FINDING OF NO SIGNIFICANT IMPACT
AND
DECISION
FOR
SUPPLEMENTAL ENVIRONMENTAL ASSESSMENT
ORAL VACCINATION
TO CONTROL SPECIFIC RABIES VIRUS VARIANTS
IN
RACCOONS, GRAY FOXES, AND COYOTES
IN THE UNITED STATES

The U.S. Department of Agriculture (USDA), Animal and Plant Health Inspection Service, Wildlife Services (APHIS-WS) program completed an environmental assessment (EA) and Decision/Finding of No Significant Impact (FONSI) (USDA 2001) on July 30, 2001 (66 FR 45835-45836, August 30, 2001) that analyzed the potential environmental effects of a proposal to continue and expand the involvement of the APHIS-WS program in oral rabies vaccination (ORV) programs in a number of states. Since that time, APHIS-WS determined the need to expand the ORV program to include the states of Tennessee and Kentucky to effectively stop the westward spread of raccoon rabies. A Decision/FONSI (USDA 2002) was published in the Federal Register (67 FR 44797-44798, July 5, 2002) to document the potential effects of this expanding program. Next, a supplemental EA (USDA 2003a) was prepared as a result of the need to further expand the program to include the states of Georgia and Maine to effectively prevent the westward and northward spread of the rabies virus across the U.S. and into Canada. A Decision/FONSI was published in the Federal Register on July 30, 2003 (68 FR 38669-38670). APHIS-WS, in cooperation with the USDA-Forest Service (USFS), prepared an EA (USDA 2004b) to expand the ORV program to combat the raccoon strain of the rabies virus on National Forest System lands (excluding Wilderness Areas) in the eastern U.S. A Decision/FONSI was published in the Federal Register on February 20, 2004 (69 FR 7904-7905).

In 2004, APHIS-WS determined that further NEPA documentation was needed as a result of: 1) increased federal involvement in ORV programs in recent years; 2) the current proposal to continue or expand federal involvement in such programs in additional states; and 3) the need for expanded monitoring and surveillance in the event contingency actions must be implemented. Thus, APHIS-WS prepared a supplemental EA (USDA 2004a) to include 26 states (Alabama, Connecticut, Delaware, Florida, Georgia, Indiana, Kentucky, Louisiana, Maine, Maryland, Massachusetts, Michigan, Mississippi, New Hampshire, New Jersey, New York, North Carolina, Ohio, Pennsylvania, Rhode Island, South Carolina, Tennessee, Texas, Vermont, Virginia, and West Virginia) and the District of Columbia in the proposed action. Another Decision/FONSI was published in the Federal Register (69 FR 56992-56993, September 23, 2004). APHIS-WS also supplemented the EA (USDA 2006) to cover ORV program activities on National Forest System lands (excluding Wilderness Areas) in the eastern U.S. located in states that were not previously covered. A Decision/FONSI was published in the Federal Register on December 8, 2005 (70 FR 72977-72978). In 2007, a new Decision/FONSI (USDA 2007c) was published in the Federal Register (72 FR 20984-20986, April 27, 2007) that clarified a term used in the 2004 supplemental EA, "contingency actions," to facilitate planning and interagency coordination in the event of rabies outbreaks and clearly communicate to the public the actions involved in the ORV program. In addition, a type of contingency action called trap-vaccinate-release (TVR) was analyzed in the 2007 Decision/FONSI as it was not analyzed as part of the proposed action in the 2004 supplemental EA.

As a result of a February 2007 outbreak of gray fox variant rabies in coyotes west of the original gray fox ORV zone in Texas toward the New Mexico border, and an ongoing outbreak of gray fox variant rabies in western New Mexico and eastern Arizona, APHIS-WS has determined the need to further expand the ORV program to include the states of New Mexico and Arizona to effectively combat the gray fox variant of the rabies virus. The states where APHIS-WS involvement would be continued or expanded include Alabama, Arizona, Connecticut, Delaware, Florida, Georgia, Indiana, Kentucky, Louisiana, Maine, Maryland, Massachusetts, Michigan, Mississippi, New Hampshire, New Jersey, New Mexico, New York, North Carolina, Ohio, Pennsylvania, Rhode Island, South Carolina, Tennessee, Texas, Vermont, Virginia, and West Virginia. The program's primary goals are to stop the

spread of specific raccoon (eastern states), coyote (Texas), and gray fox (Texas, New Mexico, and Arizona) rabies variants to new areas. The EA analyzed the proposed action and a number of alternatives with respect to a number of environmental and other issues raised by involved cooperating agencies and the public.

Based on the analysis in the EA, I have determined that there will not be a significant impact, individually or cumulatively, on the quality of the human environment as a result of the proposed action. This EA is now available in its final form.

Primary Need for Action

If new rabies strains such as those transmitted by raccoons, gray foxes, and coyotes are not prevented from spreading to new areas of the U.S., the health threats and costs associated with rabies are expected to increase substantially as broader geographic areas of the U.S. are affected.

Public Involvement

Several EAs have been prepared previously to analyze the environmental effects of APHIS-WS' continued and expanded participation with an ORV program in the eastern and southwestern United States. Issues related to the proposed action were identified through involvement and planning/scoping meetings with numerous federal (i.e., Centers for Disease Control and Prevention), state (i.e., health, agriculture, and natural resource departments), and local government agencies, academic institutions, and Canadian provincial government agencies (i.e., Ontario Ministry of Natural Resources).

For the previous EA and supplemental EAs, additional efforts to determine further issues that the public might have with this action were made through Federal Register Notices (66 FR 13696-13700, March 7, 2001 and 66 FR 27489, May 17, 2001) and making the EA available to the public for review and comment prior to an agency decision. A letter was sent to potentially affected or interested American Indian Tribes to assure their opportunity to be involved in the EA process. Comments received were reviewed to identify any substantive new issues or alternatives not already identified for analysis. A third Federal Register Notice (66 FR 45835-45836, August 30, 2001) was published announcing the availability of the EA and Decision/ FONSI. In 2002, a Notice of Availability for a subsequent Decision/FONSI was published through a Federal Register Notice (67 FR 44797-44798, July 5, 2002). In 2003, a Notice of Availability for a supplemental EA and Decision/FONSI was published through a Federal Register Notice (68 FR 38669-38670, June 30, 2003). In 2004, a Notice of Availability for an EA and Decision/FONSI was published through a Federal Register Notice (69 FR 7904-7905, February 20, 2004) in cooperation with the USFS to expand ORV program assistance to National Forest System lands, excluding Wilderness Areas, in several eastern states. Also in 2004, a Notice of Availability for another supplemental EA and Decision/FONSI was published through a Federal Register Notice (69 FR 56992-56993, September 23, 2004) to document the expansion of the rabies management program to include 26 states and the District of Columbia. In response to the expanded program area, another Notice of Availability for a supplemental EA and Decision/FONSI was published through a Federal Register Notice (70 FR 72977-72978, December 8, 2005) in 2005 to document additional National Forest System lands within the expanding program. In 2007, a Notice of Availability for a subsequent Decision/FONSI was published through a Federal Register Notice (72 FR 20984-20986, April 27, 2007). These previous analyses and reviews indicated that the ORV program would have no significant effects.

