

# Internal Parasites of the Wild Turkey

By Dave Oates,

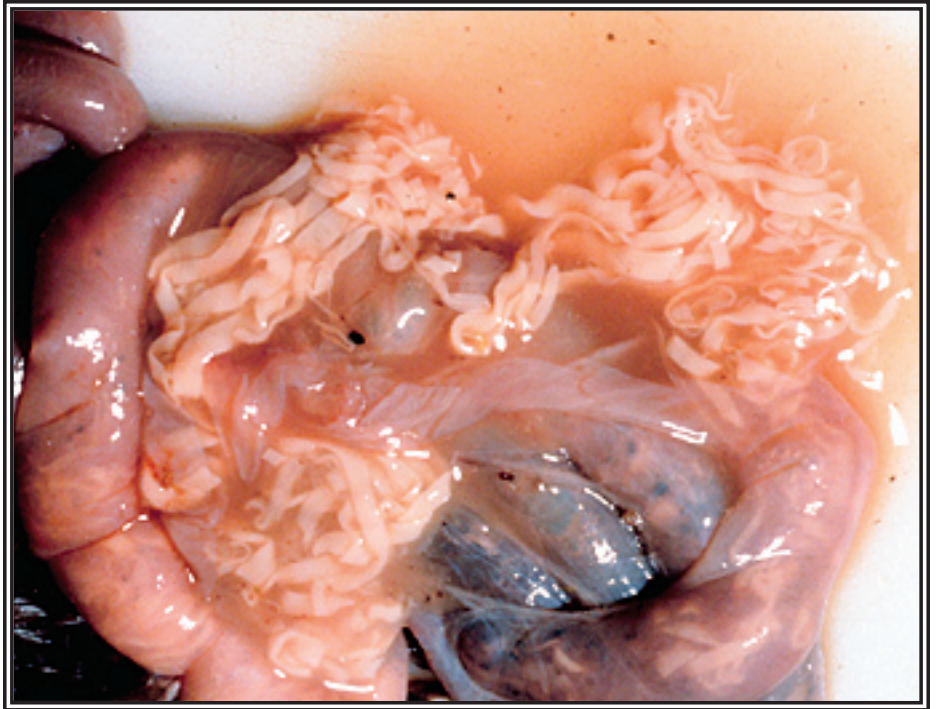
Brandon Houck and Skip Sterner

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Tapeworms live in many animals including wild turkeys, which generally obtain the Cestodes as poults.

Wild turkeys are hosts to many different internal parasites. Animals that live within their host and feed off of it or utilize their host as habitat are considered internal parasites (endoparasites). Other parasites, such as ticks, lice, and mosquitoes are called external parasites (ectoparasites). While most wild turkeys are host to some internal parasites, the impact of these parasites is usually minimal. Negative impacts to individual wild turkeys are only noticed at high parasite loads, and even then population level impacts are generally low.

## LIFE CYCLES

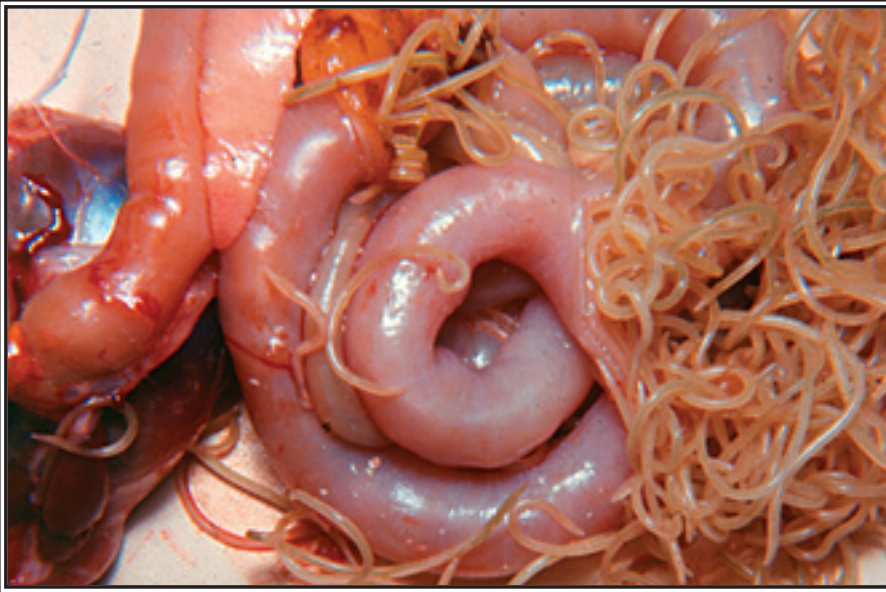
Two common life cycles exist for most internal parasites (Figure 1). The first is the direct life cycle. Adult parasites in a wild turkey lay eggs that are shed from the bird in its droppings. The eggs develop into juveniles that are incidentally ingested by feeding wild turkeys. The juveniles develop into adults in the area of the wild turkey's body they are best suited for.

