



# Nature's Notebook Phenophase Photo Guide

*Operophtera brumata* winter moth



## Why Observe?

Winter moth (*Operophtera brumata*) is a non-native insect that was first identified in the eastern United States in 2003. The caterpillars can defoliate certain species of deciduous trees, particularly maples and oaks. The species is present across New England, though damaging populations are only found in eastern Massachusetts, Rhode Island, and Maine. This pest does not appear to be spreading rapidly.

We forecast caterpillar emergence based on growing degree days. A biological control (a tachinid fly) appears to be successfully controlling this pest in some years and regions. There are several methods of control depending on local context and host species. Treating the caterpillars, particularly when they first emerge, with an insecticide spray can be an effective control. For specific information on preferred treatment options in your region, we recommend contacting your state or local extension agent.

## **Tips for Identification**

Caterpillars are very small when first hatched, less than the size of an eyelash. They have three pairs of legs on the front part of their body, two pairs on the back part, and move in "inchworm" fashion.

May be confused with cankerworms, which are similar in appearance. Fall cankerworm caterpillars have two pairs of prolegs (stumpy "legs" on the back half of the body) and a much shorter third pair. Winter moth caterpillars only have two pairs of prolegs.

Be aware that there is variation from individual to individual within a species, so your insect may not look exactly like the one pictured. If you are uncertain whether or not a phenophase is occurring, report a "?" for its status until it becomes clear what you are observing after subsequent visits.



Dimitrios Avtzis, NAGREF-Forest Research Institute, Bugwood.org. CC BY-NC 3.0



Milan Zubrik, Forest Research Institute - Slovakia, Bugwood.org. CC BY-NC 3.0

This Phenophase Photo Guide has been vetted by the USA-NPN NCO. It is appropriate for use as a supplement to the Nature's Notebook phenophase definition sheet for this species.



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Louis-Michel Nageleisen, Département de la Santé des Forêts, Bugwood.org. CC BY 3.0

#### Female adult



Gyorgy Csoka, Hungary Fores Research Institute, Bugwood.org. CC BY 3.0



### Adults

One or more adults are seen moving about or at rest. For Operophtera brumata, females are brownish-gray with tiny wing stubs and cannot fly, while males are light brown to tan and fly in search of females. Males are often found around outdoor lights.



orgy Csoka, Hungary Forest Research Institute, Bugwood.org. CC BY 3.0

#### Mating

A male and female are seen coupled in a mating position, usually end to end. This can occur at rest or in flight. For Operophtera brumata, females are flightless so mating does not occur in flight.



#### Egg laying

A female is seen laying eggs on a plant. If possible, record the name of the plant or describe it in the comments field. For Operophtera brumata, eggs are typically deposited in tree bark cracks and crevices.



Milan Zubrik, Forest Research Institute - Slovakia, Bugwood.org. CC BY-NC 3.0

#### Caterpillars

One or more caterpillars (larvae) are seen moving about or at rest. When seen on a plant, if possible, record the name of the plant or describe it in the comments field. For Operophtera brumata, caterpillars are "inchworms" or "loopers" with three pairs of forelegs and two pairs of stumpy "legs" (prolegs) on the back half of their body. They are tiny and blackish in color when first hatched, becoming pale green with a faint white stripe along each side as they get larger.



Hannes Lemme, Bavarian State Research Center for Agriculture, Bugwood.org. CC BY-NC 3.0 (cropped)

#### **Caterpillars feeding**

One or more caterpillars are seen feeding. If possible, record the name of the species or substance being eaten or describe it in the comments field. For Operophtera brumata, caterpillars feed on the leaves and leaf and flower buds of trees and shrubs.

Phenophases not pictured: Dead adults, Dead caterpillars, Individuals at a light, Individuals in a net, Individuals in a trap