To document the expansion of the ORV program into Arizona and New Mexico and to streamline the NEPA process, this EA has been made available to the public by directly mailing notices of availability of the EA to all people who have expressed an interest in this or similar APHIS-WS activities, by posting this document and notice of its availability on the APHIS-WS website http://www.aphis.usda.gov/wildlife_damage/nepa.shtml, and by issuing a notice of availability in the Federal Register on November 24, 2009 (74 FR 61319-61321). The public comment period was open for 30 days and APHIS-WS received 102 comments. APHIS-WS' responses to the pertinent issues raised in the comments can be found in Appendix A.

Monitoring

The APHIS-WS rabies management program annually reviews its ORV program impacts on target (raccoons, gray foxes, and coyotes) and nontarget species to ensure that APHIS-WS activities do not adversely affect the viability of

wildlife populations. The EA is also reviewed annually to confirm that the ORV program continues to have negligible impacts on humans, pets, other domestic animals, and the environment and to ascertain whether analysis and data provided in the EA are sufficient.

Affected Environment

The area of the proposed action encompasses 25 eastern states and the District of Columbia where raccoon rabies outbreaks currently occur or are expected to occur and Texas where gray fox and coyote rabies strains occur, including National Forest System and BLM lands, but excluding Wilderness Areas. Additionally, due to the recent spread of gray fox variant rabies west of the original ORV zone in Texas toward the New Mexico border with a possible host shift from gray foxes to coyotes and an ongoing outbreak of gray fox variant rabies in western New Mexico and eastern Arizona, program activities will be expanded to include New Mexico and Arizona, including National Forest System and BLM lands, but excluding Wilderness Areas. New Mexico and Arizona would participate in and assist with the ORV program to control gray fox variant rabies. APHIS-WS involvement would therefore be continued or expanded in the following states: Arizona, Alabama, Connecticut, Delaware, Florida, Georgia, Indiana, Kentucky, Louisiana, Maine, Maryland, Massachusetts, Michigan, Mississippi, New Hampshire, New Jersey, New Mexico, New York, North Carolina, Ohio, Pennsylvania, Rhode Island, South Carolina, Tennessee, Texas, Vermont, Virginia, and West Virginia. ORV baiting programs are conducted or are planned to be conducted in most of the aforementioned states. Currently, cooperative rabies surveillance activities are conducted in most of the aforementioned states and would likely be expanded to include all listed states.

Major Issues

Based on the previous ORV EAs and considerable experience by cooperating agencies and APHIS-WS in addressing concerns expressed by the public in past ORV programs, the following issues were identified for consideration in detail in theEA:

- Potential for adverse effects on target wildlife species populations.
- Potential for adverse effects on nontarget wildlife species, including threatened or endangered species.
- Potential for adverse effects on people, pets, and livestock that are exposed to or consume the vaccine laden baits.
- Potential for the recombined V-RG virus to "revert to virulence" or recombine with other viruses and result in a virus that could cause disease in humans or animals.
- Potential for aerially dropped baits to strike and injure people or domestic animals.
- Cost of the program in comparison to perceived benefits.
- Humaneness of methods used to collect wild animal specimens critical for timely program evaluation or to reduce local populations of target species under state contingency plans.

In addition to the identified major issues considered in detail, eleven other issues were considered but not in detail with rationale and further analysis.

Alternatives Analyzed in Detail

Five potential alternatives were developed to address the issues identified above. Three additional alternatives were considered, but not analyzed in detail. A detailed discussion of the anticipated effects of the alternatives on each issue considered in detail can be found in Chapter 4 of the EA. The following summary provides a brief description of each alternative and its anticipated impacts.

Alternative 1. Current Action (the No Action Alternative). The "No Action" alternative is a procedural NEPA requirement (40 CFR 1502), is a viable and reasonable alternative that could be selected, serves as a basis for comparison with the other alternatives and can be defined as the continuation of current management practices (CEQ 1981).

This alternative would involve the continued or expanded use of federal funds by APHIS-WS to purchase V-RG oral vaccine baits and to participate in their distribution under the authorities of the appropriate state agencies in selected

areas of the several states listed in Section 1.2 of the EA, not including New Mexico and Arizona, to stop or prevent raccoon, gray fox, and coyote rabies, and to assist with monitoring and surveillance efforts by capturing and releasing or killing target species for purposes of obtaining biological samples. APHIS-WS assistance could also include participation in implementing state contingency plans that involve target species population reduction or concentrated ORV baiting in localized areas if rabies outbreaks occur beyond the designated ORV vaccination barriers to stop such outbreaks from spreading.

Alternative 2. Proposed Action (the Preferred Alternative). This alternative would involve the expansion of Alternative 1 (Proposed Action) to include additional areas where APHIS-WS would conduct the ORV Program and Alternative 3 (Live-Capture-Vaccinate-Release Only) from the 2004 supplemental EA. The former proposed action included the use of several contingency actions as part of the ORV program; however, it did not address trap-vaccinate-release as one of them. This new proposed action better defines and identifies the types of contingency actions that may be used as part of the ORV program. Therefore, this alternative would involve the continued and expanded use of federal funds by APHIS-WS to purchase V-RG oral vaccine baits and to participate in their distribution under the authorities of the appropriate state agencies in selected areas of the several states listed in Section 1.2 of the EA, including Arizona and New Mexico, to stop or prevent raccoon, gray fox, and coyote rabies, and to assist with monitoring and surveillance efforts by capturing and releasing or killing target species for purposes of obtaining biological samples. APHIS-WS assistance could also include participation in the implementation of one or more of the five state contingency actions as described in Section 1.2.1 of the EA if rabies outbreaks occur beyond the designated ORV vaccination barriers to stop such outbreaks from spreading.

Alternative 3. Live-Capture-Vaccinate-Release Alternative. This alternative would involve the live capture of species being targeted (e.g., raccoon, gray fox, coyotes) followed by administration of rabies vaccines by injection and release back into the wild.

Alternative 4. No Animal Surveillance or Monitoring or Lethal Removal Programs Alternative. Under this alternative, APHIS-WS would provide resources for and assistance in ORV bait distribution only and would not engage in or provide funds for the collection of wild animal specimens by APHIS-WS for monitoring and project evaluation purposes or for implementation of localized lethal removal actions under state contingency plans. The states could still conduct these activities without APHIS-WS assistance.

Alternative 5. No Federal ORV Program. This alternative would consist of no involvement by APHIS-WS in rabies prevention or control in the states identified in Section 1.2 in the EA. Under this alternative, no APHIS-WS funds would be available for purchasing ORV baits. The states would likely still fund ORV programs to some degree without APHIS-WS' assistance.

