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## Animal Rabies in Alaska — June 1, 2020 through May 31, 2021

### Introduction

Rabies is a life-threatening viral zoonosis. Rabies can be prevented in humans through vaccination and postexposure prophylaxis (PEP). Rabies can be prevented in certain domestic animals through vaccination and in certain wildlife species using vaccine-containing baits. Rabies is typically transmitted to humans via a bite from a rabid animal and less commonly when saliva from an infected animal comes into contact with broken skin.<sup>1</sup>

Rabies is enzootic in Alaska; arctic and red foxes from northern and western coastal Alaska are reservoirs for rabies, but all mammals can be infected by the virus.<sup>1</sup> Per Alaska State regulation 7 AAC 27.022, dogs, cats, and ferrets must be vaccinated against rabies. Following a possible exposure to the rabies virus, persons should receive rabies PEP. Once clinical signs of rabies appear, rabies remains almost universally fatal. The last human case of rabies in Alaska was reported in 1943.<sup>1</sup>

In animals, rabies can be diagnosed post-mortem by detection of the virus in the brain at the Alaska State Virology Laboratory (ASVL). The Alaska Department of Fish and Game (ADF&G) also uses a field-based testing methodology to test animals for rabies.<sup>1</sup> For special projects or in circumstances in which a sample has been compromised, testing can also be done at the Centers for Disease Control and Prevention (CDC). Once an animal is confirmed with rabies, the Alaska Section of Epidemiology (SOE) works with local animal, human, and environmental health partners to ensure exposed animals and humans receive appropriate follow-up. In humans, several tests (e.g., viral isolation and antigen testing) are required to diagnose rabies ante-mortem. This testing is done at CDC.

This *Bulletin* summarizes recent ASVL rabies testing data and provides recommendations for reducing rabies across the state.

### Methods

Rabies testing data from ASVL from June 1, 2020 through May 31, 2021 were reviewed.

### Results

During the time period reviewed, 56 animals in Alaska were tested at ASVL for rabies; 16 (29%) tested positive (Table). Of the 32 dogs and cats tested, 6 (19%) were known to be fully vaccinated. All 6 of these animals had either negative (n=5) or unsatisfactory (n=1) test results. The most common reason for testing an animal for rabies was that the animal had bitten or had otherwise attacked a person or a pet.

### Discussion

Over the past 12 months, rabies was identified in an unusually large number of Alaska animals and in one uncommon species.<sup>3</sup> Testing at ASVL is not systematic surveillance; the number of animal cases identified varies from year-to-year depending on how many animals are submitted. Rabies dynamics depend on the fox population size, which typically follows the population cycles of small rodents.<sup>1</sup> Rabies can easily spillover from foxes to dogs if vaccination coverage rates are low in dogs. Since March 2021, northern and western rural communities experienced increases in fox interactions. This prompted ADF&G personnel to work with other State of Alaska, local, and federal partners to respond to a fox rabies outbreak in the Norton Sound area. A public information campaign was implemented, animal vaccination clinics were held, and dozens of foxes were killed and tested for rabies.<sup>4</sup>

Many rabies vaccination clinics scheduled in 2020 in rural areas were canceled because of COVID-19 travel restrictions; animals that would have been vaccinated remain susceptible, increasing

their risk and the risk to persons with whom they interact. Additionally, Alaska is experiencing a distemper outbreak among dogs.<sup>3</sup> Another vaccine-preventable, viral disease, distemper does not cause disease in humans. Symptoms of distemper are similar to rabies, which makes distinguishing between the two difficult. This may increase the number of animals tested for rabies, which can strain testing resources. A high prevalence of distemper can also result in unnecessary administration of PEP when dogs are not available for testing.

**Table. Animal Rabies Testing at the Alaska State Virology Laboratory — June 1, 2020 through May 31, 2021**

|                               | Tested (N=55*) | Positive (N=16, 38%) |
|-------------------------------|----------------|----------------------|
| <b>Species</b>                |                |                      |
| Dog                           | 28             | 2 (7%)               |
| Red fox                       | 12             | 10 (83%)             |
| Arctic fox                    | 1              | 1 (100%)             |
| Unspecified fox               | 4              | 2 (50%)              |
| River otter                   | 1              | 1 (100%)             |
| <b>Location of Collection</b> |                |                      |
| Nome Census Area              | 15             | 5 (33%)              |
| North Slope Borough           | 4              | 3 (75%)              |
| Bethel Census Area            | 8              | 4 (50%)              |
| Dillingham Census Area        | 7              | 4 (57%)              |

\*Animals tested also included 1 brown bear, 1 wolf, 4 cats, and 4 little brown bats; none were positive. None of the 22 animals from Anchorage, Juneau, Kenai Peninsula, Fairbanks North Star, Matanuska-Susitna, and Northwest Arctic Boroughs were positive.

### Recommendations

1. Pet owners should ensure that their animals are vaccinated consistent with State of Alaska requirements.
2. All persons should avoid feeding, harassing, and otherwise interacting with stray animals and wildlife and should report strangely acting wildlife to the appropriate authority.
3. An animal displaying signs and symptoms of rabies should be euthanized for testing. Animals exposed to suspected or confirmed rabid animals should be managed per public health guidance.<sup>1</sup>
4. Health care providers can contact SOE for consultation regarding exposures that may warrant PEP, how to diagnose human rabies, and how to submit animals for testing (call 907-269-8000 Monday-Friday 8AM–5PM, or 800-478-0084 after hours). Rabies PEP is indicated for exposures to animals confirmed to be rabid, or those highly suspected to be rabid because of a combination of geography, behavior, and inability to rule out rabies by testing or observation.<sup>1</sup>
5. Pre-exposure rabies vaccines are recommended for persons in high-risk groups, such as veterinarians and their staff, animal handlers, rabies researchers, certain laboratory workers, and those persons whose activities bring them into frequent contact with animals at high risk for having rabies.<sup>2</sup>

### References

1. AK SOE. Alaska Rabies Prevention and Control Manual. Available at: <http://dhss.alaska.gov/dph/Epi/id/SiteAssets/Pages/Rabies/RabiesControlManual.pdf>
2. Manning SE, Rupprecht CE, Fishbein D, et al. Human rabies prevention--US, 2008: recommendations of the ACIP. *MMWR* 2008;57(RR-3):1–28. Available at: <https://www.cdc.gov/mmwr/PDF/rr/r5703.pdf>
3. AK Department of Environmental Conservation. “Safety Precautions for Rabies Outbreak in Bering Strait Region and Western Alaska.” June 1, 2021. Available at: <https://dec.alaska.gov/commish/press-releases/21-08-safety-precautions-for-rabies-outbreak-in-bering-strait-region-and-western-alaska/>
4. Beckmen K. Alaska Fish and Wildlife News. “Rabies Outbreak in Western Alaska Sparks Team Response.” ADF&G June 2021. Available at: [http://www.adfg.alaska.gov/index.cfm?adfg=wildlifenews.main&issue\\_id=219](http://www.adfg.alaska.gov/index.cfm?adfg=wildlifenews.main&issue_id=219)