

cases his life for what he knows is right for the future welfare of the game and fish. To lose faith in leadership hurts each man, his state and this association. We believe in a realistic approach to the game and fish problems but at the same time it is your responsibility to be honest to yourself and the sportsmen you represent. Do not sacrifice your convictions for personal gains.

Let me say again that it is gratifying to see all of you and I hope you take an active part in the program.

## "SOUND WILDLIFE ADMINISTRATION"

By DR. IRA N. GABRIELSON  
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Washington, D. C.

Mr. Chairman, Members of the Southeastern Association, Ladies and Gentlemen :

It has been a number of years since I have been before this group, and I am glad to be back again. But, my, how youthful you have gotten to be! As I look over this crowd, I see only one man who I am sure attended the first International Meeting that I attended, and that is I. T. Quinn. When I came to these meetings a few years ago, I talked to a group of fellows my own age, but something has happened, and it's all to the good. I just want to say that if we make as much progress in wildlife management and wildlife conservation in your lifetime as we have made in mine, we will be going places, and we will have better wildlife management and administration as a result of your efforts and those like you are coming into this game.

I have been asked to talk upon the subject of "Sound Wildlife Management," and I can say without boasting that I have had unique opportunities to study wildlife administration and management. I have known personally the majority of the State Directors and Commissioners since before most of this audience was born, and I have had the opportunity of making surveys in more than half of the states in the United States, one province of Canada, and doing some work for several foreign countries with the departments managing the wildlife resources. This has given me an opportunity to go into their records, their policies, their programs, and had a chance to compare many of them on a very confidential basis. I get much information that never gets into the printed reports, and have found that there are certain things common to every sound, progressive, wildlife management program, and when I say wildlife, I am including fisheries, because in the majority of the states the two resources are managed by one department. Their basic problems are similar, although the details may be different.

There is a common thread that runs through all of these good administrations, and it goes back—it isn't any accident—to about 1928 when the International Association of Fish and Game Commissioners appointed a committee to develop a model basic law on which wildlife management could be based. It took about four years, as I recall, to present that model to the International Association, and that model law has been the pattern from which the best state legislation has been developed. It has been modified and changed in detail, but the fundamental philosophy is still the best basic philosophy for wildlife management that has yet been developed.

In studying many departments it soon became obvious that there are four basic essentials for a good wildlife management program. First, adequate financing. Second, adequate authority, not only to make and enforce regulations, but to make investigations, gather facts on which those regulations may be based, to employ personnel that are competent, to carry out a program based on facts and not on imagination.

The third of the four essentials is a continuity of personnel. It goes without saying that those states that have employed and kept competent people are doing a better job than those that change them every time there is a new Governor, and I am sorry to say that there are still too many in that class.

A continuity of programs is the fourth. In states, which have good administration, a good, sound program that is going ahead, these things are always present. There are many other factors that are good which I won't have time to mention today, but these four are essential to an adequate and successful program. They provide not only money but trained people, a sound program, and flexibility to meet changing conditions.

Now, how do we get these things? My opinion is that the most successful device yet found for getting the adequate authority is the Commission form of administration by non-paid Commissioners, the fewer the better. Those Commissions that are made up of three or four men function more efficiently generally than those with more. I think we have one Commission in the United States now with seventeen members, and the staff spends an inordinate amount of time just keeping the wheels turning and keeping things going in one direction.

The Commission should be a policy and budgetary-making Commission, and it should be appointed for staggered terms, so that there is never a complete turn-over and an entirely new bunch of green Commissioners. I am making that statement advisedly. I think I have known a great majority of the men who have served on state game commissions in this country since the Commission form was set up. Very few of those men were incompetent individuals. The vast majority wanted to do a good job, but they were coming into something new, and it takes them a year or two to really become conversant with the problems of the Department and with the program that they are trying to manage. In too many states about the time that they begin to know what it is all about, they are thrown out to be replaced by a new set of greenhorns. May I say in passing that where these staggered terms are lived up to, they do provide a continuity of thinking and policy and help develop that, but I have seen in several states the entire group resign when a new Governor was appointed so he could have a chance of starting over again. That in itself kills the very greatest value in having a Commission form of administration.

The Commission should have the authority to select a Director, and that Director should be selected only on the basis of ability and competence. He should not be selected by the Governor. Management of wildlife or of any other natural resources falls down whenever it is managed for political rather than sound basic reasons. The Director should be the man who carries out the policies, sees that those policies are adhered to by the staff, sees that the budgets are observed, and who does all administration of the staff.

The greatest weakness in the Commission form of managing wildlife resources is the human tendency for Commissioners to start to dabble into the every-day administrative affairs, and in some states in which I have made studies there has been not one Commission but five little game departments in one state, each Commissioner trying to pick and direct the employees in the field in his own home district. In one state I came to the conclusion that what they had was one paid and seven unpaid Directors, and the paid Director was more or less of a figure-head. The seven men who were supposed to be the policy-making group were going in as many different directions in their own territory as it was possible for seven different men to go. That is obviously a great weakness.