Alternatives Considered, but Not Analyzed in Detail

Three alternatives were considered, but not in detail, and are described as follows with rationale:

Depopulation of target species. This alternative would result in the lethal removal of raccoons, gray foxes, and coyotes throughout the zones where outbreaks of the targeted strains of rabies are occurring or are expected to occur. The goal would be to achieve elimination of the rabies strains by severely suppressing populations of the target animal species over broad areas so that the specific strains of rabies could not be transmitted to susceptible members of the same species. This could theoretically stop the forward advance of the disease and potentially result in elimination of the particular rabies variants as infected animals die from rabies before they could transmit it to other members of the same species. This alternative was not considered in detail because of the cost and effort that would be involved and because it would also undoubtedly be opposed by most members of the public.

Population control through birth control. Under this alternative, APHIS-WS would provide funds or operational assistance to implement one or more methods to control populations of the target species by reducing reproduction. Such methods could involve live capture and surgical sterilization, the use of chemical reproductive inhibitors placed out in baits or delivery devices, or the application of *immunocontraception* strategies (i.e., vaccines that can cause infertility in treated animals). This alternative was not considered in detail because of the extreme expense and difficulty involved, the greater effectiveness of vaccination alternatives, and because no contraceptive agents are currently registered for use in the target species.

Employ other types of ORV instead of the V-RG vaccine. Under this alternative, APHIS-WS would provide funds to purchase and use "modified-live-virus" (i.e., "attenuated" or weakened strains that have been shown to have little chance of causing rabies in treated animals) or perhaps "killed-virus" (i.e., "inactivated" virus) oral vaccines instead of the V-RG vaccine in ORV baits. This alternative was not considered in detail because some of the vaccines involved have the potential to cause rabies (e.g., "live" virus vaccines), others would be cost-prohibitive to produce in ORV form (e.g., "killed" virus vaccines), and none are currently licensed or approved for any such use in the U.S.

Finding of No Significant Impact

The analysis in the 2001 EA, 2003 supplemental EA, 2004 supplemental EA, 2007 Decision/FONSI, and this new 2009 EA indicates that there will not be a significant impact, individually or cumulatively, on the quality of the human environment as a result of continuing and expanding the rabies management program to New Mexico and Arizona and implementing the proposed action (Alternative 2). I agree with this conclusion and, therefore, find that an Environmental Impact Statement (EIS) need not be prepared. As defined in 40 CFR §1508.27, significance is determined by examining both the context and intensity of an action.

The EA examined the significance of the proposed action in a variety of contexts including the society as a whole, the affected regions, and the affected interests. The proposed action will take place in 28 states (Alabama, Arizona, Connecticut, Delaware, Florida, Georgia, Indiana, Kentucky, Louisiana, Maine, Maryland, Massachusetts, Michigan, Mississippi, New Hampshire, New Jersey, New Mexico, New York, North Carolina, Ohio, Pennsylvania, Rhode Island, South Carolina, Tennessee, Texas, Vermont, Virginia, West Virginia) in the eastern and southwestern U.S. and the District of Columbia. Although the ORV program encompasses regional areas, decisions to implement ORV activities are based on local responses to rabies outbreaks. This localized decision making process ensures the ORV program considers the context and location of ORV activities prior to implementing those activities. As described more fully in the EA, if APHIS-WS decides to implement ORV activities, it uses SOPS and mitigation measures to minimize local impact.

The following was considered in evaluating the intensity of the proposed ORV program:

1. **Impacts that may be both beneficial and adverse.** The ORV vaccine and bait that is used has been found safe for raccoons, gray foxes, coyotes, and other animal species; has a low risk of causing adverse affects to humans; is readily consumed by target animal species; and does not cause bioaccumulation in the environment. A limited number of baits are distributed one or two times per year, thereby minimizing the potential for persons to be exposed to an ORV bait or to bait distributing equipment. The TVR type of contingency action involves the use of a parenteral (injectable) vaccine on the specific animal that is trapped. Injectable vaccines can be used "off label" under the direction of veterinarians to vaccinate healthy wildlife. Thus, vaccinated animals should exhibit no effect other than becoming immunized against rabies. In addition, positive health benefits to the public and target and nontarget animal populations likely occur through decreased risk of exposure to rabid animals.

2. **Degree of effect on public health or safety.** The proposed action poses minimal adverse impact to public health and safety. Of more than 77.7 million baits distributed since 1990, few (10) minor injuries and no significant injuries to any member of the public are known to have resulted from ORV programs. Adverse health effects from vaccinia associated with ORV have been minimal with no significant long-term effects expected.

3. **Unique characteristics of the geographic area such as proximity to historic or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas.** As described in the 2001 EA, 2003 supplemental EA, 2004 supplemental EA, 2007 Decision/FONSI, and this new 2009 EA, no effects to natural or cultural resources were identified for the preferred alternative. There are no prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas affected.

4. **Degree to which effects on the quality of the human environment are likely to be highly controversial.** The effects on the quality of the human environment are not highly controversial. Although there is some opposition to certain methods used to collect animal specimens for monitoring purposes and contingency actions, their use under the proposed action is not highly controversial in terms of size, nature, or effect.

5. **Degree to which the possible effects on the quality of the human environment are highly uncertain or involve unique or unknown risks.** Based on the analysis documented in the 2001 EA, 2003 supplemental EA, 2004 supplemental EA, 2007 Decision/FONSI, and this new 2009 EA, the effects of involvement by APHIS-WS in ORV programs, including contingency actions, on the human environment is not significant. The effects of the proposed activities are not highly uncertain and do not involve unique or unknown risks.

6. **Degree to which the action may establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration.** The proposed action does not establish a precedent for any future action with significant effects.

7. **Whether the action is related to other actions with individually insignificant but cumulatively significant impacts.** No significant cumulative effects on the quality of the human environment were identified through this assessment.

8. **Degree to which the action may adversely affect districts, sites, highways, structures, or objects listed on National Register of Historic Places or may cause loss or destruction of significant scientific, cultural, or historical resources.** The proposed activities do not affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places, nor are they likely to cause any loss or destruction of significant scientific, cultural, or historical resources.

9. **Degree to which the action may adversely affect an endangered or threatened species or its critical habitat.** An evaluation of the proposed action and its effects on T&E species concluded that no significant adverse effects will occur to such species, nor will there be any impact on critical habitat for any listed species. Since ORV program inception, significant adverse effects have not occurred to such species or their habitat. In fact, sensitive species may benefit from a reduced risk of encountering a rabid animal and dying from rabies.

10. **Whether the action threatens a violation of federal, state, or local environmental protection law.** The proposed action is in compliance with all federal, state, and local laws imposed for the protection of the environment.

Decision

I have carefully reviewed the 2001 EA, 2003 supplemental EA, 2004 supplemental EA, associated Decision/FONSIs, this new 2009 EA, and the input resulting from the public involvement process. I believe the issues and objectives identified in the 2001 EA, 2003 supplemental EA, 2004 supplemental EA, associated Decision/FONSIs, and this new 2009 EA would be best addressed through implementation of Alternative 2 (Proposed Action). Alternative 2 is therefore selected because it offers the greatest flexibility in achieving effectiveness while minimizing cumulative adverse impacts on the quality of the human environment with respect to the issues raised for consideration in this process. The APHIS-WS program will implement the proposed action as described in this new 2009 EA and in compliance with all applicable mitigation measures listed as components of standard operating procedures in Chapter 3 of the EA.

