USDA
United States Department of Agriculture

Animal and Plant Health Inspection Service
National Wildlife Research Center

July 2016

Preventing Wildlife Rabies Saves Lives and Money

Rabies is a deadly viral disease that affects the nervous system of mammals. Several variants of the rabies virus exist in the United States. Each variant is spread predominantly by one wildlife species, but all variants can infect and kill mammals, including humans.

Every year, Federal, State, and local governments in our country distribute more than 10 million oral rabies vaccine (ORV) baits to reduce wildlife rabies and prevent disease transmission to humans, domestic animals, and pets. Economists at Wildlife Services (WS)—a program within the U.S. Department of Agriculture's (USDA) Animal and Plant Health Inspection Service (APHIS)—have conducted cost-benefit analyses of these efforts showing that eliminating wildlife rabies saves lives and can save taxpayers millions of dollars each year.

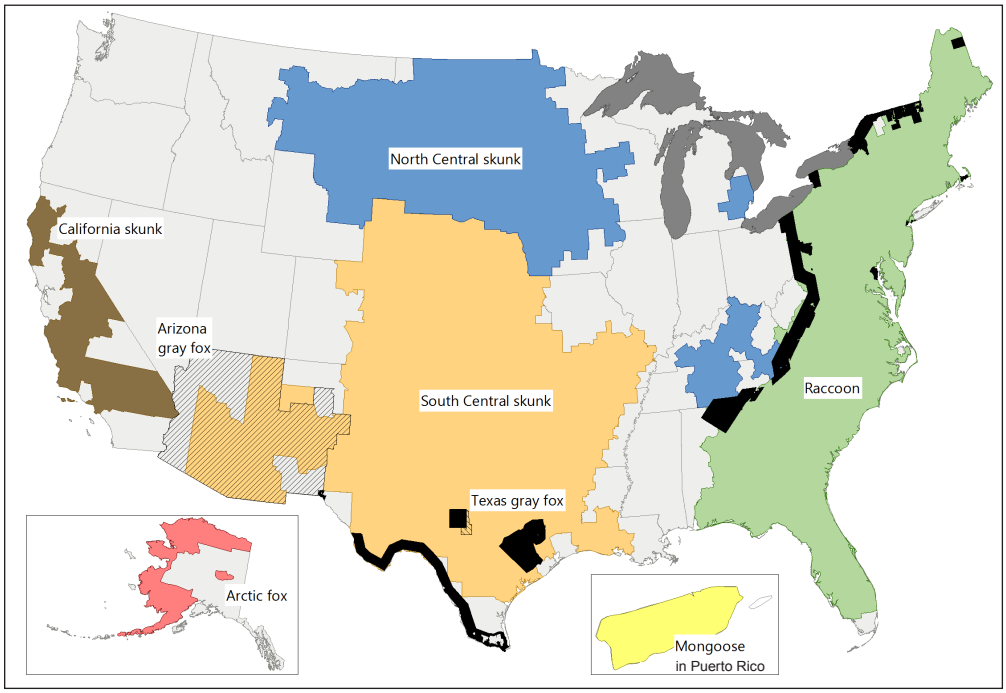
Preventing Rabies

About 90 percent of reported U.S. rabies cases occur in wildlife. Raccoons account for the most reported cases, but bats, skunks, foxes, and coyotes are also commonly infected. Wildlife species that are natural reservoirs of the rabies virus, such as raccoons, thrive in many environments and maintain the virus either at low levels or spread it quickly during outbreaks.

Since 1995, WS has partnered with Federal, State, and local agencies; universities; and other partners to combat wildlife rabies. Each year, WS and cooperators distribute more than 8 million ORV baits in selected States to create a zone where raccoon rabies can be contained. Raccoon populations exist in all 48 contiguous States, so this program is critical to preventing rabies in these populations nationwide. While raccoon vaccination is WS' largest rabies prevention effort, in Texas, WS and cooperators also eliminated canine rabies in coyotes and greatly reduced the spread and geographic distribution of a unique variant of the disease in gray foxes through an ORV baiting program. In Arizona, WS works on a variety of collaborative rabies research projects focused on gray foxes, skunks, and bats, as well as free-ranging dogs on tribal lands.

