

fish are soon swept downstream where they apparently recover completely. The chemical factors quickly improve as the water passes over the first riffle. To guard against loss, trout are never stocked near the dams during the fall turnover period.

The future of the Bull Shoals Dam and Norfork Dam tailwater trout fishery is dependent upon regular releases of cold water from the bottom stratum of the lakes during the summer months and substantial annual stocking of fingerling trout.

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LAW ENFORCEMENT SESSION

THE ENFORCEMENT OFFICER'S PLACE IN THE TECHNICAL PHASES OF GAME MANAGEMENT

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We are living today in a time when human population and land use dynamics are creating drastic changes in concepts of wildlife management. The results can be seen on every hand.

Just a few years ago, the number of hunters and fishermen were so small that anyone going into the field in pursuit of game or fish expected the entire day to be his without interference. Today it is practically impossible to spend such a day without encountering many others pursuing the same sport.

Then too, more and better information with regard to wildlife has resulted because of better trained wildlife personnel in larger numbers. Gone are the days when regulations were based entirely on "cracker barrel" discussions and guesswork. Though some guesswork is still used, due to inadequate information, great strides are being made to find the answers on which to base sound wildlife protection legislation.

At present, the conservation officer daily meets with problems of posted lands; losses of wildlife habitat to drainage, timber removal, urban development and highway construction; and the pressure of more and more people wanting to hunt and fish on less and less habitat.

A few years ago, his one job was enforcement of the game laws, plus perhaps, the sale and keeping of records for hunting and fishing licenses in his assigned district.

You men are familiar with the difference in duties which fall your lot today. To enumerate some of them the conservation officer today:

- (1) Enforces wildlife laws.
- (2) Cooperates with federal agents in enforcing federal regulations, which in most instances, are also state regulations.
- (3) Carries on public relations programs consisting of contacts and talks with schools, sportsmens groups, civic clubs, radio and television programs, exhibits at fairs and by personal contact with individuals.
- (4) Cooperates in wildlife surveys.
- (5) Assists in operation of public managed hunting and fishing areas.
- (6) Assists private landowners with enforcement of trespass laws.
- (7) In some cases, enforces water safety regulations, and

(8) Attends regular training schools where he picks up better knowledge of wildlife management problems, enforcement techniques and court procedure.

Now I have seen and heard of instances where discord, and jealousy existed, and even active smear campaigns occurred between law enforcement and technical men in some states.

Why is this? I am convinced it is due to a lack of understanding one of the other, with regard to the importance of enforcement and management in the overall picture of conservation.

Actually, when an officer speaks of "technician" in a derogatory manner he is, in one way, talking about himself. According to the dictionary a technician is a "specialist" and a "wildlife technician" is a "specialist having to do with the practical as is to be found in resolving practical biological problems."

In the case of a competent conservation officer, he is a "specialist" or "technician" in enforcement, law, public relations or whatever else he has mastered to a fine degree. He simply goes by another name.

In present day game management, we are faced on all sides with the need for surveys—surveys of wildlife populations, habitat, hunters, fishermen, kill and creel samples. Why are these necessary?

Let's take waterfowl surveys as an example. What are the figures obtained good for? Here are some of the objectives of this job:

(a) Furnish factual information on the status of the total waterfowl population and on individual species. While we all know it is impossible to actually count ducks and geese, it is generally recognized that trends can be established from year to year. Until a better method is devised for censusing the continental waterfowl population this inventory will probably continue. Certainly it is a far cry from the guesswork and "barbershop" conclusions which prevailed in the past.

(b) To determine migration patterns and their relation to weather, habitat conditions, hunting pressure and timing, in various states, of peak populations. On such information hunting regulations are based so that peak populations occur within season frameworks.