The indirect life cycle is more complex. Eggs or juveniles are passed out of a wild turkey, but if eaten by another wild turkey they will not develop into adults. An invertebrate such as an insect or a snail (called an intermediate host) must first eat the eggs or juveniles, where they develop into an infective or third-stage juvenile. Once the intermediate host is eaten by a wild turkey the parasite matures into an adult and the cycle is completed.

## TYPES OF INTERNAL PARASITES

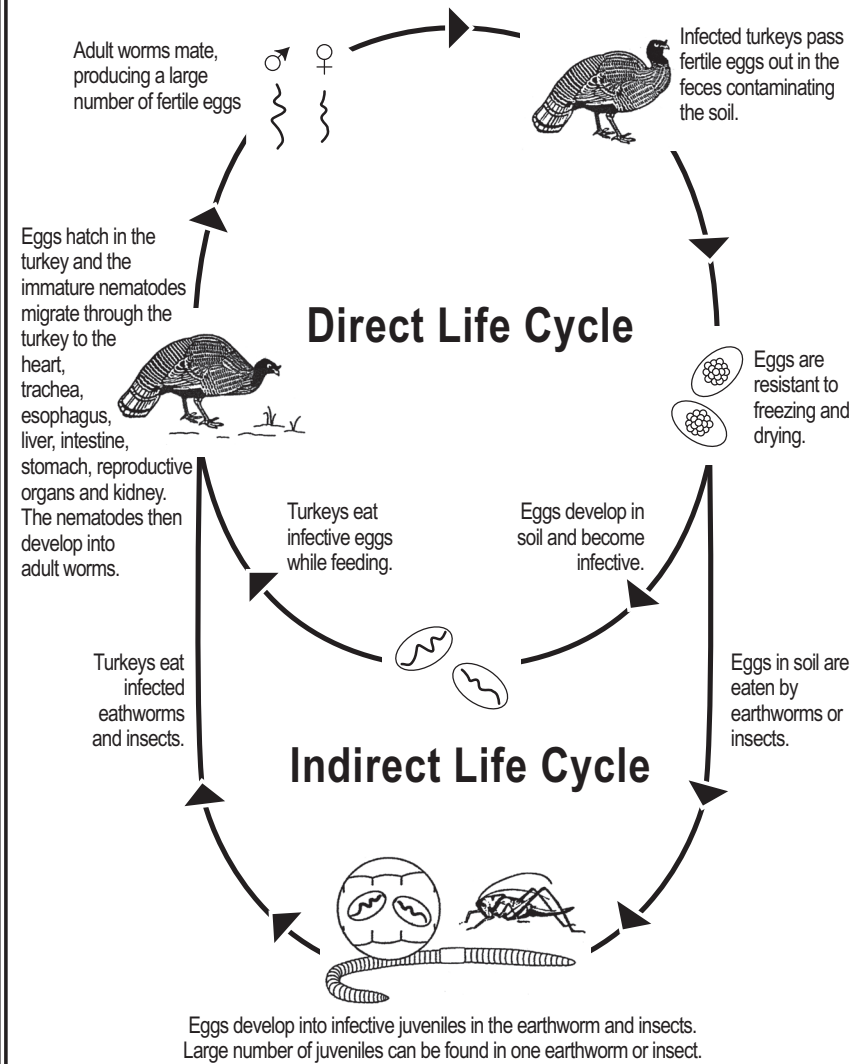
Protozoans are responsible for a number of conditions in wild turkeys, most importantly the disease histomoniasis, also known as blackhead disease. This disease is described in NWTF Wildlife Bulletin No. 25, Blackhead Disease. Protozoans are usually obtained through other parasite sources such as the environment (drinking water), insects (mosquitoes), or parasites (roundworms).