Economic Benefits of ORV Programs

Costs associated with rabies outbreaks can total hundreds of millions of dollars due to the need for public health investigations, animal rabies tests, pre- or post-exposure prophylaxis (PEP)



Terrestrial wildlife rabies reservoirs in the United States and current ORV baiting zones in black (Source: WS and Centers for Disease Control and Prevention)

WS biologists reduce wildlife rabies through ORV programs and surveillance and monitoring efforts.

treatments, pet and livestock vaccinations, and public education efforts. Although our country's rabies prevention network is effective, about 38,000 people still receive PEP treatments annually, resulting in over $150 million in health care costs.

Raccoon rabies is found throughout the eastern United States. Recently, a group of experts including two WS economists convened to model the rate and westward spread of raccoon rabies that would occur without management and to estimate the resulting economic impacts. The effort found that after 20 years without management, raccoon rabies would stretch west and south from central Wisconsin to the Texas-Louisiana border. During this time, the present value of the negative impact of rabies would be over $1.2 billion, or about $60 million per year. From this analysis, it is clear that without the existing ORV program, the spread of raccoon rabies would be fast and extensive and would likely result in significant economic impacts.

In another study, WS economists collaborated with the California Department of Health Services to determine the direct and indirect economic costs of human rabies exposure in two California counties. Results indicated that the average cost of a single suspected rabies exposure was about $4,000 (2007 U.S. dollars). Using these identified costs, the economists then assessed the potential benefits and costs of ORV baiting to eliminate or prevent the spread of skunk rabies in California. Results showed that for every dollar spent on wildlife rabies control and prevention, the return value in benefits could be as high as $6.35.

Results from analyses such as these provide an economic basis for decision making and serve as a guide for future ORV baiting campaigns in the United States and other countries. Today, societal and environmental changes are leading to more chances for people and pets to be exposed to wildlife, particularly in urban and suburban areas. We have made progress towards eliminating rabies in terrestrial wildlife, but there is still work to do. To eliminate rabies from our country, we need to prevent the disease in wildlife.

Each year, three types of ORV baits (totaling more than 10 million) are distributed to prevent rabies in raccoons, coyotes, foxes, skunks, and other wildlife.

Recent ORV Successes

- As a result of an ORV baiting program in Texas, WS and its partners eliminated the domestic dog-coyote variant of rabies from the United States in 2004, and the World Health Organization declared the United States free of canine rabies in 2007. This and similar successes in Canada and several European countries demonstrate that using ORV for wildlife can manage terrestrial rabies.
- An integrated rabies control program including ORV has resulted in only one gray fox variant rabies case in Texas since 2009.
- An ORV program in the Eastern United States has prevented the westward spread of raccoon rabies into populations beyond the Appalachian Mountains.
- Raccoon rabies cases have been significantly reduced in part due to ORV programs on Long Island, NY; Cape Cod, MA; and the eastern side of the Cleveland, OH, metropolitan area.

ORV programs reduce:

- Epizootic-related pet and livestock vaccination, quarantine, and euthanasia
- Burden on State services for animal diagnostic tests
- Livestock losses
- Wildlife losses

Rabies and One Health

Using a One Health approach, experts from multiple disciplines collaborate on national and global initiatives that address interconnections between animal, human, and environmental health.

By combining the expertise of human health care providers, veterinarians, and wildlife professionals, rabies management programs can improve the health and well-being of all species impacted by this disease. To learn more, please visit www.onehealthinitiative.com.

Wildlife Services

NWRC

National Wildlife Research Center

Learn More

For more information, please contact:

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APHIS 11-55-013

Eliminating terrestrial rabies from the United States relies on preventing the disease in wildlife.