

# HIGHLIGHTS OF GAME MANAGEMENT IN THE SOUTHEAST FOR THE PAST DECADE

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## INTRODUCTION

Game management in the Southeast during the past decade has developed under conflicting influences. Some of these have been stimulating, other discouraging. Essentially it has been a struggle to adjust between a greatly increased hunting demand on one side, and modern trends in land use which restrict game production on the other.

### ADVERSE FACTORS

Some farm developments, like improved pastures, offer poor game habitat. Large reservoir impoundments flood timbered bottomlands and obliterate excellent range for deer, turkey, and squirrels. Below the dams, clearing and cultivation move into the river bottoms. Coastal marshes are reclaimed for rice and truck crops. Inland marshes are converted to tomato fields and pastures. Timber operators eliminate the hardwoods and favor pure pine stands. This is not a lament, but a statement of problems which we have had to face and adjust to in our game management.

### HELPFUL FACTORS

Awareness of these problems has drawn the wildlife agencies and interests into closer harmony. There is a keener perception of game production and harvest as a land use of increasing importance in our way-of-life. Greater leisure, more hunters, and a mounting pressure of public interest are fusing wildlife groups into a solid front.

More hunters and higher license fees are augmenting the game management funds. Federal Aid allotments went up during this ten-year period. Technical game staffs grew rapidly. Research and experience showed the fallacy of some practices and the wisdom of others. It was a period of flux, but the picture is beginning to form.

## STATE WORK

Of all agencies the state fish and game departments bear the greatest responsibility and they are contributing the most to overall game management in this Region. The quality of their programs has improved greatly since 1945. Termination of the war released men, money, equipment, and materials. Ambitious programs resulted.

### P-R ALLOTMENTS

P-R allotments to the 12 states in this Region increased many fold during the past decade. In 1946 they received about \$131,000. In 1955 this allotment was nearly \$2 million. In 1952, the high point, it was over \$3 million. The total for the ten years was \$16½ million. These funds gave our game management a potent shot-in-the-arm.

### PERSONNEL

As funds became available, our states built up staffs of career men—game management technicians. Better-than-average salaries were paid, and good men obtained. Occasional comparison of salaries paid to our state P-R men showed them to exceed the national average. Not that our men got high salaries, but rather that the national average was low.

These technical staffs were remarkably stable during changes in political administration. I can recall few if any cases of firings for purely political reasons. This is a fine record, and it was a vital factor in strengthening the programs.

### PUBLIC HUNTING GROUNDS

The development of large public hunting areas has been a high point in achievement. These areas have been purchased, leased, or secured through cooperative agreements.

*Land Purchases:* About 380,000 acres of game lands have been purchased. Of this, 264,000 acres is upland game habitat, 71,000 acres is timbered bottom-land for forest game and ducks, and 46,000 acres is waterfowl marsh.

*Land Leases:* A very important development has been the leasing of large, private land-holdings for public hunting. Florida, the leader in this movement, has about two million acres of private forest land under contract. The State pays two cents per acre per year, or its equivalent in services such as fencing or fire protection. Other states are involved in this kind of land agreement. It is most feasible in the coastal plain where large, solidly blocked timber ownerships are available. It is a trend which will continue. The states realize that public hunting needs can be satisfied to only a small degree on state-owned lands. Private lands and National Forest lands will need to carry the major load.

*National Forest Lands:* There is some form of state fish and game activity on practically every National Forest in our Region. The largest scale developments are on the Thomas Jefferson and George Washington Forests in Virginia. They comprise stocking of deer and turkey and habitat improvement for these species and for grouse. The most intensive work is the wild turkey development on the Francis Marion Forest in South Carolina. Usually the state work is done, not on an entire Forest, but on a management area of several thousand acres where hunts can be controlled.