The law should be specific in establishing the Commission as a policy-making and budgetary control body, and the law should be equally specific in establishing the Director as the man who does the administration of the program and handles the staff. He should be empowered to employ personnel under a merit system, under standards established by the Commission, and the Commission itself should not have anything to do with the employment of the personnel or with their assignments.

Recently I attended a meeting of a Commission in a state in which I was not making a study. The meeting lasted two days. The Commission spent most of their time listening to and questioning candidates for game wardens. I can think of nothing more futile or anything more disruptive of good administration than such a procedure. At the end of their meeting they postponed two or three vital policy matters which should have had their attention, because they did not have time to give those after listening to all the candidates for positions in the department. That should have been done by the Director with a carefully designed system rather than for the Commission itself to attempt to do it.

Adequate financing—I don't know who the genius was who first thought of it, but so far as I can find, the first state that earmarked hunting and fishing license funds for the use of administration of that resource was North Dakota. Prior to that time every state had the same problem. They had a wildlife authority of some kind who had no money to work with and nothing to do with. I can remember, for example, when Elliott Barker and a stenographer were practically all of the New Mexico Game Department, and it took a lot of years and a lot of work to build up an adequate department.

This system of financing by license receipts is now universal in the United States. Every state earmarks that money for the administration of the resource. It is the only natural resource whose management is entirely financed by the people who use it. That is not true of any other natural resource. It isn't even true of the commercial fisheries that utilize fish for that purpose. Sport fishermen and game enthusiasts provide all of the money that goes into the administration and management of those resources, but the commercial people do not. Game and sport fisheries management, therefore, is relatively well financed. I will say this to you fellows in the Southeast, that you are a little bit behind the parade in many states. I have found that where a good program is established, where it is sound and producing results, the sportsmen are willing to finance it, and in state after state where such a program has been projected and gone long enough for them to see results, they have gone into the legislatures to get the fees raised to obtain money to make the program go faster. With the increasing human population, increasing hunting and fishing demand, and increasingly intensive land use, we are going to need more money rather than less.

License fees in this general territory are below the average, and many more people are not required to buy licenses than is the case in most western and northern states. For example, there are a number of states in the south that do not charge a cane pole fisherman a license fee. Only fishermen having a rod with a reel on it are required to buy a license. Now, the fellow who fishes with a cane pole is often just as good a fisherman as the other fellow and may catch more fish. He should pay his share of the maintenance and management of that resource along with all other citizens. Other categories of people are exempt in some states, and license fees are low compared to many of the most progressive states. In other words, many people are getting a free ride or a cheaper ride than they are in many other parts of the country.

However, when compared with the management of any other natural resource, we have relatively adequate financing for sport fishing and wildlife management. Where money is used to pay political debts, there is too much money already, that isn't doing fish and wildlife very much good. Unfortunately it's still true that too many Governors look upon the fish and game funds as a personal fund to pay off the guys who supported them in their campaign for election. That from a conservation standpoint is a lousy way to spend fish and game funds. I don't even think it is good politics. The best politics in managing one of these resources is to do a bang-up job. There are smart Governors who have found that out, but there are still a lot of politicians in need of similar education.

How do we get continuity of personnel? States that have it provide some sort of a merit system by which men are selected not because they voted right or because they were a friend or relative of somebody, but because they were able to pass an examination that measured their knowledge and intelligence. Every state that is going ahead has some sort of a merit system. They also have adequate salaries, not only to get but to keep good men. The states that do not have adequate salaries act, in effect, as training schools for those who pay reasonably good salaries for competent people. The states that are paying for the training of men are the real losers, when they leave to accept better jobs elsewhere. Some individuals stay for various personal reasons, but they are quite human, and where offered twice as much money as they are being paid, they are very apt to take it. I would like to point out that given a competent man, the longer he stays on the job, the better he knows his people, his territory, his wildlife problems. He can grow with his work and become more and more valuable if he has a chance.

Continuity of program comes from a combination of two things: first, a competent staff who know the state, who are able to develop a coordinated program, and sell it to the Commission. This is one of the big advantages of this staggered term idea for commissioners. Those commissioners have a chance to learn, and then they have a chance to serve long enough to be of some value. A good commissioner should, of course, be reappointed. Very often that happens. All too often it does not happen, but most of the appointees become good commissioners. I have seen men put on commissions with the purpose of disrupting it for political reasons and have as their knowledge of the department and its program grew develop into the most dependable champions of that program.

It is possible to have a good program. It is possible to keep it going long enough to do some good, and that is one of the things I want to emphasize. A program that keeps changing directions, where there are limited funds and personnel to do the job, never gets anywhere. All programs may need to be modified as new knowledge becomes available, but the basic objectives of a program should not be shifted until it has operated long enough to produce some results. There isn't a man in this room who does not know something that would be of value if it could be widely applied to the lands and water of his state. Collectively, we know many things that would be advantageous to wildlife and fish if we could apply them on a wide enough scale. The only known way of securing widespread application is to keep at the same type of a program long enough to let it produce results.

