



United States Department of the Interior
NATIONAL PARK SERVICE
INTERMOUNTAIN REGION
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VIA ELECTRONIC MAIL: NO HARD COPY TO FOLLOW

Memorandum

Date: January 25, 2002

To: Linda Drees, Acting Chief, Biological Resource Management Division

From: Public Health Consultant, IMR-SSO, Santa Fe /s/ Joseph Winkelmaier

Subject: Response to 12/21/01 Memorandum Concerning Oral Rabies Vaccine

Captain Hanley, Director, NPS Public Health Program (PHP), requested that I respond to your memorandum dated December 21, 2001, concerning the public health impact of rabies as it relates to a proposed ORV program that may impact NPS lands. The questions put forth in the memorandum are presented below followed by the PHP response.

It is my understanding that Captain Hanley will be available for the briefing with Mike Soukup on January 29, 2002. If you require further information or clarification of any of the opinions presented below, please do not hesitate to contact me a 505-988-6040.

- 1. With respect to National Park Service Management Policy sections 4.4.2, 4.4.4.2, and 4.4.5.1, does rabies found in raccoons in the eastern United States and coyotes and gray fox in Texas present a public health hazard or, is control in units of the NPS necessary to protect human health?**

Rabies represents a significant public health concern anytime it is encountered in domestic or wild animals. Although only 1 or 2 people die annually from rabies in the United States, it is estimated that up to 100,000 persons die annually from rabies worldwide, and exposures to potentially rabid animals resulted in an estimated 40,000 individuals in the United States receiving postexposure prophylaxis (PEP) a year. As stated in the May 29, 2001 letter from Director Jeffrey Koplan from Centers for Disease Control and Prevention (CDC), rabies continues to be considered a serious public health threat in the United States.

The low rabies-related human mortality rate in the United States is primarily due to the public health infrastructure in place to address this significant threat. The coyote variant in south Texas, which is indistinguishable from that of infected dogs in the border area, has resulted in two documented human deaths. Although no human case of rabies has been documented to date from the raccoon rabies epizootic, there has been a tremendous economic and psychological cost in administering PEP treatments.

The oral rabies vaccine program currently underway is a significant part of the rabies elimination and control plan in the state of Texas and in the eastern United States, and plays an important role in combating rabies inside and outside of NPS lands. Although human rabies is currently under control due to extensive, ongoing efforts of the public health community, it is considered a significant public health threat and every reasonable effort should be made to control the disease.

2. What are the public health implications, both within National Park System units and outside, if the National Park Service does not participate (i.e., allow for use of ORV) in APHIS-WS/state ORV programs?

Rabies prevention in the United States has traditionally focused on the vaccination of domestic animals and postexposure treatment (PET). By 1960, rabies in animals was diagnosed more frequently in wildlife than domesticated animals, with the principal hosts being wild carnivores and bats. The Centers for Disease Control and Prevention (CDC) first conceived of the oral vaccination concept during the 1960's, and the concept has progressed and was first used extensively in Europe.

Outbreaks of rabies in raccoons in the mid-Atlantic and northeastern states, gray fox in west central Texas, and coyotes in south Texas has served to focus prevention measures on oral rabies vaccine (ORV) as a tool for controlling rabies in wildlife. Control or elimination of rabies using ORV is contingent on obtaining a minimum vaccination rate in the reservoir species to eliminate or contain the rabies epizootic. A lack of cooperation among all land managers in the area targeted for an ORV program may lead to reinfection of the reservoir population and may be a significant factor in the ultimate failure of the program. Efforts at vaccination of red foxes in Western Europe has led to the elimination of rabies from large areas of land, but reinfections have occurred from neighboring regions that did not participate in the program.

A lack of participation by the NPS in an ORV program is unlikely to have an immediate adverse health affect within individual NPS units. The high level of awareness, control of domestic animals, and habitat modification tends to minimize risk within the NPS units. However, failure to cooperate with a regional ORV program will have significant negative long-term public health implications and financial costs if it contributes to failure of the program on adjacent lands. The public health impact of rabies outside of NPS lands is clearly demonstrated by the estimated 40,000 PET's administered each year. As long as rabies is endemic in the wildlife population, the risk of exposure exists and NPS units will need to increase educational efforts targeted to the staff and visitors.

The spatial and temporal coverage of the ORV program is critical to achieve the goals of the program. Rabies cannot be eliminated without the danger of reinfection if areas of land controlled by the NPS are allowed to harbor unvaccinated reservoir species.

3. Is there a public health risk to park visitors or employees from the application of and/or presence of ORV baits in units of the National Park System?

The vaccine used in the bait drops is not a live rabies vaccine and therefore cannot cause rabies. There is a very slight risk that an immunocompromised individual may develop vaccinia-mediated disease with exposure to the vaccine through contamination of a flesh wound or actual inoculation. The primary avenue of exposure for humans is associated with dogs recovering the bait. The bait is designed to be attractive to the target population while being repugnant to humans. ORV programs are accompanied by an intensive educational effort in an attempt to inform and educate the population living in the area. Each bait also has a warning and a telephone number that an individual may contact for additional information.

Aerial ORV programs similar to that currently proposed on and adjacent to NPS lands have been in use since the mid 1970's. During that time, only one exposure has resulted in an adverse health impact on a human. A recent study reviewed data from 6 programs with a total of 6 million bait drops from 1992 through 1996. Of the 316 documented bait contacts, 53 had probable contact with the vaccine, and there were no documented adverse health impacts. Due to the increased education and awareness possible in NPS units and the reduced number of domesticated animals that may encounter the baits, the potential danger to park visitors is most likely significantly lower than in the general population.

All available information indicates that there is minimal public health threat associated with use of the oral vaccine in baits. However, public health officials have been advised that they should remain cautious in cases of possible human contact with the vaccine, particularly in immunocompromised individuals.

cc: CAPT John Hanley, Director, Public Health Program, WASO
Dr. Margaret Wild, Biological Resource Management Division