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A PROPOSAL FOR A REGIONAL LAW ENFORCEMENT RESEARCH PROGRAM

by

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ABSTRACT

Despite the fact that approximately one third of the state wildlife agency personnel and funding is invested in law enforcement, scientific law enforcement studies are comparatively few. A regional program of law enforcement research, to be located at Virginia Tech in Blacksburg, Virginia, can coordinate projects, allow publication of results in many forms, avoid duplication of research projects, and answer more questions for less money in a joint effort than can individual states. The success and benefits of this program relies on funding by all states, since all states will benefit from this research. The program will enhance ideas and open communication between researchers and wildlife law enforcement agencies. With this proposed system of jointly funded research, states can save money in the long run, make great interactive advances, and achieve regional leadership in a new, vital, essential dimension of modern wildlife resource management.

The wildlife resource and its management can be seen as an interaction of three basic components: wild animal populations, their habitats, and man. The word "resource" implies use by man. The human side of the wildlife management triangle is very real, vital to sound management, extremely difficult to manipulate, and often neglected or deferred. Through scientific research, wildlifers have learned much about populations and habitat. They can predict with great accuracy how many deer an area can support, whether it is a healthy population, and the effects that certain habitat changes will have on the herd. The same cannot be said about the human side of this problem, such as the effect of illegal kill on a deer herd's dynamics or how deer hunters and nature lovers view the resource.

Probably the most important single aspect of this third and underdeveloped component of wildlife management is the wildlife law enforcement field. Of all state fish and wildlife agency employees, 32.3% are in law enforcement. A total of 5,800 men, annually use 27.4%, or 72 million dollars, of all state fish and wildlife agencies' budgets in law enforcement activities (Morse 1972). In spite of this investment of manpower and funds, scientific studies dealing with wildlife law enforcement are embarrassingly few. It is not profitable to spend time speculating why this is so. The important fact is that few studies in this area exist.

It is well understood that laws and regulations are major techniques for accomplishing good wildlife management; it is often easier and faster to obtain a wildlife management goal by manipulating laws than by improving habitat. Balance, not a substitute, is required; wildlife law enforcement must be rationally integrated into an optimum statewide wildlife management strategy.

Wildlife laws and their enforcement are important functional aspects of a quality, balanced wildlife management program, with a definite effect on the resource, the user, and the benefits derived from the resource. Because of the great amount of money and manpower consumed by wildlife law enforcement agencies, it is important that the agencies know what they are presently getting for their investment and what can be done in the future to increase their dividends (Giles et al. 1971).

Research into the goals, strategies, effectiveness, and impacts of wildlife law enforcement is vital and justified. In these inflationary times, it should be unheard of to spend money without knowing exactly why it is being spent and what benefits it will bring. Law enforcement research will be able to answer important, neglected questions, and improve cost-to-benefit ratios and agency efficiency and effectiveness.

To make maximum use of limited monetary resources to be devoted to research in the wildlife law enforcement field, the creation of a major program of wildlife law enforcement, similar to the Institute of Statistics at North Carolina State University, would be invaluable. Within the Department of Fisheries and Wildlife Sciences at Virginia Polytechnic Institute and State University the seed of such a program has now sprouted. There are many reasons for developing this program at Virginia Tech. A long term effort, with research projects built on the findings of previous projects is now possible. A program will allow interchange of ideas between professors, field men, and graduate students working on various studies, and will allow publication of results in research bulletins, books, and monographs, in addition to graduate student theses. Duplication of research efforts, a waste of time and money, can be avoided. Pooled investments in general techniques, methods, and systems will allow more to be accomplished than by individual states. Qualified students interested in wildlife law enforcement can be attracted to a common area, thus better utilizing their talents and efforts, and once again, avoiding duplication. Virginia Tech is an excellent location for this program. The university has the library and computer facilities essential for this type of research. The Virginia Cooperative Wildlife Research Unit is headquartered at Virginia Tech, providing a base of tradition, permanence, and a wide diversity of means for funding to meet various private and public needs. The Department of Fisheries and Wildlife Science is staffed by a group of eight professors and cooperators and has over 30 well-qualified graduate students, some of whom may assist with, coordinate, and undertake these research projects. Dr. Robert H. Giles, Jr., a pioneer in

the area of wildlife law enforcement research (Giles 1971, Giles et al. 1971) has a long standing interest in this field. He has supervised several wildlife law enforcement research projects and is currently supervising another one. Thus, he has the experience and interest to lead a program of this nature.

Dr. Giles' first student in wildlife law enforcement, James Vilkitis (1968) at the University of Idaho, studied the magnitude of poaching among Idaho's big game herd. After making the necessary arrangements with that state's law enforcement branch, he simulated the poaching of deer and elk. He proposed that the number of times that a game poacher "simulator" was caught or reported was, to the number of times he simulated poaching acts, in direct proportion to the number of arrests or reports statewide was to the number of actual poaching incidents. He calculated that 2424 big game animals were killed in the state, with a field detection by wardens of 1.1%. Using the formula Vilkitis developed and applying it to Virginia, the minimum estimate of illegal deer kill was 50,758 in 1970. Additional work was done on the psychology of the violator.

