State Wildlife Management Agency Responsibility for Managing Diseases in Free-ranging Wildlife

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Introduction

State wildlife management agencies have primary management responsibility for most free-ranging wildlife in the United States. Given their local nature, their knowledge of resident wildlife, personnel and equipment resources, and their public support, they remain the appropriate agencies exercising primary responsibility for management and research of diseases in free-ranging wildlife. However, in order to fully meet these responsibilities, states need cooperation, communication, collaboration and funding assistance from appropriate federal agencies; whereas, challenges to the traditional authority of state agencies are unnecessary and invariably detrimental. Recent history provides examples of federal-state interactions that have proven counterproductive and examples of highly successful support and cooperation.

Good frameworks for state-federal cooperation for more effective management and research of diseases in free-ranging wildlife exist, and existing state and regional wildlife disease programs provide excellent models. Unfortunately, the full potential of these state and regional programs to

effectively and efficiently manage wildlife diseases is not currently being met. Federal funding to states for wildlife disease work should not be politically driven. It should be based on need, on a fundamental recognition of the independent value of healthy, free-ranging wildlife populations, and on willingness to maintain strong state and regional wildlife disease programs over the long term. States should be encouraged to develop their own local programs, but recognition of the value of coordinated federal guidance and oversight, along with timely state reporting, are appropriate.

Primacy of State Fish and Wildlife Agencies

In the United States, free-ranging wildlife is a public resource, and state wildlife management agencies have broad constitutional and statutory trustee authority for the conservation of the fish and wildlife within their borders. Conservation of wildlife resources implicitly recognizes their fundamental and independent value, and it includes primary responsibility for preserving their health and well-being for future generations. Thus, it is entirely appropriate that state wildlife management agencies remain the lead agencies in dealing with diseases, just as they are in other aspects of wildlife conservation.

State fish and wildlife agencies are the principal front-line managers of fish and wildlife for the benefit, use and enjoyment of the state's citizens and, collectively, the nation. They are responsible for managing diseases in free-ranging wildlife and have in place the local knowledge, personnel, equipment and local public support to address wildlife disease issues, including emergencies. Many state fish and wildlife agencies have disease experts, such as wildlife veterinarians, on staff. Most states now routinely conduct surveillance to detect diseases, to respond to outbreaks and to implement management programs to minimize disease impacts on wildlife and domestic animal populations. In addition, state wildlife agencies commonly maintain management programs to respond to wildlife-human conflicts and to mitigate damage of agricultural commodities.

State fish and wildlife agency authority extends to federal lands (excepting national parks) as well, with states managing the fish and wildlife and federal agencies, as landowners, the habitat. This has been affirmed by Congress through enabling legislation for several federal agencies. Only for marine mammals has Congress given exclusive jurisdiction to federal agencies. Although Congress has given federal agencies, such as the U. S. Fish and Wildlife Service

(USFWS) and the National Oceanic and Atmospheric Administration (NOAA)-Fisheries, certain statutory responsibility for selected conservation programs (e.g., threatened and endangered species, migratory birds, and anadromous fish), states retain concurrent jurisdiction for those species. Even in the case of an extraordinary disease emergency, in which the Secretary of the U.S. Department of Agriculture (USDA), under the federal Animal Health Act of 2002, has broad authority to seize and dispose of any animal, including wildlife, Congress has affirmed and directed that, "If fish or wildlife is affected by control or eradication measures proposed by the Secretary. . .the Secretary will consult with officials of the State agency having authority for protection and management of such wildlife." Congress has further constrained the Secretary's authority, stating unequivocally that, "nothing in this section or in this title should be construed as impliedly vesting in the Secretary authority to manage fish and wildlife populations."

Managing Wildlife Disease Issues: What Has Not Worked

While acknowledging the primacy of the state fish and wildlife agencies, the sheer scope of such diseases as brucellosis, bovine tuberculosis and chronic wasting disease points out the opportunity for, and the necessity of, cooperative, multiagency wildlife disease control efforts. A cooperative approach is far preferable to any single agency attempting to assume sole legal authority over, or unwittingly assuming it has the resources to manage, significant wildlife disease problems (Thorne et al. 2000). Moreover, conflicts of legal authority over wildlife diseases effectively mean that no single agency alone can control them. The protracted and still unresolved case study of brucellosis in the Greater Yellowstone Area provides ample evidence of this (Keiter and Froelicher 1993; Thorne et al. 1997). Attempts by agencies to seize sole control will inevitably cause unanticipated and counterproductive outcomes, such as erosion of crucial public support, unwanted intervention by legislatures and years of draining litigation. Institutional memories of such attempts may persist for decades, further hampering the interagency cooperation necessary to resolve wildlife disease problems. Meanwhile, the spread and virulence of these diseases seems unlikely to pause to accommodate interagency bickering.