For additional information regarding this decision, please contact Dennis Slate, National Rabies Program Coordinator, APHIS-Wildlife Services, 59 Chenell Drive, Suite 7, Concord, NH 03301-8548; phone (603) 223-9623.

William H Clay

William Clay, Deputy Administrator
APHIS-WS

Date 1/6/09

APPENDIX A

RESPONSES TO COMMENTS

One hundred and two comments were received regarding the draft EA. One hundred and one of the commenters were either wholly supportive of APHIS-WS' proposed ORV program; were supportive of the program, but had further questions or concerns; or were supportive of ORV and TVR methods, but remain opposed to any lethal methods. One commenter voiced suspicion of the ORV program and disapproval of APHIS-WS' programs in general. This appendix contains pertinent issues raised in the comments and the agencies' responses to each of those issues. Issues raised from the public comments are numbered and in bold text. The agencies' response to each comment follows and is written in plain text.

1. **The overwhelming majority of the comments were from individuals who are supportive of OVR and TVR programs, but do not support lethal population control methods. Additional comments suggest that removing populations of animals opens up new niches for adjacent animals to move in and thus exacerbate the problem.**

Many comments expressed concern over government sponsorship of lethal control campaigns or eradication programs to control rabies. WS' proposed alternative involves the continued or expanded use of federal funds to purchase V-RG oral vaccine baits, to participate in their distribution, and to assist with monitoring and surveillance efforts. WS' assistance could also include participation in state contingency plans.

WS is not proposing lethal population eradication programs to control rabies. Section 3.2.1 of the EA discussed depopulation of target species as an alternative considered, but not in detail with rationale. This alternative was not considered in detail because it would be impractical to obtain approval from the many hundreds of thousands of landowners on whose properties the lethal control methods would have to be conducted. The greatest difficulty with population reduction as a strategy for reducing or eliminating rabies is that a high level of effort, on the part of the agencies involved, must be maintained almost indefinitely and would also undoubtedly be opposed by most members of the public (MacInnes 1998). Population suppression can be a challenge to maintain in many situations due to immigration (of other members of the same species from surrounding populations) and possibly compensatory reproduction (i.e., larger litters and greater percentages of females breeding following population reduction) (Clark and Fritzell 1992, Connolly and Longhurst 1975). These factors can mean local populations can recover to their previous levels within a year, thus requiring annual or more frequent suppression efforts to maintain such populations at low levels.

Although it has been theorized that large scale population reduction strategies may create a vacuum effect, a study completed by Rosatte et al. (2006) concluded that recolonization of population reduction areas with raccoons marked in TVR areas was very low. In fact, only 1.8% of the raccoons captured in the population reduction areas of the treatment areas had emigrated from TVR areas outside of the population reduction zones as evidenced by ear-tags. Although raccoons may have immigrated from areas beyond the treated zones, substantial immigration is unlikely, because generally raccoons are fairly sedentary and have home ranges of about 4 km^2 and movements generally <50 km (Rosatte 2000). In summary, there was no mass exodus of marked raccoons from TVR areas into population reduction areas during the 1999-2000 study (Rosatte et al. 2006).

Temporary localized population suppression activities could be conducted in an integrated program of ORV used as part of the proposed action, but such activities, if conducted at all, would be expected to occur as a part of contingency actions in response to a breach in a vaccination barrier. These actions would be site specific and limited in scope, thus not creating large vacuum areas. Contingency actions, as defined in Section 1.2.1 of the EA, are responses to emergencies. In the event that the targeted rabies strains advance beyond the barriers created by the ORV zones, contingency plans may be implemented by the involved states. Rabies emergencies requiring contingency actions may be categorized as: Type 1) index rabies case(s) that occur well beyond (e.g., raccoon rabies is detected greater than 80 km [50 miles] west of its known current distribution) ORV barriers (likely due to translocation of a rabid animal); Type 2) rabies case(s) that occur just beyond established ORV zones; Type 3)

rabies case(s) that occur where no ORV zone has been created; Type 4) persistence of rabies cases within ORV zones created as emergency treatments (e.g., northeast Ohio); Type 5) rabies hotspots found within the ORV zones that represent a high risk of spreading; and Type 6) aggressive epizootics (large numbers of infected animals in a relatively small area) approaching an established ORV zone that potentially could spread through the treatment area.

Depending on the type(s) of rabies emergency(ies), contingency actions may employ one or more of the following practices:

- Enhanced surveillance, which may include capture and release or euthanasia of target and specific nontarget animals for rabies testing.
- Treatment with increased bait density (e.g., 75 baits/km^2 is considered the standard bait density for raccoons) to ensure sufficient baits for high density of target species or to bolster antibody response under "normal" target species densities.
- Increase baiting frequency more than once/year.
- A trap-vaccinate-release (TVR) program could be conducted for specific targets, primarily canids with high populations such as skunks and feral cats that are known to harbor and transmit rabies.
- Localized target species population reduction.

Additionally, some lethal sampling is necessary to obtain samples in order to determine the presence or possible progression of positive rabies cases and in order to evaluate post ORV serology for canids. Section 4.1.1.1 of the EA discusses the effects of monitoring and surveillance programs on raccoons, gray foxes, and coyotes. This topic is further addressed in the response to comment # 10.

2. A "reduction of local target species" means killing off the wildlife and WS should be more truthful about what we intend to do.

The EA analyzes localized target species reduction as a possible contingency action in response to an identified emergency. Rabies emergencies requiring contingency actions are described in section 1.2.1 of the EA as well as in response to comment #1.

Emergencies may be addressed by one or more contingencies actions including Contingency Action 1 (enhanced surveillance, which may include capture and release or euthanasia of target and specific nontarget species for rabies testing) and Contingency Action 5 (localized target species population reduction) involve the possible removal of raccoons, gray foxes, or coyotes. As discussed in the EA, APHIS-WS and cooperating state and local agencies expect to lethally remove less than 1% of the lowest estimated number of raccoons in all states combined. To date, lethal removal has accounted for less than 0.006% - 0.12% of the lowest estimated raccoon population annually (USDA 2008b, 2007a, 2005, 2004c, 2004d, 2003b). The APHIS-WS rabies management program's lethal removal of far less than 1% of raccoons did not reduce statewide or regional densities of raccoons. Gray fox populations can generally be expected to withstand harvest rates of about 25% or more annually (USDA 2007b). The ORV program in Arizona, New Mexico, and Texas targets coyote and gray fox variants of the rabies virus. The number of gray foxes removed annually by the APHIS-WS ORV program equates to an average of 0.03% of their estimated population (USDA 2009c, 2008b, 2007a, 2005, 2004c, 2004d, 2003b). The APHIS-WS rabies management program's lethal removal of less than 1% of gray foxes did not reduce the statewide densities of gray foxes and, if contingency actions are utilized, lethal removal is not expected to result in an appreciable increase in the number of gray fox taken by the rabies program. Coyote populations can generally be expected to withstand harvest rates indefinitely of up to 60% or more annually (USDA 2007b). The ORV program in Arizona, New Mexico, and Texas targets coyote and gray fox variants of the rabies virus. The number of coyotes removed annually in Texas by the APHIS-WS ORV program equates to an average of 0.13% of their estimated population (USDA 2008b, 2007a, - 2005, 2004c, 2004d, 2003b). The APHIS-WS rabies management program's lethal removal of less than 1% of coyotes did not reduce the statewide densities of coyotes.