Under a research grant from the National Rifle Association, Michael Kaminsky undertook a second wildlife law enforcement project with Dr. Giles at Virginia Tech. This recently completed study (Kaminsky 1974) analyzed deer spotlighting in Virginia. The idea was that if it were known when and where most spotlight poaching violations are likely to occur, what type people are involved, and what the average weather conditions are, it may be possible to maximize the chances of apprehending deer poachers. Thus, patrol strategies can be optimized to be at the right place at the right time, with the probability of wardens "winning" more in the long run than they will using present techniques.

Mr. William Conlin has developed a preliminary computer simulation of deer poacher and agent behavior using techniques of optimum military searching strategies. Although not published, this technique provides us confidence that such studies can be performed and can provide useful insights into the nature of law enforcement problems and their solutions. A current study underway at Virginia Tech is being conducted by the junior author and deals with the setting of a clear, concise list of objectives for state wildlife law enforcement agencies. Unless a program's goals are clearly defined, effective strategies and plans cannot be developed. An agency rarely knows how well it is accomplishing something unless it knows exactly what it is supposed to do. Agencies may have rough goals, but they are rarely clearly defined and analyzed. Once these goals are established, in clear, precise, and measureable terms, the actions taken by the agency to satisfy them can be evaluated. It may well be that some current activities by wardens are not achieving important goals. In some instances it seems that well intended efforts may produce adverse results. In addition, once objectives are set, the efficiency of the law enforcement agency in meeting these goals can be determined as well as cost-to-benefit ratios. Eventually, guides can be developed to improve effectiveness, reduce expenses, and make limited manpower go further. This project has fundings by the National Rifle Association, the Virginia Commission of Game and Inland Fisheries, and the American Forest Institute.

Additional continuing funding is necessary if useable research is to be accomplished. There are many projects that need to be investigated. One area to investigate would be the effect of poaching on the population dynamics of various wildlife species, such as deer, grouse, squirrel, bear, and rabbit. Computer simulation would be a useful tool in accomplishing this project. Once a list of goals is developed and refined, laws that are now on the books can be examined to determine which laws are not contributing to the realization of these goals. The law enforcement agency can gain a leadership role in season setting as they ask the questions of "what will be the consequences...?" and know the answers based on their simulations. It provides them a forceful and rational entry into the regulation-making process.

Studies must be done on the psychology and interactions of game wardens and law violators, and on the public view of game violations. Other areas to research are the relation of wildlife violations to social conditions, such as factory strikes, and changes in pay levels or general living conditions; the prevention of woodland vandalism and hunter vandalism of private and public property; studies of non-game laws and enforcement, including rare and endangered species; more studies on the extent and influence of poaching, say of waterfowl; the examination of laws and regulations to see if they are biologically sound; and the possible relationships and parallels between game law violations and "petty" or "no respect" law violations, such as pornography and traffic offenses. The numbers and kinds of potential research projects in the field of wildlife law enforcement are wide open and barely examined in comparison to other wildlife phenomena.

In addition, there are needs for developing computer based systems to collect, store, synthesize, and provide assistance for decision making in state and federal agencies.

Just as one state alone would not benefit from such research, but would release its findings to all other states for improvement of their law enforcement agencies, so must all states and agencies co-operate in such research efforts. The need for funding has previously been mentioned. A few organizations have delegated funds for preliminary research, but the load cannot be carried by just a few groups. More agencies willing to fund research projects at a low level will enable great group advances, far more rapidly than any state tackling the problem alone. States will certainly save money in the long run, as well as gain the prestige of supporting research in a new, relatively unexplored field that is vital to wildlife management. A joint effort is required if major accomplishments are to be made. Such an effort requires not only money, but also ideas, reports, agency data and statistics, and open communication. Perhaps as in no other recent enterprise, if all will contribute, everyone will benefit.

We are almost halfway through the 1970's, with rapid and startling changes in population growth, ideas and beliefs, general crime rates, land uses, energy use and patterns, and industrial growth, all creating new problems and challenges. One of the basic challenges of this decade to the fish and wildlife agencies is to participate in solving these problems, responding to them rationally, maintaining fish and wildlife, and providing to the public satisfactory fish and wildlife programs (McCormick 1971).

To meet these changing times, we need new concepts. We can no longer rely on old ideas and rules of thumb. For example, there are those who feel that the number of convicted violators is a failure of the law enforcement system, not a measure of success. It may be that in the future, wardens will rely to a great extent upon warnings to violators, particularly those who are in ignorance of an obscure law or commit a minor violation. Such acts are less expensive for an agency than convictions, and may lead to better relations between sportsmen, agents, and the wildlife resource. This is another idea to be tested, not to the extent of getting rid of all arrests and convictions, but deciding in which cases a warning would be more valuable.

