

WASHINGTON STATE DEPARTMENT OF AGRICULTURE

The Washington State Department of Agriculture serves the people of Washington by supporting the agricultural community and promoting consumer and environmental protection.

Our Major Goals:

Protect and reduce the risk to public health by assuring the safety of the state's food supply.

Ensure the safe and legal distribution, use, and disposal of pesticides and fertilizers in Washington State.

Protect Washington State's natural resources, agriculture industry, and the public from selected plant and animal pests and diseases.

Facilitate the movement of Washington agricultural products in domestic and international markets.

Please visit our website at <http://agr.wa.gov/>

Customary business hours for WSDA
Monday - Friday, 8 a.m. - 5 p.m.
Please contact WSDA at (360) 902-1800

Contact information for **gypsy moth and invasive insects**:

For questions regarding the gypsy moth and invasive insects, please call 1-800-443-6684. If we do not answer, please feel free to leave a message and we will return your call as soon as possible.



AGR PUB 855-325 (N/2/11)

Do you need this publication in an alternate format?
Contact the WSDA Receptionist at (360) 902-1976
or TTY Relay (800) 833-6388.

GYPSEY MOTH IN WASHINGTON STATE

A gypsy moth primer



Male gypsy moth

The gypsy moth is the worst forest pest insect ever brought into the United States. The gypsy moth has defoliated millions of acres of trees and shrubs since being brought to the United States in 1869.

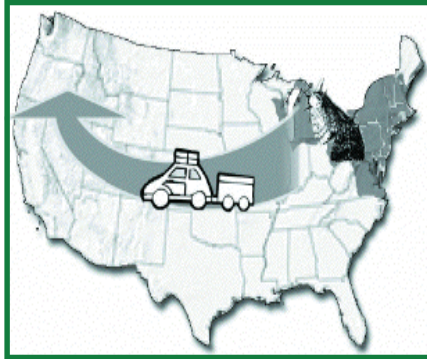
The gypsy moth was first detected in Washington in 1974. Since then, isolated introductions have been detected almost every year, but a permanent population of gypsy moths has never been established in the state.

HOW DID THE EUROPEAN GYPSY MOTH GET TO U.S.?

The European gypsy moth was introduced in North America by Leopold Trouvelot. In the late 1860's, he brought gypsy moth egg masses to the U.S. to cross breed with the silk worm. Some gypsy moths escaped into the environment. He notified local authorities of the potential problem he had created, but no action was taken. Twenty years later the first major gypsy moth outbreak occurred in Medford, Massachusetts.



Trouvelot, the naturalist from France



How the gypsy moth is spread state to state

The European gypsy moth is now permanently established in 19 Eastern and upper Midwest states. In alphabetical order, the 19 states are Connecticut, Delaware, Illinois, Indiana, Maine, Maryland, Massachusetts, Michigan, New Hampshire, New Jersey, New York, North Carolina, Ohio, Pennsylvania, Rhode Island, Vermont, Virginia, West Virginia, and Wisconsin.

HOW DO MOST EUROPEAN GYPSY MOTHS GET TO WASHINGTON?

On outdoor household articles, such as patio furniture, auto tires, fire wood, doghouses, birdhouses, and children's toys being brought to Washington from permanently infested states. The gypsy moth female lays her eggs in late summer or early fall on any flat surface. When these objects are moved, the egg masses move with them.



Egg masses on wheel well

OTHER FREQUENTLY ASKED QUESTIONS

5. Why is the gypsy moth so much more destructive than other pests?

Because it feeds on more than 500 species of trees and plants, and reproduces very rapidly. A single female moth can produce up to 500 females the following spring.

6. What determines the size of a gypsy moth eradication zone?

Where gypsy moths were caught, where other evidence of gypsy moth activity in the area was detected, and host vegetation in the area.

7. What determines whether an eradication treatment is conducted with ground equipment or aircraft?

WSDA prefers to conduct ground treatments. However, WSDA will use aircraft when the size or topography of a proposed treatment zone make it prohibitively expensive to administer the treatment with ground equipment.

8. What is WSDA's legal authority to conduct summer trapping and spring eradication programs?

Revised Code of Washington (RCW) 17.24.101 (Statewide survey and control activity) and RCW 17.24.021.

9. How does WSDA distinguish between a gypsy moth "introduction" and "infestation"?

An "introduction" is a first-time detection. An "infestation" is a conclusion by state entomologists that a reproducing population of gypsy moth is present. Most introductions die out on their own. Conclusions that reproducing populations are present are based on multiple catches in close proximity to each other over multiple years, or evidence of other gypsy moth activity detected in an area (e.g., egg masses, pupal cases, cast skins, of dead moths found on the ground).

OTHER FREQUENTLY ASKED QUESTIONS

1. Why is WSDA so concerned about keeping permanent populations of gypsy moths out of Washington?

WSDA doesn't want the worst forest pest insect ever to enter the U.S. to become permanently established in the state. We have seen the damage done to the environment and economy in the 19 states in the East and Midwest where permanent populations exist. We don't want that to occur in Washington. It would have a catastrophic impact on our environment and economy.