As a result of the review of possible impacts to raccoons, gray foxes, and coyotes, the potential for cumulative impacts continues to be negligible. In the absence of the ORV program, it is highly likely that substantially greater numbers of raccoons, gray foxes, and coyotes would succumb to the invariably fatal rabies virus than are removed

during contingency actions or other rabies management activities. These activities are integral to preserving the integrity of the ORV program, preventing rabies spread among raccoons to areas not infected with this fatal virus, and for monitoring effectiveness.

3. Trapping, vaccinating, and releasing is highly stressful and will kill animals.

Species which are targets for a trap-vaccinate-release (TVR) contingency action are captured in live-catch cage traps. WS personnel comply with all applicable state trapping regulations, as well as, the National Rabies Management Program protocol which ensures that all traps are checked, at a minimum, once every 24 hours. Trap placement is designed to keep captured animals comfortable and safe, such as away from bodies of water and out of direct sunlight. Capture animals are released at the site of capture and immediately upon vaccination thereby reducing behavioral and physiological stress resulting from the conditions of captivity. Such methods are consistent with those established by the American Society of Mammalogists (Gannon et al. 2007) and ensure minimal stress on the captured animal. A licensed parenteral (injectable) vaccine, such as IMRAB® 3 (MERIAL LTD), rather than the oral rabies vaccine is then administered to captured animals. After being vaccinated against the rabies virus, healthy target species would be released at the site of capture. Therefore, injectable vaccine use would have no adverse effects on raccoons. Beneficial impacts include bolstering target species population immunity and preventing further rabies spread.

Injectable vaccines, such as IMRAB®3, are killed virus rabies vaccines recommended for the vaccination of healthy pets and other domestic animals (e.g., cats, dogs, horses, sheep, cattle, and ferrets). They contain the same virus strain that is used in the Pasteur Merieux Connaught human vaccine. TVR has been used successfully in various locals in Canada (i.e., New Brunswick, St. Lawrence river region, Ontario, etc.) as part of an integrated rabies management program to eliminate of stop the spread of specific variants of the rabies virus in raccoons and skunks (Rosatte et al. 1990, 1992, 2001).

Although targeted species include raccoons in the eastern U.S. and coyotes and gray foxes in Texas, some nontargets have a propensity for contracting, harboring, and spreading the rabies virus which complicates rabies control. Therefore, some nontarget wildlife species, such as skunks, may be vaccinated if incidentally captured during TVR activities. Captured nontarget animals will be treated with the same methods described above to minimize stress. Healthy nontarget animals that are vaccinated should exhibit no effect other than becoming immunized against rabies. The majority of nontargets would be released at the site of capture, whether vaccinated or not. As described above in Contingency Action 1, nontargets would be euthanized for rabies diagnostic testing, if they appear sick, injured, or are demonstrating strange behavior symptomatic of the rabies virus.

4. How safe is this medicine?

Currently the ORV program utilizes two vaccines. The oral rabies vaccine used is the recombinant vaccine-rabies gylocprotein (RABORAL V-RG®, Merial, Inc., Athens, GA). This vaccine is currently licensed for use in raccoons, and coyotes in the U.S. and Canada and is approved for experimental use in gray foxes. It remains the only licensed oral vaccine for rabies control in wild carnivores in the U.S. (CDC 2000). It has been used extensively and successfully in Europe to combat fox rabies and has been found safe for use in a number of animal species with no known adverse effects. This vaccine is contained in baits which are distributed by aircraft and ground placement, and then are picked up and consumed by targeted species.

There is no possibility of vaccine induced rabies with V-RG because the vaccine only contains the non-infective surface protein of the rabies virus; none of the viral nuclear material (i.e., RNA) which would be required for the rabies virus to replicate is present in the vaccine.

As discussed in the EA, large numbers of raccoons have been inoculated with or have consumed baits containing the vaccine without ill effects, with most being successfully immunized against rabies (USDA 1991, p. 25; Rupprecht et al.1986) without showing adverse effects. Tests showed that the V-RG virus did not invade the CNS or the cerebrospinal fluid of treated raccoons which indicated no adverse effects on the CNS are likely (USDA 1991, p. 25; Hanlon et al. 1989b). Other tests showed that the V-RG vaccine did not cause any lesions or viremia (i.e., presence of the virus in the blood) in tissues sampled from treated raccoons (Rupprecht et al. 1988). These studies, in addition to the absence of reports of adverse effects in free-ranging wildlife in ORV program areas, have

demonstrated the safety and effectiveness of the V-RG vaccine in raccoons. ORV baits containing the V-RG vaccine would thus have no adverse impact on raccoon populations.
Artois et al. (1990) evaluated the safety of V-RG oral vaccine in coyotes and found no evidence of vaccinia virus infections or other complications. Rupprecht et al. (1992a) reported no adverse effects in gray foxes tested. Also, extensive experimental field testing of V-RG vaccine with subsequent collections and necropsies of gray foxes and coyotes for monitoring purposes in Texas have not produced any observed pathological signs of disease or other adverse effects on this species (E. Oertli, TX Dept. of Health, pers. comm. 2001 as cited in USDA 2001). Extensive laboratory and field testing of V-RG vaccine in many nontarget species, including other closely related members of the canid (dog) family (Rupprecht et al. 1992a), indicates virtually no risk of oral baits containing V-RG adversely affecting gray fox or coyote populations.

The vaccinia virus portion of the V-RG vaccine has been recognized as having the potential to cause infections in persons exposed to the vaccine, either through direct contact with the liquid or through contact with the mouth of an animal that has recently ingested the oral vaccine (USDA 1991, p. 39). Because the vaccinia virus used in the V-RG vaccine is the same type of virus that was used in smallpox eradication, although more *attenuated* or weakened, persons who have been immunized against smallpox would likely not experience any adverse reaction to the vaccinia virus, but would likely experience at worst a "booster" in immunity against vaccinia virus. However, the routine administration of smallpox vaccinations was discontinued after smallpox was eradicated. Thus, a large percentage of the population (particularly younger individuals) has not been vaccinated against vaccinia. Vaccinia virus rarely poses much risk of serious health effects – even when it was *directly applied* (via "scarification" or by scratching the skin) to many hundreds of millions of people during smallpox eradication campaigns, the number that developed vaccinia virus-related illness was only a few per million.

