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ANIMAL DAMAGE CONTROL RESEARCH--"ARE PRESENT PRIORITIES BASED ON ACTUAL NEED?"

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ABSTRACT: Priorities regarding Bureau of Sport Fisheries and Wildlife vertebrate damage control research are in most cases based on actual need. Need is influenced by economic, political, legislative, and biological incentives. These incentives affect private industry, state and local governments, academia, and the federal government but in different ways. The Bureau of Sport Fisheries and Wildlife has 24 percent of its wildlife research budget invested in vertebrate damage control research. Its programs deal with predators, birds, and small mammals and research programs are problem oriented. Priorities are generally developed within the organization and are usually determined by biological need.

When I was first asked to discuss the question I thought that an answer would be simple and straightforward. However, the more I thought about it, the more I realized that the question is difficult, for it is apparent that some people feel that priorities are not set in relation to needs while others believe they may be. At the risk of disagreeing with some of you, I will say that I believe at least within the Bureau of Sport Fisheries and Wildlife priorities are generally based on actual need. But before I give you my reasons for making such a statement, I think that it would be well to mention each of the major groups or types of agencies that are involved with vertebrate animal damage control research and try to follow that with a discussion of the methods by which priorities are set within the Bureau.

There are essentially four groups that are involved with vertebrate damage control research. Each seeks a common cause, reduction of damage caused by vertebrates, but the motivation behind each group is often different.

1. Private Companies -- The principal motivation for private companies to become involved with vertebrate damage control research is economic. If there is a return for investment private companies initiate research to find methods that can be used to solve problems. Unfortunately, most problems are not of the magnitude that interest private companies. Consequently, research in this area is usually of low priority even though the need may be great for local situations.
2. State and Local Governments -- Motivation for vertebrate damage control research is generally of two types, political and economic. Demand by a voter constituents, because of local damage situations, often generates interest in trying to do something about the problem. Unfortunately, action programs, with little thought for research, often develop and until recently, most research was left to the Federal government or academia.
3. Academia -- Motivation for vertebrate damage control research generally lies in interest generated by a particular individual. Funding is usually from an outside group. Until recently, vertebrate damage control research to many University researchers meant developing methods that resulted in the death of unwanted vertebrates and I think that it is fair to say that research in this area was not as socially acceptable as it is now. Today, this is not the case, for, questions that are being asked deal with much more than screening and developing damage control methods.
4. Federal Government -- Motivation for vertebrate damage control research is political, economic, and legislative. Some feel the overriding motivation is political and I would be the first to admit that in many cases it is. But, I also feel that in recent years knowledge of research needs has had a bearing on the degree and type of vertebrate damage control research that is being conducted.

Since none of these groups have an unlimited amount of funding, they must set priorities not only within their research program, but within total agency effort. In other words, research must be considered along with operations, advertising, etc., and the

amount of research effort is influenced by economic, political, legislative, and biological factors. Each of these factors affects the process of determining the degree of funding for vertebrate damage control research and each has a different degree of influence throughout the process of setting priorities.

Most of my experience has been with the Bureau and my comments will reflect the situation as it exists in that agency.

In the area of Resource Management, the Bureau, in budget year 1974 was allotted roughly \$86,000,000. Of that amount, \$18,000,000 (21 percent) will be used in fish and wildlife research. Of the research funds \$11,000,000 (61 percent) will be used in wildlife research. Of the wildlife research funding \$2,700,000 (24 percent) will be used in vertebrate damage control research. That in turn, will be spent among predator control research \$1,100,000, bird damage control research \$1,000,000 and small mammal damage control research, \$600,000. Each of the breakdowns has been influenced by the four factors I previously mentioned; political, economic, legislative, and biological considerations. I personally feel that the percentage of the total Bureau budget in research is large compared to other needs. Also I feel that of Fish and Wildlife research funds available, Wildlife Research has a fair share and that vertebrate damage control research receives its fair share of the budget.

As you know, the Bureau of Sport Fisheries and Wildlife has one of the largest research efforts in the area of vertebrate damage control, and it appears that the question "Animal Damage Control - Are Present Priorities Based on Actual Need?" is in part directed at the Bureau. I really think that the question should read, "Does Animal Damage Control Research deal with all the Resources that are Affected?" Does the research answer questions related not only to developing methods to be used in preventing damage, but also, questions about the effects of these methods on the environment? Does the research answer questions of population dynamics; does it deal with animal behavior, in other words, does it concern itself with the total problem?