2. How extensive is the damage in the 19 states with permanent populations?

Very extensive. Hundreds of thousands of acres in the 19 states annually are defoliated, quarantined, and sprayed. Two examples illustrate the amount of damage that occurs: In 2008 in New Jersey 30,900 acres of trees died in the state as a result of repeated gypsy moth defoliation. In 2009 in Maryland 37,000 acres of vegetation were aerially sprayed to suppress existing infestations. By way of comparison the largest eradication treatment in Washington in the last 10 years has been over one square mile or 725 acres.

3. Exactly how does the gypsy moth damage the environment and the economy?

By weakening and killing trees and plants, destroying wildlife habitat, degrading water quality of creeks and streams, and reducing the use and aesthetic value of recreation areas. By destroying or damaging plants, trees, and shrubs; by triggering costly quarantines of agriculture, nursery, and timber products; and by reducing tourism. Visitors don't visit locations infested with caterpillars.

4. How many gypsy moth eradication treatments have been conducted in Washington and how many have been successful?

Eighty five. The first treatment was conducted in 1979. Sixty-four treatments have been ground treatments, 16 have been aerial treatments, and 5 have been joint air-ground treatments. All treatments have been successful. Washington has never had a permanent population of gypsy moth.

HOW DO MOST ASIAN GYPSY MOTHS GET TO WASHINGTON?

On bulk cargo ships and containers coming from infested areas of Asia or Europe. The Asian gypsy moth has become established recently in Europe by mating with the European moth.



Foreign cargo ship at Washington port

WHY IS THE ASIAN MOTH A GREATER THREAT TO WASHINGTON THAN THE EUROPEAN MOTH?

1. Asian female moths can fly, European female moths cannot. This allows Asian infestations to spread more quickly than European infestations.
2. Asian caterpillars feed on evergreen trees in addition to deciduous trees, unlike the European caterpillar that feeds primarily on deciduous trees.



Gypsy moth caterpillars attacking leaf

WHAT ARE THE MOST COMMON HOST TREES FOR THE GYPSY MOTH?

Of the more than 500 species of trees and shrubs that the moth attacks, preferred deciduous (broad leaf) hosts include oak, apple, alder, aspen, filbert, willow, birch, madrone, cottonwood, and plum. Preferred coniferous (evergreen) hosts include Larch, hemlock and spruce.

WHY IS THE GYPSY MOTH SUCH A SERIOUS PEST?

1. In its caterpillar form, the moth feeds on a wide variety of trees and shrubs.
2. The gypsy moth reproduces very quickly. Each summer a single female can produce up to a thousand caterpillars the following spring.



Gypsy moth caterpillars



Egg mass hatching

3. The gypsy moth has a catastrophic impact on the environment. During major outbreaks, trees are weakened and killed; wildlife habitat is destroyed; water quality of creeks and streams is reduced; defoliated forests are susceptible to disease, fire, and erosion; and the aesthetic and economic value of homes, forests, and parks is reduced.



Gypsy moth caterpillar devouring leaf



Tree stripped bare by gypsy moth caterpillars

WHAT CAN I DO TO HELP KEEP PERMANENT POPULATIONS OF GYPSY MOTH OUT OF WASHINGTON?



1. Allow WSDA to place small cardboard gypsy moth traps on your property during the summer trapping season.
2. If you have just moved here from an infested state, do a self inspection for gypsy moths. A self-inspection checklist can be obtained at: www.aphis.usda.gov/lpa/pubs/fsheet_fa_notice/fs_phgypsymoth.pdf.
3. If gypsy moth infestations are found in your neighborhood, give WSDA permission to administer treatments.



Gypsy moth caterpillar attacking leaf



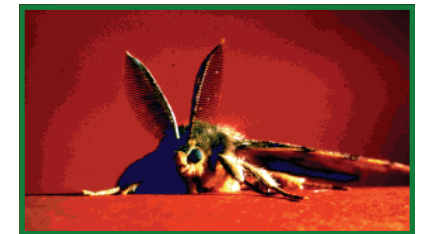
Gypsy moth trap



Male gypsy moth

WHERE CAN I FIND MORE INFORMATION ABOUT WSDA'S GYPSY MOTH PROGRAM?

1. Visit our web site at <http://agr.wa.gov/PlantsInsects/InsectPests/GypsyMoth/>.
2. Call the gypsy moth toll-free Hotline at 1-800-443-6684.



Close-up of male gypsy moth



Washington State Department of Agriculture

DO I HAVE GYPSY MOTH?

This is NOT a gypsy moth!



Western tent caterpillar



Adult stage
of the western tent caterpillar

The Western tent caterpillar is very common in western Washington and much less destructive. It is often mistaken for the gypsy moth. Tent caterpillars produce these large web-like tents each spring. Gypsy moths do not build anything comparable to these tents.

