

Brainworm

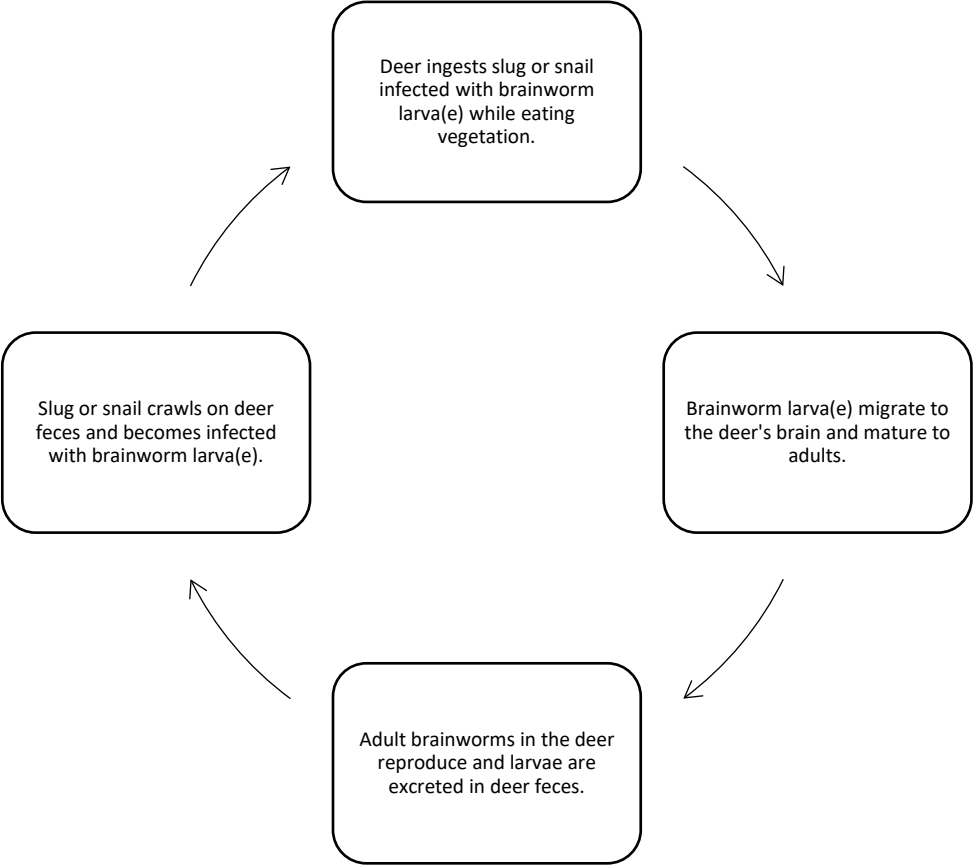
(Parelaphostrongylus tenuis)

Brainworm, also called meningeal worm, is suspected to cause long-term decline in moose populations that co-occur with abundant white-tailed deer (more than 10 deer per square mile). Deer densities exceed this level in many of the river valleys and parts of central and southern New Hampshire.



Moose displaying head tilt and glazed eye symptoms of brainworm. Photo copyright Mark Ellingwood.

Brainworm life cycle



Symptoms of brainworm in moose

- **Head tilt**
- **Circling**
- **Uncoordination/weakness**
- **Paralysis**
- **Fearlessness**
- **Glazed eyes**

White-tailed deer are the primary host of brainworm. Adult worms occur along the outer edge of the brain and do not affect deer; most (more than 50%) deer in NH are infected.

Moose and brainworm

Moose accidentally ingest slugs or snails while consuming vegetation. When moose consume infected slugs and snails, the larvae and adult worms can cause debilitating symptoms due to damage of the spinal cord and brain. These symptoms can lead to death.

Brainworm and climate change

Climate change may mean more deer in New Hampshire, which would lead to increased exposure to brainworm in moose. A limiting factor for white-tailed deer in New Hampshire is the severity of winter weather. Winters with extended periods of deep snow and cold temperatures cause mortality in deer and reduced reproductive success the following spring. These harsh conditions occurred periodically in New Hampshire with decreasing frequency from north to south. Projections of shorter winters with warmer temperatures due to global warming will likely result in fewer winters with prolonged harsh conditions. This may result in increasing deer densities, which increases moose exposure to brainworm.