More severe complications involving the central nervous system can occur with vaccinia virus and the nature of these complications is generally thought to be allergic in nature (USDA 1991, p. 39). Central nervous system complications occurred at an average rate of three per million among persons vaccinated with vaccinia virus (e.g., to prevent smallpox) with about 10 to 30 percent of those cases resulting in death (USDA 1991, p. 39). Thus, the chance of a person dying from direct application of a high dose of vaccinia virus via scarification would be about 1 in a million cases or less. With ORV baits distributed in the wild, people would run far less risk of being exposed to vaccinia virus or the V-RG vaccine in a way similar to deliberate smallpox vaccinations, but would primarily only run the risk of skin contact by handling broken baits or coming into contact with the oral regions of pets that had just consumed a bait. For that type of exposure, the chance of adverse effects from human infection with vaccinia virus would be far less than 1 in a million.

Another highly important characteristic of the V-RG vaccine is that it is weaker (more "attenuated") than the original parent vaccinia strain used in making it, and this has been proven in laboratory tests with mice (USDA 1991, p. 18-19). This characteristic even further reduces the risk of V-RG vaccine causing vaccinia-related illness in humans. However, persons with immune system deficiencies (e.g., AIDS) run a relatively greater risk of experiencing adverse effects if directly exposed to the vaccinia virus than would persons with normal immune systems (USDA 1991, p. 40; USDA 1995a; USDA *undated a, undated b*). Experiments in mice suggest that immune-deficient people would be at minimal risk of adverse effects when exposed to V-RG vaccine (Hanlon et al. 1997; USDI 1991, p. 41 and Appendix E therein). To aid in further minimizing the potential for adverse effects on humans because of contact with V-RG vaccine, each ORV bait contains a warning label and telephone number advising persons who make contact with baits or the vaccine liquid to call the number for further guidance.

McGuill et al. (1998) conducted a retrospective four-year survey of directors of six ORV programs using V-RG vaccine that were conducted from 1992-1996 to evaluate the potential for human health problems. The programs occurred in Florida, Massachusetts, New Jersey, New York, and Texas. Altogether, they involved a total of 109,276 km^2 (42,181 mi^2) of treated area and a total of nearly six million baits distributed. Human contacts with the baits totaled 316, of which 53 resulted in contact with the actual vaccine liquid. The directors of all programs reported that human contact was minimal and that there were no reported adverse reactions in people exposed to the baits. The authors concluded that, based on their survey, major concerns about public health risks from V-RG vaccine were unfounded.

Out of approximately 76.6 million baits disbursed since APHIS-WS program inception in 1995, only 1128 people reported contacting or potentially contacting a bait (i.e., picking up bait, finding a bait in yard, or removing bait or

sachet from pet's mouth, feces, or vomit - any type of contact with a bait is also defined throughout the document as an "exposure"). This equates to one human exposure per 74,278 baits distributed (0.0013 percent contact cases) (USDA 2008a). In addition, exposure cases were generally insignificant as most involved finding an intact bait. Very few cases involved touching a broken bait, sachet, or liquid vaccine. Furthermore, of the 0.0013 perent of contact cases reported since APHIS-WS ORV program inception in 1995, only two known adverse reactions have occurred (USDA 2004a, 2008a; CDC 2009c).

The second vaccine used by the program is the licensed parenteral (injectable) vaccine, such as IMRAB® 3 (Merial, Inc.). Currently, no vaccine is specifically licensed for this type of use (CDC 2000). However, certain injectable vaccines may be used "off-label" under the direction of veterinarians to vaccinate wild animal species in certain situations (J. Mitzel, APHIS-Veterinary Services, pers. comm. 2001 as cited in USDA 2001a). Injectable vaccines, such as IMRAB® 3, are killed-virus rabies vaccines recommended for the vaccination of healthy pets and other domestic animals (e.g., cats, dogs, horses, sheep, cattle, and ferrets). They contain the same virus strain that is used in the Pasteur Merieux Connaught human vaccine.
Further information on safety studies as well as program data regarding the safety and effectiveness of V-RG can be found in the EA.

5. **I think we all need to see the research that proves this is safe for America.**

The EA contains extensive research and references to document the safety of the program.

6. **Aerial or ground-based shooting of coyotes in order to obtain requisite samples for purposes of monitoring is unacceptable, as is the shooting of gray fox samples. Wildlife Services must take samples for rabies in non-baited locations only by capturing mammals of interest, checking for antibody titers, and releasing negative animals.**

We realize that some members of the public will likely remain opposed the any lethal wildlife removal, however, in regards to managing rabies in coyote and gray fox populations aerial and ground shooting remain the most effective and practical means of obtaining samples. If not controlled, many more coyotes and foxes would suffer and ultimately die from rabies virus infection. Additionally, if not controlled, the advance of rabies viruses would further negatively impact greater portions of wildlife populations, humans, and domestic animals.

Testing for the rabies virus requires brain stem tissue and, thus, requires either the opportunistic collection of dead specimens, the euthanasia of strange acting animals, or lethal removal of specimens in areas with a critical surveillance need. No nonlethal tests for rabies in wildlife exist and, therefore, it is impossible to test for rabies and then release negative animals.

The commenter suggests collecting samples from non-baited locations. Conducting monitoring and surveillance activities in non-ORV baited areas would be impractical and would not provide the necessary serology samples needed to monitor program effectiveness.

7. **Wildlife Services suspects and is killing far too many animals for testing with only a small percentage of these animals testing positive for rabies. Wildlife Services must be more discerning in carrying out its lethal-sampling procedure.**

The commenter made reference to contingency actions which occurred in Ohio, Vermont, and Texas in 2007 during which localized target species population reductions were employed to address specific emergency situations or animals were euthanized for enhanced surveillance. The commenter was concerned that only a small percentage of animals euthanized actually tested positive for rabies. During the Ohio contingency action it was necessary to obtain animal specimens for enhanced surveillance in order to determine the leading edge of the rabies virus in that state. During the Texas contingency action grey foxes were euthanized to maintain the integrity of the ORV barrier and to prevent the rabies virus from spreading to a broader geographic area. In 2006 and 2007 the rabies virus made an unprecedented breach of the Vermont ORV zone and positive raccoons were identified in Quebec, Canada. During contingency action efforts, 63 skunks were euthanized and sampled to better understand the role that they

may have played in the maintenance and spread of the virus across the VT ORV zone.

WS only uses localized population reduction in response to emergency situations. Emergency situations were further defined in section 1.2.1 of the EA. If rabies emergencies were not addressed by ORV programs or by one or more of the contingency actions analyzed in the EA it is likely that many more animals would suffer and die from rabies.

8. **Wildlife Services must limit its lethal-sampling procedure. The EA rationalizes that the number of specific-species animals that Wildlife Services must kill in the name of surveillance and monitoring is negligible in relation to the number killed by all means or in relation to the total populations or to populations required for sustainability.**

   How does Wildlife Services determine the number of individuals of a species that it will subject to lethal removal in order to demonstrate that a variant of rabies is absent from a zone or that enough ORV bait has been distributed?

As discussed in the EA, raccoon populations can generally be expected to withstand harvest rates of about 49% or more annually (Sanderson 1987, USDA 1997j). The EA states that APHIS-WS and cooperating state or local agencies expect to lethally remove less than 1% of the lowest estimated number of raccoons in all states combined. Removal would primarily only occur during implementation of contingency actions that integrate enhanced surveillance and ORV, and may include the need for localized population reduction.

