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## **WINTER MOTH** **(*Operophtera brumata*)**

The winter moth is an invasive defoliator. It was introduced to North America in the 1950's in Nova Scotia. It has extended its range southwards into New England following the Atlantic coast and was officially detected in eastern Connecticut in late 2005.



**Fig. 1 Winter moth caterpillar**

Winter moth has the potential to cause widespread ecological damage by defoliating commercial tree species such as cherry, blueberry and apple. It also includes forest tree species such as maple, oak, ash, birch, elm, and linden.

### **Description and Biology:**

Winter moth caterpillars hatch from overwintering eggs in late March to early April, when dormant tree buds are beginning to swell. The caterpillars burrow into the expanding buds and feed on developing leaves and flowers, causing deformation of and reduction in leaves and viable flowers. Once buds have broken, the caterpillars feed on the leaves, and a high population can cause complete defoliation of a host plant.



**Fig. 2 Winter moth, adult male**

Mature caterpillars are 1 inch long pale green 'inchworms.' (Fig. 1) Beginning in late May these caterpillars drop to the ground and pupate in leaf litter. They emerge as adults in

late November to December. Adult male winter moths are a grayish brown with a 1-inch wingspan (Fig. 2). They fly when air temperatures are above freezing and are frequently encountered around porch and Christmas lights into December. Females are wingless; they release pheromones in order to attract males. Mated females lay egg clusters in crevices on the twigs and bark of host trees, which will hatch early the following spring.

A native moth called the Bruce spanworm (*Operophtera bruceata*) has an identical biology and development to the winter moth. These two species are able to mate and produce hybrid offspring.

**Control:**

A very early spring season treatment of the organic pesticide Bt (*Bacillus thuringiensis*) can control winter moth caterpillars as they begin to burrow into swelling tree buds. Timing is important; once the caterpillars are inside the buds they are protected from treatment and control is less effective.

A species of parasitic tachinid fly, *Cyzenis albicans*, has been released throughout the northeast (including eastern Connecticut) as a biocontrol for winter moth. Eggs laid on host foliage by the fly are consumed by winter moth caterpillars. The fly larvae parasitize the caterpillars, consuming the host internally and emerging as adults after the caterpillars pupate.