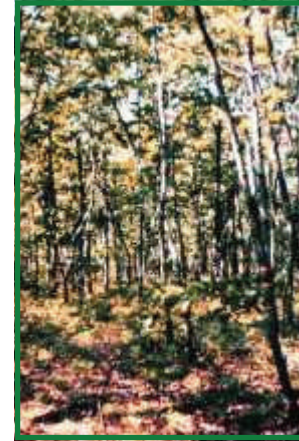


Western
tent
caterpillar

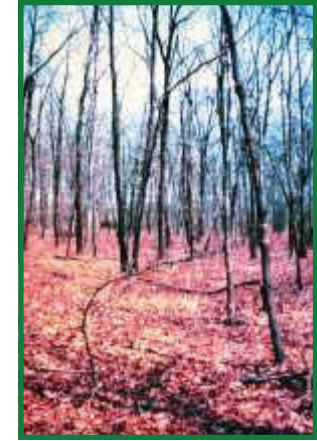


Gypsy
moth
caterpillar

Rows of orange patches along their back distinguishes tent caterpillars from gypsy moths. Gypsy moth caterpillars are grayish with five pairs of blue spots and six pairs of red spots along their backs.



Trees in early June



Same trees in July after
gypsy moth defoliation

- States infested with gypsy moth are subject to costly quarantines that have a devastating impact on timber, nursery, and agriculture industries.



Gypsy moth caterpillars
crawling on tree



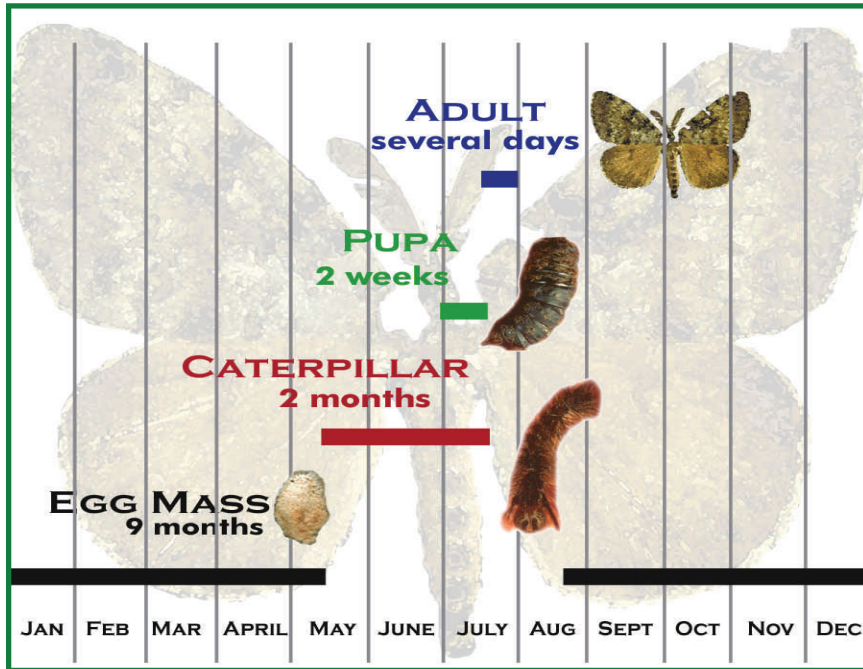
Gypsy moth caterpillars crawling on
overhang of house

- During major outbreaks, gypsy moths are a major nuisance crawling over buildings and sidewalks. Some people suffer allergic reactions from gypsy moth caterpillar hairs.



Gypsy moth caterpillars
crawling on porch

WHAT IS THE 12 MONTH LIFE CYCLE OF THE GYPSY MOTH?



The moth exists in an egg mass for *nine months*, as a caterpillar for *two months*, in the pupal stage for *two weeks*, and as an adult moth for *several days*.

WHAT DOES A GYPSY MOTH EGG MASS LOOK LIKE?



European gypsy moth females laying eggs

It is about the size of a quarter. In addition to gypsy moth eggs, it consists of velvety golden or buff colored hairs from the female's abdomen.



Gypsy moth egg mass

WHAT DOES A GYPSY MOTH CATERPILLAR LOOK LIKE?



Close-up of gypsy moth caterpillar

The gypsy moth caterpillar is 2 to 3 inches long, and distinguishable from other caterpillars by five pairs of royal blue and six pairs of bright red dots on its back.

WHAT DOES THE ADULT GYPSY MOTH LOOK LIKE?



Female gypsy moth

The female moth has a wing-span of about two inches that is white with brown, zig-zag markings.

European female gypsy moths do not fly.

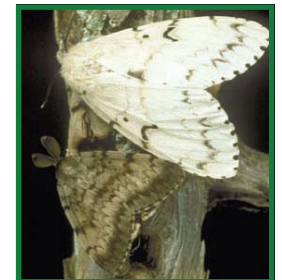


Male gypsy moth

The male moth has a wing-span of about one and one-half inches with mottled brown markings. It also has two very recognizable antennae on its head that enable it to locate a female moth.

HOW LONG ARE ADULT MOTHS ACTIVE IN THE STATE?

About a month. During this period, they do not feed, only mate, the female lays her egg mass, and the two adults die.



Female and male gypsy moths