I am not going to talk about the various tools that are used, but I did state that one of the things needed was adequate authority. Adequate authority has to be given by the basic law. Without that, a commission or conservation department of any kind is hopelessly handicapped. Adequate authority means not only authority to make regulations and enforce them, but the authority to buy land, to develop waters, to develop habitat, to get information, to do this basic research Dr. Cottam was talking about. All of these efforts are imperative in this day and age.

Back in the colonial days when there was always new land and always wilderness just over the skyline, perhaps it was sufficient to have control of the hunting and fishing effort. It did not prove so in many cases. The time has long passed when any legislature can devote enough time to fish and wildlife problems and have enough knowledge of what the situation is today to do an adequate job of regulating and managing that resource. It has to be done, not on the basis of what fish and game conditions were like twenty years ago or within my memory, but what is the condition today? What kind of a crop do we have? What can we do with it? These questions must be answered on the basis of today's information, not the prejudices and memories of men who are not spending full time in the field. In other words, more and more it is becoming a professional job. It must be—just as the management of other natural resources must be a professional job.

Now, there is nothing mysterious about a wildlife biologist except that he is willing to work for less money than most other people are in their chosen professions. A man who goes into this field as a life work must have a basic interest in it. If he gets through with his college training, he usually has what it takes from an intellectual standpoint, and then he has to work at it, and that is the difference. I do not care how smart a man is, how brainy he is, how much interest he has, if he cannot spend the time working with the wildlife, knowing what is happening to it, not only during the hunting season but all year-round, he is not going to come up with the answers to the problems that we are facing today, and the answers we have for some of them are not going to be adequate ten years from now. We need to grow and to develop new techniques. We will do that by putting trained men on the job and finding better ways to do what we are now doing, and new ways to meet some of the problems that are coming in the years ahead.

To be sound, wildlife management must have stability; it must have continuity; and it must have flexibility. The methods and the basic laws that I have mentioned are the ones that are securing the best job of any devices discovered. Maybe we will find a better way and, when we do, I will be the first one to be shouting for it. The techniques that we have developed, the

management methods, and basic laws are the best that we have today. To the extent that they are employed conscientiously and intelligently, you will find good management. Where they are not applied, you will find less adequate management, and in the states where the laws are still made by the legislature, you will usually find one heck of a mess.

I was asked by the director of one department where I was just finishing a survey to come and go hunting and fishing in his state. I replied, "Why, I wouldn't do it, unless I had a game warden on one side and a lawyer on the other, to be sure that I didn't violate some of the laws that you have on your books." I don't believe it would be possible for anyone to go into the field, no matter how conscientious he was, without violating some of the old, obsolete laws that still were in effect. I have been in states where it was legal to fish with one kind of a gear on one side of the stream that was a county boundary, and illegal to fish with the same gear from the other bank, although you could throw the line across the stream anywhere you happened to be fishing. There are many absurd laws, but I think one of the choicest was one found in New York State. Their basic law at that time protected all fish, mammals, birds, reptiles, and amphibians unless a species was specifically excepted. Another section of the law stated that it was a misdemeanor for anyone to disturb any of the creatures that are protected by the law of this state while on their breeding, feeding, or resting grounds. Now, just how you could go hunting or fishing, or even go for a walk, without violating that law, I will leave to you.

Too often that is the kind of thinking that becomes law when regulations are made by a busy legislature rather than by an informed management. We need much less of the first and much more of the latter.

Thank you.

## **SOME WILDLIFE RESEARCH PROBLEMS OF THE SOUTHEAST**

By CLARENCE COTTAM

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### **RESEARCH IN INDUSTRY**

Our atomic age is one of science and research. Industry already has learned that sound and competent research is a major necessity. Two world wars have demonstrated that survival as well as political and economic security are dependent upon it. The United States currently is spending five billion dollars a year for research, or more in one year than during its long history from 1776 to 1933. Furthermore, our industrial research effort is increasing about 10% to 12% a year despite an average increase of only 3% in our gross national products.<sup>1</sup> Research has added a dynamic new force to our national economy by creating new products which in turn make possible new uses and new markets.

Some 3,000 United States companies today have their own research facilities and employ more than one-half million research workers. New research plants and laboratories are springing up almost as fast as new factories. The larger chemical companies such as Dow and Monsanto, estimate that from 30% to 40% of their 1956 sales came from products developed by research during the past ten years. A large oil company<sup>1</sup> has concluded that for every dollar invested in research they ultimately receive five dollars in gross return. Large corporations often spend from 1% to 6% of receipts on research. DuPont's huge research budget of some \$70 million averages about 3½% of sales.

Not all research pays directly. DuPont's chemical department estimates that 1/3 of the studies end in "laboratory flops"; 50% are successful in the laboratory but prove impractical for economic production; less than 10% goes to a manufacturing division for development and only a fraction of this ever goes into production. Still their research pays big dividends.