#### FOREST GAME RESTORATION

Our states have worked chiefly with deer and turkey, stocking them carefully in suitable habitat, with good protection and some supplementary foods. As a result, deer are being hunted where none existed ten years ago. Several trouble spots of over-population of deer have arisen, and doe hunting is open in parts of three states.

*Stocking:* During this decade our states have liberated 7,600 deer, 5,900 turkeys, 1,292 beaver, 409 muskrat, and 251 grouse. Some deer were purchased in Wisconsin and Texas, but most were live-trapped within each state. Of the turkeys, 1,500 were wild-trapped birds. The remaining 4,400 were semi-wild propagated birds stocked in Virginia.

Deer trapping with a simple 3' x 4' x 8' box has been quite successful, especially where salt can be used for bait. Turkeys present a tougher problem. Traps vary but the corral-pen, the large netting frame, and the cannon net are the most usual. The stocking of wild turkeys has been very successful. The value of the tame birds is dubious. Virginia is now seeking to appraise the value of its extensive use of pen-raised birds.

*Habitat Improvement:* Forest game developments have been chiefly supplementary food plantings for deer and turkey. These have usually been in forest openings of one to five acres. Winter greens, small grains and grass sods were used. The trend is toward grassed clearings with low maintenance. For turkeys automatic grain feeders have been useful. Prescribed-burning to keep the woods open has proven good practice on turkey range in longleaf and slash pine types.

The trend of thought now favors game habitat development through timber management. Cuttings to benefit game will improve game habitat throughout the forest instead of limiting it to cultivated food patches.

#### QUAIL RESTORATION

State quail restoration activities have involved hatcheries, state-owned hunting areas, and farm habitat development.

*Quail Hatcheries:* Only one-half of our states operate quail hatcheries. With one exception those who do have scaled it down to a token activity. It is generally conceded to be poor business.

*Hunting Areas:* Three states have purchased and developed large areas for public quail hunting. These range from 7,000 to 60,000 acres in size. The big one is Florida's Charlotte County area where the hunters' average daily bag is eight birds. These quail areas are not only supplying good hunting; they are also yielding valuable research data. It is the consensus, however, that the hunter will have to seek his quail mostly on private lands and especially on farms.

*Farm Habitat Restoration:* During the decade the Southeast has gone through successive stages of trial and error in the search for effective means of improving quail habitat on farms on a statewide basis. At first there was a trend away from annual food patches into sericea field borders, then to sericea-bicolor plantings. There was an early shift from bicolor seeding to transplants. Now we are in a period of critical evaluation of the whole problem. Bicolor and sericea are still being used and in some states in large quantities. Most states use about a million plants, and in a few instances a state may use as many as five million or ten million bicolor plants.

The trend is away from relying mainly on bicolor and sericea. Our states are using diverse methods, and there is a swing toward annual lespedeza, seeding of bicolor, and the use of multiflora rose. One state distributes a variety of trees and shrubs.

An effective, statewide quail program is the most difficult thing for a state game department to find, and it is the thing that brings the most pressure from sportsmen. Arkansas recently countered a strong sportsmen pressure toward statewide artificial quail stocking by convening a discussion panel of game technicians from adjoining states. The panel arrangement thoroughly aired the question, and the consensus was adverse to such an artificial program.

We need a critical evaluation of the whole problem. An initial step in this direction has been taken by a Farm Game Research Committee appointed by the Southeastern Section of the Wildlife Society.

#### WATERFOWL RESTORATION

In the acquisition and development of lands for waterfowl, our states are doing some outstanding work. At least 117,000 acres have been purchased, and 80,000 more are set up in approved projects. These include timbered bottomlands, old rice fields, and coastal marshes. TVA and Army Engineer reservoirs are also being used.

*Timbered Bottoms:* Arkansas has already purchased about 7,000 acres of this type in seven different areas. They may double that in a few years. Their timbered bottoms are excellent for deer, turkey, and squirrels. With simple contour levees they can impound shallow waters over thousands of acres of oak flats, and this furnishes fine duck shooting. This is the major example, but other states are seeking like opportunities.

