What To Do If You Find One of Our Baits

If you come across a bait, please leave it where you found it. Do not attempt to remove a bait from your pet's mouth; doing so may cause you to be bitten. Raboral V-RG is safe for more than 60 species, including domestic dogs and cats. The vaccine does not contain the live rabies virus.

If you come into contact with the pink liquid vaccine, wash the affected area thoroughly with soap and water and call the U.S. Department of Agriculture's Wildlife Services office at **1–866–4–USDA–WS** (1–866–487–3297) for further information and referral.

WS employees take samples from an anesthetized raccoon. Results of tests on the tissues will reveal whether or not this animal ingested enough rabies vaccine to be protected.

Determining the Effectiveness of the Program

After the baits have been distributed and raccoons have had a chance to find and consume them, WS works with cooperators to measure the success of every ORV campaign. Live traps are set throughout ORV zones with marshmallows, vanilla, sardines, and other attractants used to lure raccoons into the traps.

The traps are checked regularly and affixed with labels to inform the public about WS' trap-and-release program. Wildlife biologists and technicians temporarily anesthetize every captured raccoon so that they can take blood samples and remove the first premolar, a small tooth. Once the effects of the anesthetic have worn off, the biologists release the captured raccoons back into the wild.

Next, WS sends all samples to cooperating Federal and State laboratories, where tests determine the rabies antibody level for each raccoon sample to see if the animal has had contact with the oral vaccine. In addition, WS submits all tooth samples to laboratories for sectioning to determine if they contain a tetracycline biomarker that indicates that the bait was ingested by the raccoon. When tetracycline is consumed, it stains teeth and bone.

Future

WS' NWRC in Fort Collins, CO, is a key component of the National Rabies Management Program. NWRC scientists investigate raccoon behavior, develop biomarkers and alternative vaccines, and research vaccination rates. NWRC researchers are also working on better baits to use for delivery of the oral rabies vaccine in raccoons. NWRC personnel are performing field studies in five States to evaluate the effectiveness of these experimental baits.

In collaboration with various universities, WS scientists are also conducting research on raccoon and skunk ecology in urban and rural settings and on gray fox ecology in Texas. Investigators are also working to develop better techniques to estimate raccoon density and to assess the effects of density and target-population distribution on the placement of vaccine baits. Studies will soon be underway to evaluate the persistence of the protective rabies antibody once an animal has been vaccinated.

Field studies and research continue to be crucial to the accomplishments of the program. Success in south Texas with the canine variant of rabies has shown that elimination is possible. With the combined benefits of ongoing research and committed staff and cooperators, WS continues to reach milestones that bring the program closer to its ultimate rabies management goals.

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Photo credits: The raccoon pictures on the front cover and the image of employees working with an anesthetized raccoon were taken by APHIS photographer R. Anson Eaglin. Inside the leaflet, the pictures of the gray fox and the coyote came from the APHIS photo collection. The pictures of the skunk and the raccoon are from Getty Images. WS employee John Forbes took all three pictures of baits. APHIS public affairs specialist Brienne German took the image of WS employees loading boxes of baits onto a plane for aerial bait-drop activities and the airplane picture on the cover.

United States Department of Agriculture

WS Wildlife Services

Protecting People | Protecting Agriculture | Protecting Wildlife

Preventing the Spread of Raccoon Rabies

National Rabies Management Program

Animal and Plant Health Inspection Service
Program Aid No. 1933

Wildlife Services

Protecting People
Protecting Agriculture
Protecting Wildlife

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Wildlife Services (WS) — a program within the U.S. Department of Agriculture's (USDA) Animal and Plant Health Inspection Service — works to limit the spread of rabies nationwide as part of its mission to minimize wildlife damage to agricultural, urban, and natural resources. An important part of WS' mission includes cooperating in wildlife disease-management efforts in order to protect public health and safety.

WS established its National Rabies Management Program in recognition of the changing scope of rabies. The program aims to prevent the further spread of rabies by containing the raccoon variant and, eventually, to eliminate terrestrial rabies in the United States through an integrated program involving the use of oral rabies vaccination (ORV) of wildlife.

Pictured are some of the wildlife species that commonly spread rabies—coyote, fox, and skunk.