Interagency relations concerning the federal Animal Health Act of 2002 provide another relevant example. The sweeping authority granted under this act

to seize and dispose of wildlife has already been noted, as have the checks on that authority that have been afforded to the states, constraints of which federal administrators are well aware. However, these administrators and field staff often operate in very different spheres. And, in the field, it has not been unusual to find both federal and state agriculture agency staff who have interpreted the act as conferring autonomy upon USDA in matters of wildlife disease control. In not so subtle fashion, this subjective interpretation has sometimes been presented to state fish and wildlife agencies as fact, arguably in order to coerce policy decisions favored at the federal level but unpopular, and sometimes untenable, at the state level. "Showing the horse the whip," has created confusion, concern and resentment among state fish and wildlife management agencies. Whether real or imagined, these specters of usurping state authority are enormously counterproductive and can exacerbate any existing mistrust. Given a background where USDA's wildlife disease related activities are already viewed by some as an inherent conflict of interest, considering the agency's primary mission of promoting the agriculture industry, it is understandable how misconceptions take root and grow. An unequivocal acknowledgment on the part of USDA of the fundamental and comparable values of free-ranging wildlife and livestock might help to allay such misconceptions.

Yet another example of what has not worked in managing wildlife disease issues is attributable to the states themselves. The high profile of such diseases as chronic wasting disease and bovine tuberculosis has led a number of states to initiate wildlife disease surveillance programs of varying scope. Not uncommonly, a single person, often a veterinarian, is hired to oversee the program but instead ends up being the entire program. With little management or administrative support, an uncertain budget, and no commitment on the part of state government for its sustained support, such programs frequently have not survived. Although strength and persistence are usually improved by involving other states cooperatively as regional partners, even this does not assure success in the absence of committed and sustained support. For example, the Northeastern Research Center for Wildlife Diseases, in Storrs, Connecticut, was established as a cooperative venture with funding from several state fish and wildlife agencies in the region. However, the lack of full participation by some nearby states, coupled with a lack of federal agency cooperators (Nettles and Davidson 1996), as well as other factors, eventually led to the group's dissolution.

A final example can be drawn from the realm of wildlife disease research. In response to some of the more conspicuous wildlife disease outbreaks, such as bovine tuberculosis and chronic wasting disease, federal agencies have approached state fish and wildlife agencies with funds available for collaborative research. In some cases, however, collaboration has fallen short of its promise with the states providing ideas and data and with the federal agencies consuming those, and all ostensibly available research funding, internally. This can still be productive if the federal agency pursues projects that the states have identified as being of high priority. When this does not happen, scarce research funds may be spent on studies that were unlikely from the outset to produce meaningful results, essentially reproducing outcomes already known with confidence, or studies which, due to design problems, produce no meaningful or useful outcomes. As fuel for driving practical, applied research, there is no substitute for an intimate, local understanding of what is, and what is not, an important question to answer. Far more often than not, such an understanding is likely to originate in the network of field personnel comprising the heart of state fish and wildlife management agencies, a network no federal agency has equaled.

Managing Wildlife Disease Issues: What Has Worked

Though challenges remain, there are also many examples of state-federal agency interactions that have worked quite well, to the benefit of all. The first and most prominent example is the provision of significant and sustained federal funding for wildlife disease surveillance and management programs administered and carried out by state fish and wildlife agencies. A pair of success stories come to mind. First, since the passage of the Federal Aid in Wildlife Restoration (Pittman-Robertson) Act of 1937, proceeds from an 11 percent excise tax on sporting firearms, ammunition and archery equipment have been collected by the federal government and have been distributed to state fish and wildlife agencies as grants to fund wildlife conservation programs. As noted, management and research of wildlife disease issues fit well within the framework of conservation. To that end, Pittman-Robertson monies have been put to good use in many states to supplement state funds or to leverage state funds and to allow their application to other needs.