Relative densities, along with age structure and sex ratios, serve as indices to raccoon population status and assist in the evaluation of ORV efforts to contain the spread of rabies in raccoons. APHIS-WS has conducted more than 221 raccoon relative density studies since 1997. These studies indicate that density indices, ranging from 0-70 raccoons/km^2 (average of 12 raccoons/km^2), are well within the documented range of estimates reported in other studies. The national rabies management program has expanded to cover 25 states in the eastern U.S. and, thus, includes many different habitats which support varying raccoon densities. Such habitats include agriculture, forested, urban/suburban, rural, and wetlands. Based on a review of these studies, the rabies management program now defines "low" density habitats as those supporting 0-2 raccoons/km^2, "standard" density as 3-15 raccoons/km^2, and "high" density as $\geq$ 16 raccoons/km^2. To date, 19 studies have been placed in the "low" density range, 144 studies occurred within the "standard" density range, and 58 studies were within the "high" density range. Several of the 19 studies in the "low" density range specifically targeted areas suspected of supporting relatively low raccoon densities (e.g., contiguous northern hardwood, spruce-fir, or coastal pine-oak habitats).

Raccoon density estimates used by WS are considerably lower than what the density studies and literature indicate for the majority of habitats that occur within the states in this program. Conservative population density estimates are used to ensure lethal removal of less than 1% of the population. For program purposes, the national rabies management program determined the lowest estimated mean density to range from 1.5 and 8 raccoons/km^2. Thus, the lowest estimated size of the raccoon population totaled from the 15 eastern states is between 2,004,348 and 10,689,847 raccoons (USDA 2009c). Based on these estimates, lethal removal accounted for 0.01% - 0.05% of the total estimated population or a total of 1,036 raccoons in 2007 (USDA 2009c).

The ORV program in Texas targets coyote and gray fox rabies. Coyote and gray fox populations can generally be expected to withstand annual harvest rates of about 70% and 25% or more, respectively (USDA 2008c). In 2007, cumulative take (private harvest rates combined with APHIS-WS management actions including ORV program) in Texas totaled 11.4% of the population for coyotes and 1.2% for gray foxes, far below the sustainable harvest level (USDA 2009c). The number of coyotes and gray foxes removed by the APHIS-WS ORV program alone equates to 0.08% and 0.02% of the estimates for these populations, respectively (USDA 2009c). Therefore, the cumulative impacts (i.e., monitoring and surveillance, localized population reduction, annual trapper and hunter harvest, other mortality) to both coyote and gray fox populations are negligible. The ORV program continues to have no adverse impacts to the coyote and gray fox densities.

In the absence of the ORV program, it is highly likely that substantially greater numbers of raccoons, coyotes, and gray foxes would succumb to the invariably fatal rabies virus than are removed during some contingency actions or

surveillance and monitoring activities. These activities are integral to preserving the integrity of the ORV program, preventing rabies spread among raccoons to areas not infected with this fatal virus, and for monitoring program effectiveness.

9. *Laws should be passed requiring the dropping of rabies baits in wildlife areas.*

The EA analyzes the effects of APHIS-WS' ORV program and does not propose legislation to enforce distribution of ORV baits. Each of the states involved in this proposed action has a state agency or agencies with authority under state law to approve, conduct or coordinate rabies control programs. APHIS-WS involvement in rabies control in each state has previously occurred and, under the proposed action, would only occur in complete cooperation with the appropriate state agency(ies) and in accordance with state authorities as identified by those agencies.

With regard to ORV programs, it is the various cooperating states that exercise their authorities under state law to propose or approve the distribution of ORV baits onto lands owned or managed by a variety of entities including private persons, federal land management agencies [e.g., USDA Forest Service, National Park Service (NPS), and others], state, county, and city governments, and American Indian Tribes. It is critical to the success of establishing and maintaining ORV barriers and, potentially, to the eventual elimination of targeted rabies strains in many areas, that all lands containing substantial amounts of habitat for the targeted carnivore species are included. APHIS-WS would not be making the decision to distribute baits on the various land ownerships. Those decisions would be made by the states. Additionally, the Wilderness Act of 1964 established restrictions on the kinds of activities that can be undertaken on Wilderness Areas. The proposed action assumes that ORV baits would be distributed under state authorities, consistent with pertinent property rights laws and regulations and would include acquiring permission from public land managers and American Indian Tribes when appropriate.

10. Developers that build in forested areas should be required to help pay for the bait.

The EA analyzes the use of federal funds for the continuation and expansion of ORV program. Analyses of additional sources of funding are not within the scope of the EA.

11. Public citizens should not have to pay for post-exposure shots.

When a person is suspected or known to have been exposed to the rabies virus (i.e. a dog bite, but the dog is unavailable for quarantine; a bat is found in the bedroom of a sleeping person; or a person receives a bite or scratch from a wild animal which is unavailable for rabies testing) they must undergo a series of rabies post-exposure prophylaxis shots. The comment is outside the scope of this EA because APHIS-WS is not proposing to pay for post-exposure treatments.

12. Several comments recognized the effectiveness of ORV and TVR and would like to see the programs expanded to include skunks.

WS recognizes the need for new oral rabies vaccine, baits, and biomarkers effective in vaccinating and marking meso-carnivores including coyotes, red and gray foxes, raccoons, skunks, mongoose, and free-ranging dogs. Currently RABORAL V-RG® is the only oral rabies vaccine licensed for use in raccoons and coyotes and licensed for experimental use in gray foxes. It does not, however, produce significant detectable virus neutralizing antibodies in skunks. Research is currently underway on the development of safe and effective vaccine bait combinations for use in skunks, as well as, all rabies vector meso-carnivores. Jojola et al. (2007) recently published a study regarding oral rabies vaccination bait uptake by captive striped skunks. Early field trials with new vaccines show potential efficacy in skunks. Knowles et al. (2009) recently published the results of a study to determine the safety of another vaccine, ONRAB® (Artemis Technologies Inc., Guelph, Ontario). Safety trials involving target species, including striped skunks, and specific non-target species were conducted. The results of the study indicate that despite use of a relatively high dose of vaccine, no untoward clinical signs were observed. Further, the study concluded that the low rates of recovery of vaccine virus from tissues, feces, and the oral cavity suggest that the likelihood of ONRAB® causing a negative impact on wildlife species is unlikely. Additionally, other vaccines, such as a canine adenovirus (CAV_2) recombinant rabies vaccine (Li et al. 2006) are being explored in captive studies.

13. The baits should be made available to the public to reduce the government's costs. Individuals owning large tracts of land should be encouraged and guided through baiting their land. Wildlife rehabbers should have access to the bait. The denial of vaccine sale to the public may have an effect on feline transmitted viruses.

RABORAL V-RG® is licensed for use in state and federal rabies control programs. It is not available for use by private veterinary practioners or the public. Although RABORAL V-RG® will not harm dogs or cats, the vaccine does not replace conventional rabies vaccines. Only rabies vaccines administered by veterinarians are considered proof of vaccination for domestic pets.

