



Eyeworm

(*Oxyspirura petrowi*)

Upland game bird hunters recently detected what is believed to be eyeworm (*Oxyspirura petrowi*) in harvested game birds in Montana. While this is the first known documentation of the parasite in the state, it is likely that it has been present for quite some time. Montana bird populations have not historically been surveyed for this parasite.

What is eyeworm? Eyeworm is a common term to refer to the blood-feeding nematode parasite called *Oxyspirura petrowi*. The term eyeworm is used because the adult worms are typically found on the surface of the eye, under the nictitating membrane, or behind the eyeball as well as in tear ducts and other glands of the eye. They feed on blood in the soft tissues surrounding the eye.

What wildlife species are affected by *Oxyspirura petrowi*? This parasite has been found in over 28 avian species in North America, including gallinaceous birds such as grouse, pheasant, lesser prairie chicken, quail and wild turkey, as well as passerines like northern cardinal, northern mockingbird and curve-billed thrasher.

How do birds become infected with this parasite? Birds become infected by ingesting an infected arthropod intermediate host (ex. grasshopper, cricket, cockroach, etc.)

What is the life cycle of the parasite? It is believed that a gravid female worm deposits embryonated eggs in the eyes of the host bird, and those eggs are washed down tear ducts to the mouth. The bird swallows the eggs, and they are later excreted in the feces where they can be ingested by an

intermediate host. If a susceptible bird ingests the infected arthropod intermediate host, infective larvae are released in the bird's gut. They migrate along the esophagus the pharynx and the mouth to the tear duct and the eyes. Once there, they complete development to adult worms and start producing eggs, beginning the cycle again.

How does eyeworm impact affected birds? The worms can cause damage to tissues behind the eyeball and in the tear ducts, resulting in bleeding and swelling. Heavy parasite loads can cause severe bleeding and swelling behind the eye, putting pressure on the optic nerve, and likely impairing the bird's vision. Birds with impaired vision may have decreased ability to fly, forage, escape predators, and reproduce successfully.

Where does *Oxyspirura petrowi* occur in wild birds? Geographic distribution of the parasite is relatively widespread but not well documented. A 2017 study documented presence of the parasite in bobwhite quail in Alabama, Oklahoma, Virginia and Texas, with both Oklahoma and Texas having areas of high prevalence. Historically, the parasite has been documented in several U.S. states, including Kansas, Nebraska, Minnesota, Michigan, Louisiana and Florida. This list is likely an underrepresentation of the true geographic distribution of the parasite because surveys have not been conducted in many states.

Does this parasite affect safety of meat for human consumption? No. This parasite is not transmissible to humans through consumption of meat from affected birds.

Does this parasite pose a risk to my dog? No. This parasite does not pose a risk to dogs. However, feeding raw scraps from game birds or other wildlife is not recommended since some parasites can be transmitted to dogs through consumption of raw meat scraps.

If I see eyeworm in my harvested birds, should I report to FWP? Since this parasite has only recently been detected in Montana, FWP is interested in learning more about its distribution. If you detect eyeworm in your harvested bird and would like to report it, call the FWP wildlife health

program at 406-577-7880 to report the location of harvest, affected bird species and number of affected birds.

It's always a good idea to wear disposable latex or rubber gloves while cleaning game and to wash hands with soap and water or alcohol wipes immediately afterward. Cook game meat thoroughly to an internal temperature of at least 165 degrees F.