In the past, the Bureau's vertebrate damage control research was often related to a particular species of animal and the damage that it caused. This resulted in research directed toward specific problem solving; developing a method of damage control as rapidly as possible and it often resulted in a narrow research base. Today, we are still problem oriented but the Bureau has attempted to broaden its base and place higher priority on things other than just developing methods of control. Such action has resulted in some criticism regarding priorities. For example, the Bureau's predator damage control research program centers on six objectives: (1) damage assessment, \$240,000, (2) development of damage control methods, \$240,000, (3) population ecology studies, \$170,000, (4) behavior studies, \$100,000, (5) socio-economic studies, and (6) relationship of disease to predator populations. These objectives are treated as projects and are based on the needs of the total problem, not portions of it. The Bureau is actively engaged in the first four which are set by priority as can be seen by the amount of funding in each. I feel that priorities, that have been placed in this area are correct if we are to deal with the total predator damage control problem. I imagine that some ranchers would place higher priority on method developments and some have told the Bureau so, but on the other hand, others prefer that more effort be placed on livestock damage assessment. Hopefully, both will be accomplished.

Are studies within each project in proper sequence of importance? I think that in most instances priorities within a project are proper. Generally, these are placed by biological importance, however, there are times when other considerations may overrule the biological importance. For instance, in the predator damage control program in the area of control methods development, the Bureau is prohibited by administrative decision from researching toxicants in the field. However, in other areas of the predator program there is a free reign to develop the research effort as the Bureau sees fit to do so.

A similar type of system has been developed in the Bureau's bird damage control research program. In this area there are a number of projects, directed toward solving damage control problems that are associated with different types of biological situations. As with predator damage control research, projects deal with such topics as damage assessment, control method development, population ecology, reproductive physiology, etc. When confronted with a crop that is being damaged by birds, the problem is attacked on a broad front in order of priorities that the Bureau sets. Where research is conducted may be determined by political influence. However, if in the Bureau's judgment the problem does not warrant further investigation, it will, if possible, discontinue the research.

In the area of small mammal damage control, priorities at the project level are usually set by the Bureau. That is, once a decision has been made to work upon a specific problem such as damage to forest seeds by rodents, the Bureau determines with advice from interested groups the direction that will be taken to solve the problem. This direction will be primarily influenced by biological considerations. Studies in this area involve damage assessment, methods development, population ecology, etc. Again, as with the other areas, attempts are being made to have a broader-based research program; one that deals specifically with all aspects of the particular situation.

I hope that I made it clear that the Bureau research effort does not concern itself with only control methods development. Even though, the major objective is to develop means that can be used to prevent damage.

It might interest you if I was to rate by priority Bureau efforts in vertebrate damage control research.

In the bird damage control area, as listed by priority, research is being conducted in the following situations: damage to sprouting corn, sunflowers, sweet corn, fruit, small grains (sorghum), rice, roosts, and feedlots. With each of these crops, the Bureau is considering, in order of priority, repellents, frightening devices, toxicants, and reproductive inhibitors. The choice of damage situations to work with has been governed by amounts of damage occurring, political considerations, difficulty that may be encountered in registration, amount of information already on hand, and whether there is a partial solution already available.

In the small mammal damage control research area, problems associated with forest products, crops, and industrial products are being researched. Within each of these groups there are established priorities. For instance in the forest product area, placed in order of priority, are problems regarding damage to seeds, clipping of seedlings, and girdling of larger trees. Crops of immediate importance are grasslands, sugar cane, vegetables, and orchards. With each of these crops, repellents, toxicants, mechanical devices, and habitat manipulation are being considered. Most of the effort is being spent on toxicants and repellents.

What determines priority is the amount of damage occurring, difficulty in securing registration, whether there is a solution already available, and political pressures. What is important is that the Bureau considers all these matters before involving itself with a particular area of research. I feel that our choice of emphasis has been correct.

In summation, I think that there is little difficulty with setting research priorities in vertebrate damage control once the damage problem has been identified. In most instances there is a free reign to cover all aspects of research that is needed as long as the design of the research is to meet a specific need and as long as time frames are placed on the research effort. There is more difficulty in setting priorities regarding what problems to work upon. Whether, for instance more effort should be spent on bird damage to fruit or sprouting corn. There is yet more difficulty with deciding whether more dollars should be spent on birds or rodents or predators. It is at this level that the political consideration has the most impute.

In addition, I think that the danger to the current effort is to overreact to emotionalism which results in over commitment in one area at the expense of another. In my estimation this danger can be averted through a broad based research effort and by maintaining a research administrative staff that is knowledgeable in the vertebrate damage control area. These people can do much to buffer the research program from emotional decision-making that results in shotgun type research. And there lies the rub, for out of necessity, a number of trained research biologists will have to become administrators. Only if this occurs will priorities be based on actual need.