and 29 days for incubating and hatching (Mosby and Handley, 1943). Grouse require 41 days to lay and incubate a clutch (Bump, 1947). A nest that survived 43 days was considered a successful nest.

Predation by animals other than hogs was also recorded. Predators were identified by the characteristic sign left at the nest (Davis, 1959).

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