*Ricefields:* Georgia and South Carolina have bought large areas of old rice fields on tidal rivers. These are being restored for heavy duck food production. They will be show places when fully developed. At Hog Island the State of Virginia has a duck and goose refuge in a James River marsh which a misguided individual developed for rice culture some 50 years ago. North Carolina has a small rice field development at the famous Orton Plantation.

*Reservoirs:* Mississippi, Alabama and Tennessee are particularly active in waterfowl development on Army Engineer and TVA reservoirs. The state work and the National Wildlife Refuges along the Tennessee River have together developed a substantial flyway of ducks and geese along this chain of reservoirs. The state areas are open to public hunting.

Although not on a reservoir, attention should be called to Kentucky's purchase of 8,000 acres for waterfowl development on the lower Ohio River in Ballard County. They hope to get a share of the geese from Horseshoe Lake. Florida's immense water conservation areas in the Everglades offer untold opportunities, as well as complex problems to be solved.

#### RESEARCH

The experience of our states in game research has been good and bad, but several projects are outstanding. The variety and unusual interest attached to many of these investigations tempts a detailed discussion, but time and space do not permit it. Research has been done on waterfowl, quail, turkeys, pheasants, deer, muskrat, squirrels, rabbits, predators, statewide wildlife inventories and economic surveys.

*The Cooperative Dove Study:* From 1948 to 1952 ten of our states participated in a mourning dove study which is our outstanding research achievement. All states used the same work plans. The data were coordinated and periodically reported on. Annual field conferences of project leaders were held

to solve mutual problems. Several valuable techniques were developed, including the dove call count. This is being used each breeding season on over 700 routes throughout the United States. The dove study represents the most concerted investigative attack ever made on a single species. It laid the foundations of dove management, but the data need the support of some further work on banding, hunter bag checks, and annual call counts. The responsibility for the call counts has been assumed by the Fish and Wildlife Service Branch of Game Management. Some states continue to gather data, but a more widespread effort is needed.

*Quail Research:* The outstanding investigation in this field is that of O. E. Frye, Assistant Director of the Florida Game and Fresh Water Fish Commission. He studied the South Florida quail sub-species on the State's 100 square mile property in Charlotte County. His report on seven years of work will soon be published. His research guided the management of the area very effectively. An interesting phase was the work with quail feeders which have increased the carrying-capacity of the feeder area by 30%.

*Turkey Research:* The intensive research of Robert Wheeler at the Fred Stimpson Turkey Sanctuary in Alabama is noteworthy. He lived with the turkeys in this ideal habitat on the banks of the Tombigbee River. Here he had a rare opportunity to study the habits of the birds intimately and to test the effect of prescribed burning, supplementary foods, and forest clearings. Wheeler started the live-trapping of wild turkeys there, and this sanctuary has produced the birds used in Alabama's turkey restoration.

*Deer Research:* Restoration of deer has brought serious problems of over-population and consequent injury to habitat. All of our states have been impelled to recognize these problems and to seek for remedies through research. Good work has been done, and it continues.

Because it has been published, and acknowledging the high quality of the work, I accent the studies of the Ocala deer herd by Don Strode in Florida. On this National Forest Strode has found that timber stand improvement cuttings and timber harvest can, by adjustment within practical limits, produce good deer habitat. Being a pulpwood operation, this is all the more striking.

Studies and experience elsewhere, and especially in the hardwood forests of Kentucky, North Carolina, Tennessee, and Virginia, are showing how to manipulate deer habitat advantageously through timber management. Success along these lines is as vital to our forestry friends as it is to us, and Forest Service people are giving splendid aid. A Forest Game Research Committee of the Southeastern Section of the Wildlife Society will try to coordinate studies in this field.

