
ENVIRONMENTAL Fact Sheet



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Gordian (Horsehair) Worms

What are those thread-like strands floating in the water? Commonly referred to as horsehair, or cabbage worms, the Gordian worm is often mistaken for a thread of horse hair. The term "horsehair worm" was coined because people once thought horse hairs would spontaneously come alive in their horse's water troughs. The term "Gordian" is after the Gordian knot of Greek mythology since horsehair worms are often seen in tangled masses.

But what are they really? Gordian worms are parasites. There are approximately 240 species within the Phylum Nematomorpha, with approximately 12 known species in the United States. Only one species is known to live in salt water, while all others are considered fresh water species. The most common species found in the U.S. is *Gordius robustus*.

Adult worms may be found in flowing or standing water including rivers, streams, vernal pools, ponds, and even pets' water bowls. They are long (can grow up to two feet), thin (1/16th of an inch), and round, with inter- and intra- species color variation ranging from tan to black. Besides having a long and slender appearance, Gordian worms are unlike earth worms, in that they are not segmented. The body diameter is the same throughout most of the body's length, with a slight taper at both extremities. The Gordian worm does not have a distinct head. Adults do not feed as their stomachs are degenerate (do not function) and their mouths are useless. They can be found either singularly or in masses, often wrapped around rocks, branches and each other.



Are Gordian Worms Harmful to Humans?

Although Gordian worms may look harmful, they are not parasitic to humans, pets or plants. Gordian worms are parasitic to insects, such as grasshoppers, crickets and beetles.

Do Gordian Worms Indicate Poor Water Quality?

Gordian worms occur naturally, and do not indicate either good or bad water quality conditions. The waterbody they end up in is simply by chance, and depends on where their host dies.

Taxonomy

Gordian worms belong to the Phylum Nematomorpha, which originates from the Greek *nema* ("thread") and *morphe* ("shape") due to their thread-like appearance.

Life Cycle

Following copulation between a male and female, usually early spring, summer or autumn, the male dies. The female Gordian worm then deposits strands of eggs, as many as 10 million, and dies. Depending on temperature and moisture conditions, incubation takes anywhere from 15 to 80 days at which point the eggs hatch as larvae.

The larvae must then find a host. There are several different ways this can happen. They can: encyst on vegetation near the water's edge and later be ingested by a host, fall to the bottom of the waterbody and be ingested by a transport host [aquatic insect larvae (mayflies, dragonflies)], or be ingested directly by a host (grasshoppers, crickets, beetles). Once they reach their host, the larvae burrows through the host's gut into the body cavity, digesting the host's tissue for nourishment. After development, the Gordian worm exits the body wall of the host. Here they need to find water or moisture to survive, and become free-living, non-feeding, adults. The total time of the life cycle varies between two and 15 months.

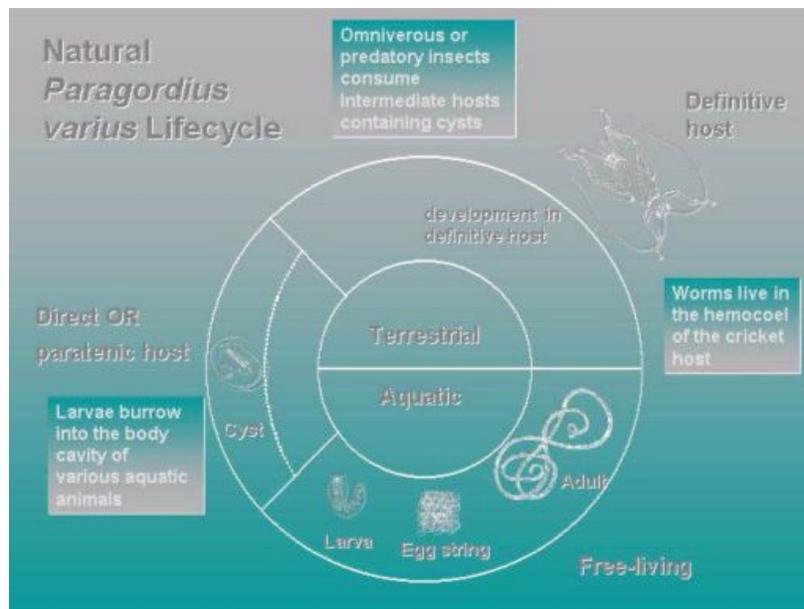


Figure courtesy of Ben Hanelt, Louisiana State University

Information in this fact sheet was based, in part, on:

Pennak, R.W. 1978. Chapter 10: Nematomorpha (Horsehair worms, Gordian worms) pp. 246-253. in *Freshwater Invertebrates of the United States*. 3rd Ed. John Wiley and Sons, New York. 628 pp.

Ben Hanelt, Department of Biological Sciences, Louisiana State University.

W.S. Cranshaw and R. Zimmerman, Colorado State University Cooperative Extension; Illinois Department of Natural Resources; University of Florida Department of Entomology and Nematology.