Forest Facts:
Spongy moth *(Lymantria dispar)*

Male (left) and female (right)

Spongy moth (***Lymantria dispar***) is an exotic insect whose caterpillars feed on 500 tree and shrub species, including both hardwoods and conifers. Two subspecies threaten forest resources. The **European spongy moth**, (*L. dispar dispar*), is native to temperate forests of western Europe and was introduced to the eastern U.S. in 1869. It has since spread to 20 states and four Canadian provinces. The **Asian spongy moth**, (*L. dispar asiatica*) is native to southern Europe, northern Africa, Asia and parts of the Pacific. Asian spongy moth is not established anywhere in the United States. Both subspecies would cause long-lasting effects on Oregon's forest economy and ecology if they were to establish in the state. In 2021, the official common name of this insect was changed from gypsy moth to spongy moth.

History and impacts

The European spongy moth was introduced in 1869 in Massachusetts as a potential silk-producing species. By 1889 it began causing significant damage to hardwood forests of the northeastern U.S. Attempts to eradicate the pest in the 1920s were unsuccessful.

Between 1970 and 2013, more than 80 million acres of forests were defoliated by European spongy moth in the eastern U.S. Programs to suppress outbreaks and eradicate satellite populations have been successful. A national Slow the Spread program has reduced the westward expansion by 70 percent, to about three miles per year.

Spongy moth surveys have been conducted by the Oregon Department of Agriculture (ODA) and its cooperators since 1979 using synthetic pheromone trapping. The European variety has been detected nearly every year. In 1984, more than 19,000 of these moths were captured in Lane County. Although Asian spongy moth is not established in the U.S., Oregon officials captured single Asian variety moths in 1991, 2000, and 2006, and two individuals in 2015.

Because of its good record of catching populations early, **Oregon has been 100 percent successful** in eradicating both European and Asian varieties. Today, no quarantines for spongy moth exist in Oregon.


Late-stage caterpillars (1.5-2.0″ long). Caterpillars congregate in vast numbers during an outbreak.

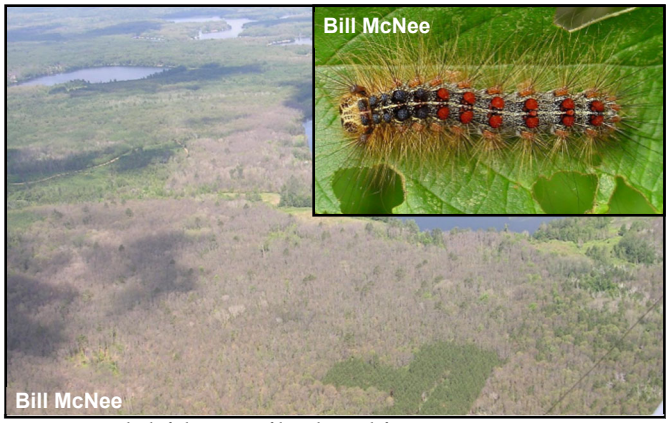
Clockwise from left: spongy moth caterpillars during outbreak stage; pheromone trap for adults; female laying egg mass.

Biology and spread

Caterpillars hatch from eggs in April-May. The larvae spin silken threads and can spread up to three miles on wind currents. Preferred hosts include oaks, alders, willows and others. Older larvae will also feed on conifers, such as hemlock, pines, and Douglas-fir. Caterpillars pupate in bark crevices and on the ground. Adults emerge usually in July, depending on climate, and live about one week. Females lay sticky egg masses on items near the ground.

European spongy moth females have wings but cannot fly, instead relying upon "ballooning" larvae for dispersal. Long range dispersal occurs when humans move household articles, vehicles and other items with egg masses attached.

Asian spongy moth females can fly; thus, it has a higher risk of spreading and establishing in Oregon. The Asian subspecies arrives to Oregon through international cargo and vessels infested with egg masses and adults.



Spongy moth defoliation of hardwood forests in Wisconsin. Inset: caterpillar and feeding damage.

Management approach

Unlike most invasive forest pests, a very effective treatment option exists for eradicating spongy moth populations. An organic biopesticide, Btk, that occurs naturally in a common soil-dwelling bacterium, has been used to eradicate spongy moth on more than four million acres in the U.S. since 1980.

Btk is applied aerially when spongy moth larvae are young. Trapping grids are then used in the area throughout the summer to detect adult spongy moths that may have escaped the spring pesticide applications.

Inspections of international vessels for Asian spongy moth are conducted by U.S. Customs and Border Protection. ODA continues to survey for both subspecies annually, with help from other state and federal agencies.

Using this approach, Oregon has prevented spongy moth from establishing in the state, thus protecting the state's forest ecology and economy.

References & further reading:

Oregon Department of Agriculture
www.oregon.gov/ODA

U.S. Forest Service
https://www.nrs.fs.fed.us/disturbance/invasive_species/gm/

USDA Animal and Plant Health Inspection Service
www.aphis.usda.gov/

More information:

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503-945-7200
www.oregon.gov/ODF/ForestBenefits/Pages/ForestHealth.aspx