*Muskrats:* The published work of Ted O'Neil on muskrats in the coastal marshes of Louisiana is well known. It was a valuable contribution to our knowledge of the ecology of the vast Louisiana marshes. It was, as well, an original and authentic description of this coastal 'rat and the trapping business which it supports. O'Neil's data have been augmented by subsequent studies by the Fish and Wildlife Service.

A current study of the 'rats of the Currituck region of coastal North Carolina by Ken Wilson exemplifies intensive control on a small marsh.

#### TECHNIQUES

Out of the research and the experience of the past ten years have come many interesting and useful techniques. Some of them have been spectacular. Certainly Florida's Frank Winston was more than conventional when he dyed his trapped doves a yellow color—the flying oranges. He is dyeing ducks, too. But, Frank's most colorful stunt is scooping up coots in a dip-net from an air-boat.

In Louisiana Leslie Glasgow evolved an unusual way of capturing woodcock by flashlight and dip-net. Also, in the Louisiana snipe studies Japanese mist nets were used very effectively in trapping the birds.

Experimentation with trapping deer and turkey for restocking is unrelenting. The cannon net is used on turkeys in several states. It is also used for doves. In Georgia, Jack Crockford and Jim Jenkins are taking deer alive with a

drugged dart shot from an air gun. The Virginia Cooperative Research Unit in using the drug—Avertin—on bait to capture turkeys.

Turkey feeders and quail feeders are proving very useful when supplementary feed is needed. They are also useful tools of research and management, since they provide excellent observation points for checks of population trends, breeding success and survival, condition of stock, banding operations, use of native foods, etc.

The easily constructed contour levee, so useful for shallow waterfowl impoundments is a practical technique. The forest clearing of one to five acres, is a proven tool in turkey restoration. In the equipment field the rototiller is proving of great value in elimination of undesirable brush.

The past five years brought a rapid accelerated use of statistical techniques in the design of research projects and in the analysis of data. Properly used, statistics will simplify research, yield more reliable data, and obtain a higher return in results per research dollar. However, statistics should be involved in a project from its inception and not resorted to as an afterthought after the data have been collected.

### COOPERATIVE WILDLIFE RESEARCH UNITS

The benefits from our two Units must be recognized. They have trained many fine men who occupy wildlife positions of trust and importance all over this Region. Then, too, they have contributed much to our technical knowledge through continuous research.

Alabama's Polytechnic Institute gave us the "Mourning Dove in Alabama"—a forerunner of the Southeastern Cooperative Dove Study. That Unit is outstanding in its work on trichomoniasis in doves. They have improved the technique for distinguishing young quail from adult birds. They found that ammate, as used in poisoning of unwanted timber species, is not dangerous for deer. Basic studies of life histories have led to improved management for doves, gray squirrels and cottontails.

Virginia's Polytechnic Institute is proud of its 20 M.S. candidates and three Ph.D.'s who received wildlife degrees since 1950. Several publications which have appeared at this Unit are noteworthy, and the good work continues. We are especially interested in McDowell's study of the wild turkey and Cantner's reviews of wild turkey restoration throughout the country. Their evaluation of the propagation-pen technique as used with turkeys in Virginia will fill a real need. Projects are under way in the use of Avertin to capture turkeys and other wild animals, studies of the black bear, and effects of controlled harvesting on farm game.

### RIVER BASIN STUDIES

The Branch of River Basins of the Fish and Wildlife Service, working with our state fish and game departments, the Wildlife Federation groups, and others has welded the thoughts and the energies of varied wildlife interests to a common purpose.

Navigation plans for the Tombigbee River in Alabama were modified with the saving of 65,000 acres of the State's finest deer and turkey habitat. The North Carolina Wildlife Resources Commission was supported in the preservation of the valuable striped bass fishing on the Roanoke River. A region-wide inventory of wetlands, completed in June, showed the need to obtain key game areas in the bottomlands, and the states are using this survey as an acquisition guide. These few examples are potent testimony that a new branch of teamwork among our wildlife people is winning for them recognition in the planning for land and water use.