14. Bats are an integral part of our ecosystem and doing a "kill all" method eradicates more than just diseased animals.

WS' ORV programs specifically target raccoons, coyotes, and gray foxes. Control of rabies in bats is not part of the WS ORV program and, therefore, is addressed in the EA.

15. The vaccine should be dropped in large amounts in the spring and fall so that large numbers of each species will take the bait.

WS implements ORV programs and determines effectiveness based on a variety of factors including local food supplies and species biology. Typically baits are distributed at a rate of 75 baits per km^2 for raccoons in the eastern U.S. and 39 and 27 baits per km^2 for gray foxes and coyotes, respectively, in the southwestern states. Most ORV baiting campaigns do occur in late winter/early spring or late summer/early fall in order to take advantage on the above stated factors.

16. This is not a good way to disperse this alleged medicine.

The commenter did not elaborate as to which dispersal methods they were unpleased with nor did they suggest alternate dispersal methods. WS relies primarily on fixed-wing and helicopter distribution, as well as, ground baiting for urban and residential areas. In 2007 alone, WS baited 225,645 km^2 in 18 states combined. WS maintains that aerial distribution is the most efficient and cost effective method of ORV baiting, as described in the EA.

17. Oral Contraception for wildlife should be considered.

The EA did consider the alternative of population control through birth control, but the alternative was not analyzed in detail. Under this alternative, APHIS-WS would provide funds or operational assistance to implement one or more methods to control populations of the target species by reducing reproduction. Such methods could involve live capture and surgical sterilization, the use of chemical reproductive inhibitors placed out in baits or delivery devices, or the application of immunocontraception strategies (i.e., vaccines that can cause infertility in treated animals). This alternative was not considered in detail because of the extreme expense and difficulty involved, the greater effectiveness of vaccination alternatives, and because no contraceptive agents are currently registered for use in the target species. Further analysis of this alternative may be found in section 3.2.2 of the EA.

18. What measures are in place to deal with the virus strains that might enter through carriers by way of Mexico? Are there additional resources set aside from either the U.S. or Mexico to combat such a threat? Is there a contingency plan associated with the introduction of additional strains that could arise from Mexico?

APHIS-WS currently conducts ORV programs in Texas which include monitoring and surveillance in border areas, and ORV programs currently in effect have and continue to address rabies emergence along the U.S. Mexico border. APHIS-WS also conducts enhanced surveillance along the AZ and NM international borders. Additionally, any rabies emergency, which could include confirmed rabies cases beyond an ORV zone or where no ORV zone

currently exists, could be addressed by the contingency actions detailed in section 1.2.1 of the EA. The preferred alternative (alternative 2) will also allow APHIS-WS to implement contingency action in Arizona and New Mexico. Since 2005, APHIS-WS has led an effort with other agencies in the United States, Mexico, and Canada to develop the North American Rabies Management Plan (NARMP) and in 2008 the NARMP was signed by U.S., Mexican, and Canadian official. The NARMP establishes a protocol for rabies management in North America by assessing and defining the needs, priorities, and strategies required to control and eventually eliminate terrestrial rabies. The establishment of a NARMP represents a key step in facilitating a planning processes by which mutual border rabies control and prevention goals and objectives can be identified and better met among Canada, Mexico and the U.S.

19. **The draft mentions that baits will not be dropped on Wilderness Areas. Is there a process to deal with rabies carriers on Wilderness Areas?**

Currently, APHIS-WS does not conduct ORV programs on Wilderness Areas. The Wilderness Act of 1964 established restrictions on the kinds of activities that can be undertaken in such areas. If the need arises, APHIS-WS will work closely with the federal agencies responsible for the management of such lands to ensure that the integrity of ORV zones are maintained. APHIS-WS will only conduct ORV activities in Wilderness Areas after conducting the necessary environmental analysis and after obtaining permission from the USFS Forest Supervisor, BLM State Director, or other official as appropriate.

20. **The Arizona Game and Fish Department provided the following recommendations: "The Department is recommending additional measures be taken in the region of the Mexican Gray Wolf Reintroduction Project in the Blue Range of Eastern Arizona. The Department respectfully requests that leghold trapping in the area of the reintroduction be coordinated with the field team leader so that captured wolves can be sampled, tagged, and collared. Mexican Wolf Reintroduction Project personnel have received training and it is recommended that all WS personnel or contractors using leghold traps in the project area also receive this training. The Department follows guidelines iterated in 2 SOP documents: Trap Preparation and use (MW SOP 14. Trap Preparation and use) and Handling, Immobilizing, and Processing Live Mexican Wolves (MW SOP 21. Handling and Immobilization). It is recommended that these documents be referenced for guidance, especially trap preparation and use. In addition, traps should be set so that a wolf will not become entangled in wire or another hazard, fall into water or off a cliff, or get two feet trapped in two different traps. Traps should be set at distances that will prevent two trapped animals from fighting with each other. Traps should not be set closer than 30 feet to any carcass so that eagles, vultures, condors, and other raptors will not be caught. Personnel should consider the weather and temperature changes in order to prevent hypothermia and heat stroke when scheduling trapping. Traps should be securely staked with wolf sized drags and chains so that a trapped animal will not be able to escape with a trap still attached to its foot. Trap monitors should be used. Trapped wolves should not be photographed."**

The U.S. Fish and Wildlife Service (USFWS) is responsible for the administration of the Endangered Species Act (ESA) and, thusly, is the lead agency responsible for the management of Mexican Wolves. The USFWS issued a 1996 Final Environmental Impact Statement (EIS) and a 1998 Final Rule, Establishment of a Nonessential Population of the Mexican Gray Wolf in Arizona and New Mexico. The Final Rule provides regulations for how the reintroduced population will be managed by the responsible agencies and spells out public rights with respect to human safety and protection of property from Mexican Wolves on private, tribal, and public lands. APHIS-WS complies with both the ESA and the necessary practices and restrictions set forth by the Final EIS and Final Rule.

Additionally, APHIS-WS has signed a Memorandum of Understanding (MOU) establishing working relationships

with partner agencies in the reintroduction of Mexican wolves in the Blue Range. This relationship includes the assignment of a full time employee and additional personnel dedicated to working cooperatively with the primary agencies involved through the Interagency Field Team, the Adaptive Management Oversight Committee, and the Agency of Directors. These primary agencies include the Arizona Game and Fish Department, New Mexico Department of Game and Fish, White Mountain Apache Tribe, USDA-Forest Service, U.S. Fish and Wildlife Service, and APHIS-WS. Activities within the reintroduction area are coordinated on a daily basis with the primary agencies and additional government agencies as appropriate. Further, APHIS-WS assisted in the development of the SOPs mentioned in the above comment and receives formal wolf immobilization training and informal wolf handling training from the USFWS on an annual basis. APHIS-WS will continue to work cooperatively and communicate with the Arizona Game and Fish Department to address their recommendations as appropriate.

APPENDIX B
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