Second, USDA's Animal and Plant Health Inspection Service-Veterinary Services (APHIS-VS) branch made more than $5.4 million available

to state wildlife agencies in fiscal year 2004 for chronic wasting disease testing of free-ranging cervid populations (Goeldner 2004). This was the second year these funds were available, and all 50 states received funding based on risk. Over 2 years in Michigan, for example, $161,000 in APHIS-VS funds were used to support testing of over 1,400 wild cervids, comprising nearly 12 percent of all free-ranging Michigan cervids tested for chronic wasting disease over the period. By showing admirable flexibility in the development of cooperative agreements with individual states, APHIS-VS funding helped both state and federal agencies better characterize the geographic distribution and intensity of chronic wasting disease and of the attendant risk. In return, it is the responsibility of the states to provide accurate and timely reporting to USDA on the use of these funds.

Another example of fruitful state-federal cooperation has been the provision of federal personnel to assist state fish and wildlife management staff in times of peak need. USDA's Animal and Plant Health Inspection Service-Wildlife Services (APHIS-WS) recently hired 23 wildlife disease biologists to assist the states with disease surveillance, particularly for chronic wasting disease. The Michigan Department of Natural Resources Wildlife Disease Laboratory (MDNR-WDL) incorporated 15 of these biologists into their bovine tuberculosis and chronic wasting disease testing programs in November 2004. Their help was in addition to services provided by four APHIS-VS veterinarians and technicians as part of a cooperative program in place now for nearly a decade. The capable assistance of these federal personnel saved MDNR-WDL an estimated $120,000 in labor costs.

Other success stories can be found in the area of research. When communication between state and federal agencies has been unhindered, abundant problem-oriented, practical research has been generated by federal agencies to address questions generated by state wildlife agency disease control personnel. Bovine tuberculosis in Michigan serves as a perfect case in point. Since soon after the discovery of endemic bovine tuberculosis in the state's white-tailed deer (*Odocoileus virginianus*), a highly productive cooperative relationship has existed between the MDNR-WDL and researchers at the USDA Agricultural Research Service's National Animal Disease Center (ARS-NADC), in Ames, Iowa. By taking the time to ask MDNR-WDL personnel what research questions were relevant for bovine tuberculosis management in wildlife, in a span of only a few years, ARS-NADC scientists experimentally documented both direct (Palmer et al. 2001a) and indirect (Palmer et al. 2004b) deer-to-deer

transmission of bovine tuberculosis, characterized its pathogenesis (Palmer et al. 2002a,d), described aerosol (Palmer et al. 2003) and milk-borne (Palmer et al. 2002b) transmission, set the stage for premortem tuberculosis testing and vaccination of white-tailed deer (Palmer et al. 2001b; Palmer et al. 2004a) and helped clarify the role of raccoons (*Procyon lotor*) in bovine tuberculosis ecology (Palmer et al. 2002c). Every one of these studies produced valuable information that found immediate application in management, policy and public education related to tuberculosis in Michigan. No other group of researchers—state, federal or academic—has come close to producing the advances in our understanding of bovine tuberculosis in U.S. wildlife that have resulted from this highly successful state-federal collaboration.

A cornerstone of the research and management of wildlife diseases is strong state programs under the authority of state wildlife management agencies. Such programs have been established and have been maintained in a number of states, including Alaska, California, Colorado, Michigan, New York, Wisconsin and Wyoming. In 1927, the groundwork was laid for the pioneering U.S. program: "As the value of our wild life resources increases, and as the deliberate management of those resources is intensified, we shall no doubt parallel the previous experience with domestic birds and mammals, and shall have to contend with an unending series of diseases and parasites. . . .Under these circumstances it is highly desirable that Michigan should develop at home, first class facilities for research in connection with the pests, parasites and diseases of . . .wild life forms. It should not be necessary for us to depend upon Washington, or upon laboratories in other states, for the service of this sort" (Michigan Department of Conservation 1928:265–7). With that independent vision, the Michigan Department of Conservation's Wildlife Disease Laboratory was established in 1933, the first of its kind. Although its initial role was to study starvation, nutrition and diseases of Michigan wildlife, within two decades, the laboratory's activities were breaking new ground on regional and national issues. In 1937, the laboratory established a course on wildlife diseases to train veterinary and game biology students at Michigan Agricultural College. In the early 1950s, Michigan became only the second state to experience an outbreak of epizootic hemorrhagic disease in white-tailed deer, and the laboratory was involved in its research and diagnosis (Fay et al. 1956). In 1961, the first large-scale, nationwide testing of wildlife for a USDA program disease was carried out by the laboratory, a survey for brucellosis in mule deer (*O. hemionus*) and white-tailed deer (Fay 1961). Over