(c) To measure effects of habitat destruction, or creation on population movements. Drainage, industrial development, reservoir construction and other human interference can, and do, exert tremendous influences on when, where and how long waterfowl utilize our wetlands. For example, if 100,000 ducks annually use a marsh but after drainage, only 5,000 are found each year, a measure of the damage is available because surveys have been run. Also when a new management area is created, knowledge of waterfowl use prior to development serves as the basis for measuring the success of techniques used.

In conducting all kinds of surveys the part played by cooperating state personnel is extremely important for the following reasons:

(1) Any survey, to be statistically sound and accurate must be based on an approach which calls for representative sampling of the habitat used by the species in question. For this reason random selections must be made, which, when integrated in one report, will cover every kind of area in its proper relation to species use—thus, giving "representativeness." The relatively small staff of the Bureau cannot possibly reach and cover many of the areas so selected. The state conservation officers and biologists are numerous and widely located and for this reason have easy access to selected areas. (For example, the random dove call-counts made each year.)

(2) In surveys, such as the annual waterfowl inventory, where complete coverage is necessary in a very short period of time, the tremendous area which must be covered precludes any possibility of full coverage by the few federal employees available for such work. Again the state personnel are the key to a job well done.

I would like to point to one important development which would not likely have been brought about without the volume of assistance that was given by the state employees throughout the nation. This is the discovery, through intensive banding and reporting of band recoveries, that there are apparently three major dove flyways in the United States and in our particular case different manage-

ment of doves east and west of the Mississippi River might be possible without affecting the populations lying across the river in the other flyway. While more work is yet to be done it appears now that such is the case and we may see changes in future regulations based on these findings.

I hope that this presentation has impressed on you men the very great importance of your participation in the technical work which you are called on to do from time to time.

Your careful, unbiased and objective following of instructions cannot be over emphasized. Instruction received often do not make sense to you; however, there is a reason for all of the "silly" approaches requested of you. For instance, in the dove call-count the need for starting *exactly* one-half hour before sunrise is to give comparable data with other routes being run all over the country; also data for the same route run at the same time in previous years. Then too, it has been found that doves call more actively in the first thirty minutes of the count period, reaching a peak at sunrise.

In conducting surveys and other jobs having to do with the technical phases of wildlife management there are some important requisites of the persons doing the job. The following are considered to be the most important:

- (1) A basic knowledge of the kind of wildlife being studied or managed.
- (2) Interest in the species and reasons for the action being taken.
- (3) Sincerity and open-mindedness which will result in careful unbiased reporting or action on the part of the individual.
- (4) Consistency in observations, actions and reporting is very important in order that there be no confusion as to results. This also facilitates preparation of summaries where the final stages call for tabulating great numbers of surveys or other paper work.
- (5) Factual reporting based on observations and not on guesswork or heresay.
- (6) Following Instructions—This is extremely important. Attention to details and exactness in following instructions, no matter how foolish they may sound, will result in more and better usable data.
- (7) Promptness—Often deadlines are set for submission of reports and/or completion of a job. This is not due to some individual's "orneriness" and desire to cause "headaches" but is likely to be based on the absolute need for getting out information or work to meet requirements passed down the line because of weather, wildlife habits or forthcoming action or legislation which must be based on the latest current facts. Failure by even one individual to submit reports or to complete assignments on time can often delay or seriously cripple the value of work done by many others. When legitimate cause for delay is present the supervisor or other person responsible should be notified.

In closing gentlemen, I would like to say that in my opinion, the matters touched on lightly here today, while very important now, are going to become more so as time goes on.

We are faced with diminishing wildlife lands and a burgeoning population. Lands are being posted by the thousands of acres and increased hunting demand will result in even more posting.

Our duties today must change with the demands brought on by these forces.

In the future, we must manage intensively and properly those few acres left for outdoor recreation and while doing so remain open-minded and sensitive to the never ending changes which are bound to follow.

Be prepared to participate more and more in technical and intensive management, for more complexity of our wildlife regulations, for additional responsibilities with regard to trespass laws on private property and a great expansion of the so-called "Put and Take" hunting and fishing system.

Thank you very much for your attention.