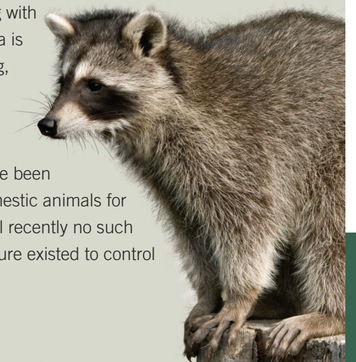
Background

Raccoons are one of the most recognizable wildlife species. Whether you have seen raccoons on television or in your backyard, rummaging through a trashcan, they are easily identified by their black face mask and ringed tail. Although you might view them as cute and cuddly, raccoons are one of the species most often responsible for transmitting rabies and should be left alone.

Rabies is caused by a virus that affects the central nervous system in mammals and is almost always transmitted through saliva when an infected animal bites an uninfected animal or person. Untreated, rabies is always fatal; however, effective vaccines are available to protect people and pets.

According to the Department of Health and Human Services' Centers for Disease Control and Prevention, more than 90 percent of rabies cases reported in the United States each year are found in wildlife. Several different variants of the rabies virus exist in this country. Each variant is spread predominantly by one wildlife species, but all variants are capable of infecting warm-blooded mammals, including humans. Raccoons and skunks account for the most reported cases, but bats, foxes, and coyotes are also among the commonly infected wildlife species.

The cost of living with rabies in America is high and growing, exceeding $300 million per year. Although rabies vaccinations have been available for domestic animals for many years, until recently no such preventive measure existed to control rabies in wildlife.



Aerial drops of ORV baits are the most cost-effective way to distribute vaccine in rural areas. Here, WS employees load baits onto a fixed-wing aircraft.

Fishmeal–polymer bait (left) and a coated sachet (right).

ORV Efforts

Since 1995, WS has been working cooperatively with local, State, and Federal governments, universities, and other partners to address this public health problem by distributing ORV baits in targeted areas. While raccoon vaccination is the largest of WS' efforts, the program has been involved in a cooperative ORV operation in Texas that targets canine rabies in coyotes and a unique variant of the disease in gray foxes. Scientists at WS' National Wildlife Research Center (NWRC) are conducting research in Arizona to learn more about the use of ORV in skunks and feral dogs.

At this time, the raccoon rabies variant is found only in the Eastern United States. A vaccination zone has been established stretching from Maine to Alabama to prevent the westward spread of the virus that causes raccoon rabies.

Annually, WS and cooperators distribute about 6.5 million baits in selected States to create a zone where raccoon rabies can be contained. In setting up that zone, WS wildlife biologists made sure to incorporate features of the natural landscape that can help the containment effort (e.g., mountain ranges and large bodies of water that can act as natural barriers). For instance, the densely forested habitats at high elevations of the Appalachian Mountains limit raccoon movements and help slow the spread of raccoon rabies virus west of this mountain range.

In 2006, the program shifted the Appalachian Ridge ORV zone 5 miles to the east, an important step toward the longrange goal of eliminating raccoon rabies. The goal is to continue shifting the zone eastward until raccoon rabies has been eliminated all the way to the east coast.

Raccoon movements in the Northeastern United States are a concern as well. Since the year 2000, cooperative efforts between the United States and Canada have maintained a zone to contain raccoon rabies within its present boundaries. The northeastern part of WS' program includes New York, Vermont, New Hampshire, and Maine. Baits are distributed along the border to prevent the northward spread of raccoon rabies into Canada.

A vaccination zone has been established stretching from Maine to Alabama to prevent the westward spread of the virus that causes raccoon rabies.

Distributing the Vaccine

The ORV baits, developed and manufactured by Merial Inc., in Athens, GA, consist of a sachet, or plastic packet, containing the Raboral V-RG® rabies vaccine. To make the baits attractive, the sachets containing vaccine are sprinkled with fishmeal coating or encased inside hard fishmeal–polymer blocks about the size of a matchbox. As other private companies work to develop and license effective vaccines, WS may integrate these baits into the program as well.

When a raccoon finds a bait and bites into it, the sachet ruptures, allowing the animal to swallow the vaccine. Raccoons that swallow an adequate dose of the vaccine develop immunity to rabies. As the proportion of vaccinated animals in the population increases, they act as a buffer to stop the spread of the disease to other wildlife, domestic animals, and people.

Field crews distribute the ORV baits by air or ground baiting. Fixed-wing aircraft are the most effective means for distributing large numbers of the ORV baits. Hand-baiting is important for reaching urban areas, where there may be safety risks associated with distributing baits from planes, and for lessening the likelihood that people and domestic animals will contact the baits.