16,000 blood samples were processed. The laboratory was also the first wildlife disease program to identify type E botulism in piscivorous wild birds (Fay 1966), the first to publish the use of carfentanil and naltrexone as immobilizing-reversal agents for moose (Seal et al. 1985; Schmitt and Dalton 1987), and the first to describe the spillover and subsequent self-sustaining maintenance of bovine tuberculosis from cattle to white-tailed deer (Schmitt et al. 1997). Since that last discovery in 1995, the laboratory's surveillance program for tuberculosis has, with the help of its state, federal and university partners, tested more than 141,000 free-ranging Michigan deer, elk (*Cervus elaphus*) and noncervids, the largest surveillance effort for a single wildlife disease in North American history. The laboratory has also become a leader in the field research and management of bovine tuberculosis in North American wildlife (Bruning-Fann et al. 2001; O'Brien et al. 2001, 2002, 2004a, 2004b; de Lisle et al. 2002). Less known, but equally important, is the laboratory's original mission to monitor causes of death and illness for the multitude of game and nongame Michigan wildlife species, carried out on an ongoing basis for over 7 decades. This success story was possible in large measure because of substantial and sustained funding for the laboratory from both state (hunting and fishing license fees and general fund monies) and federal (Pittman-Robertson grants) sources. The MDNR-WDL is a perfect example of how state-federal funding partnerships can synergize to the benefit of both and, indirectly, to the benefit of the agricultural community.

A final example of what has worked well in the realm of cooperative wildlife disease programs is the regional cooperative, as exemplified by the Southeastern Cooperative Wildlife Disease Study (SCWDS). Established in 1957 by the Southeastern Association of Game and Fish Commissioners in response to several dramatic mortality events in white-tailed deer, SCWDS quickly became a partnership involving the University of Georgia's College of Veterinary Medicine and 11 southeastern state fish and wildlife management agencies. SCWDS membership now includes 16 state natural resources agencies and the Puerto Rico Department of Natural Resources. Federal support for SCWDS began in 1963 with annual appropriations through the U.S. Department of the Interior and, in 1979, through annual cooperative agreements with APHIS-VS (Nettles and Davidson 1996). Recently, annual cooperative agreements were initiated with APHIS-WS. Currently, a variety of other sources, of both governmental and nongovernmental granting organizations, also provide some funding support.

Primary functions at SCWDS have remained the same for several decades: determining the cause of morbidity and mortality in free-ranging wildlife, defining impacts of disease and parasites on wildlife populations, delineating disease interrelationships among wildlife and domestic animals, and determining the role of wildlife in the epidemiology of human diseases. These functions are pursued within a broader context of working for the benefit of wildlife resources, animal health and public health. The accomplishments of SCWDS in diagnostic, research and instructional activities are far too numerous to adequately treat here. For our purposes, it suffices to say that SCWDS serves as a prominent example of how the philosophy of state-federal cooperation has provided synergistic benefits far beyond what could have been accomplished by an individual entity.

Summary

Good frameworks exist for state-federal cooperation for more effective management and research of diseases in free-ranging wildlife. Existing state and regional wildlife disease programs provide excellent models. Unfortunately, the full potential of these state and regional programs to effectively and efficiently manage wildlife diseases currently is not being met. Federal funding to states for wildlife disease should not be politically driven but should be based on need, on a fundamental recognition of the independent value of healthy, free-ranging wildlife populations, and on willingness to maintain strong state and regional wildlife disease programs that are sustainable over the long term. States should be encouraged to develop their own local programs where funding is adequate, but recognition of the value of coordinated federal guidance and oversight, along with timely state reporting, are appropriate.

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