J. B. McCormick (1971), Chief of California's wildlife law enforcement branch, has said that "the era has passed that permitted law enforcement management based on intuition, poorly analyzed data, dimly remembered experiences of the past, and planned activities which satisfy only the individual. Law enforcement administration of the 1970's will be increasing its capacity to find the causes of violations rather than to seek only increased capacity for violator apprehension and control." The way to new knowledge and increased effectiveness is research. The path to research is funding, interest, and cooperation in a dynamic program.

There exists a tradition and pattern of cooperative endeavors among the southeastern states. Our proposal is based on that history of success, the ecological principles of interaction, and the idea that the sum may be greater than the parts. It is grounded in improving efficiency, improving communication, and building a body of

theory that flows directly into action. It is conceived as applied research to be evaluated in its effectiveness in the time from discovery to application.

Our proposal is simple. It is as follows:

1. Your organization supports a resolution before this conference endorsing the substance and spirit of a cooperative wildlife law enforcement research program at Virginia Tech.
2. Your organization, or each state individually, develops a contractual agreement with Virginia Tech to support at a minimum fixed level of \$3,000 per year a program of research. A minimum support level of \$12,000 per year is required. For this amount, each cooperator would obtain:
 - a. Ready access to all computer programs developed.
 - b. Copies of theses, progress reports, annual reports, and staff papers.
 - c. Periodic (based on number of states participating and sequences of entry into the program) commitment of a project to a particular state's highest priority research need, developed with the program staff.
 - d. Design of experiments and on-going research which will be conducted by agents within agencies. The results will be analyzed and reports written by graduate students or supervised agency staff members.
3. We invite the endorsement, by resolution, of the International Association of Game and Fish Commissioners.
4. Federal and private individuals and organizations should join in this research endeavor. The implications for the federal wildlife law enforcement program are clear. The results are believed to be clearly useful to environmental protection and regulatory agencies. The influence that national wildlife and conservation organizations can have through such a program can be significant—both through acknowledging its importance by active participation and through investing support in the critical formative years.

The majority of such support will be used to employ one or more graduate students in intensive studies on problems that are common throughout the region.

In addition, the program will provide an opportunity for any state to develop, on an individual basis, specific research projects to tackle problems for which they do not have the resources, manpower, or expertise.

This program will in no way duplicate present forensic services available through state or federal laboratories. We shall not become involved in routine hair or blood identification, for example. We would only reluctantly (at this time) approach the problem of developing new detection instrumentation, or new laboratory techniques. Such work may come later after we clear up such problems as:

Calibration of Agent Work Load

Computer Simulation of Effects of Game Laws on Game Populations and Hunter Benefits

A Psychological Profile of Wildlife Law Enforcement Agents, Average Hunters, and Game Law Violators

The Dynamics of Agency Performance Related to Agents Age and Time in Service Deterrence, Prevention, and Apprehension: Comparisons in Cost Effectiveness

Optimum Road Network Search Strategies for Apprehension

Effectiveness of Education in Achieving Agency Objectives

The Implications of Behavioral Modification to Wildlife Law Enforcement

Computer Simulations of Urbanizing Human Populations: Hunters, Agency Budgets, Violators, and Measures of Agency Performance

Importance of Game Laws as Perceived by Commissioners, Agents, Biologists, Hunters, Non-Hunters, and Violators

Computer Systems for Measuring and Managing Agency Performance

Ecological and Sociological Criteria for Permanent Location Assignments of Agents

Optimum Division of Labor Among Agents

The Role of the Courts: An Analysis and Some Prescriptions

The Effects of Fines and Costs on Violation Rates and Other Measures of Agency Performance

Improved Estimates of Law Violation Rates

Effects of Agency Policy on Agent Morale and Effectiveness, and on Violator Attitude and Action

Effect of Sportsman-Warden Contacts on Sportsman Behavior.

This is not a complete list. This sample is presented to suggest the topics and direction of the research possible in an on-going, well-planned research effort. We are sure you can see the usefulness of such results at all levels of state and federal law enforcement. With a united approach, southeastern state wildlife law enforcement agencies can usher in an era of scientific enforcement, performing well and perhaps achieving a leadership role in modern wildlife management.

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THE CHALLENGE

by

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Keeping up with the "Anti-Hunting" threat in the past has been almost as easy as Monday Morning quarterbacking.....Namely because so little has been done by "our side" to counter this menace other than to keep singing the praises of the hunter and what his dollars have done. A recently published study, however, indicates that the hunter himself is his own worst enemy. If you will bear with me a minute let's take a look at the score through the eyes of that "Monday Morning Quarterback, John Q. Public!"

"The big game continues to feature those two archrivals, *our side* and *their side*. *Our side*, continues its usual outstanding defensive game, relying primarily on our three aging but stalwart line-backers.....Indifference - Status Quo - and Apathy. Some credit has to also go to our free safety Sportman's dollar.....While *their side*.....young and inexperienced as they are, continues to vary the attack and pick up those vital yards. Their two most experienced offensive players, Funds and Friends of Animals.....account for a great percentage of their attack.....However, there is a new