Nematodes, or parasitic roundworms, are found in various locations including the heart, lungs, and trachea, but are most common in the gastrointestinal tract. Nearly seventy species of nematodes have been reported in wild and domestic turkeys. While most nematodes do not cause significant harm to adult wild turkeys, several can have serious negative impacts including the species *Heterakis gallinarum*, which transmits the disease



Nematodes are common internal parasites of wild turkeys, but rarely cause the birds serious harm.

## How turkeys and other birds such as crows, ducks, geese, pheasants and quail become infected with nematode parasites.



blackhead. While rare, the most common effects of nematode infections include unsuccessful hatching, reduced reproduction, and mortality in young birds.

Trematodes are parasitic flatworms found in various organs including the liver, intestines, eyes, and kidneys. These ‘flukes’ as they are sometimes called do not appear to cause clinical illness in wild turkeys. Wild turkeys obtain flukes by eating snails, the required first host.

Cestodes or ‘tapeworms’ also infect wild turkeys. Adults live in the intestines and only rarely significantly affect nutrient absorption or the overall health of their host. Poults generally acquire tapeworms at an early stage when they ingest larvae found in the intermediate hosts that include ants and beetles.

Acanthocephalans are spiny-headed worms that occur very infrequently in wild turkeys and are not considered a threat.

### POTENTIAL NEGATIVE EFFECTS

Internal parasites can harm wild turkeys in several ways. First, tissue damage can be caused by the parasite penetrating into organs, especially the liver, intestine, gizzard, and reproductive organs. Secondary infections by bacteria or viruses at the site of tissue damage are also possible. Some parasites feed directly on the tissue or blood of their host, thus weakening the animal.

Reproductive success can be decreased by the presence of parasites in reproductive organs. Mechanical damage or blockage caused by parasites can prohibit fertilization. Eggs laid by infected turkeys may already contain bacteria and viruses that have a negative effect on hatching success. Wild turkey hens with heavy parasite loads may also be less attentive of their nests.

### WHAT CAN MANAGERS DO?

There is little that wildlife managers can do to prevent or treat internal parasite infections in wild turkeys. Managers can only attempt to improve habitat such that birds are in better condition and less susceptible to the effects of parasitism. However, gathering baseline data on parasite loads in healthy populations is useful. If populations begin to decline in the future their parasite loads can be compared to past levels to determine if parasites are part of the problem. Without baseline data it is more difficult to



*Spiny-headed worms occur only rarely in wild turkeys.*

diagnose a parasite-related problem. Internal parasites are difficult to detect without examining organs from dead birds, as there is usually no outward sign of their presence. Monitoring parasites in harvested birds being used for other studies (e.g., food habits) would require additional effort but might be beneficial.

### **EATING INFECTED BIRDS**

Most wild turkeys harvested by hunters will have at least some internal parasites. Most often the parasites inhabit the organs and will be discarded during cleaning without even being detected. Humans should not be worried about parasites in properly cooked birds, as potential parasites should be killed. Even if eaten, most of the parasites are host specific or at least require a bird as their host.



*Flukes or trematodes are obtained by eating snails. These parasitic flatworms don't appear to cause clinical illness in wild turkeys.*