

Protecting Ohio's \$7 Billion/yr Forest Industry

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The Gypsy Moth is an invasive species and does not belong in North America. The infestation dates from 1869 when a well meaning French scientist accidentally introduced the European insect into the Boston suburbs. Ten years after the escape of a few moths in 1869, trees in Boston were being stripped of their leaves in only a few nights in late June.

Since this time the Gypsy Moth has been slowly migrating west and south through the forests of North America. The female moth cannot fly because she usually carries over a thousand eggs. However in these modern times the Gypsy hitches a ride on recreational vehicles, nursery stock, firewood, and shipments of timber.

Infestations are devastating. The mature caterpillars can strip a mature oak of leaves in a single night. Roads become dangerously slippery because cars run over caterpillars by the thousands. Infestations in Ohio run into the hundreds of acres. In Michigan, West Virginia and Pennsylvania infestations may cover thousands of acres. Allegan County Michigan alone had 60000 acres infested with the Gypsy Moth in 2000.

Ohio is world famous for its oak crop. Harvested oak is exported to be converted to fine products by craftsmen. Once a mature oak is stripped of leaves it is only suitable for salvage harvesting. The turnover of the Ohio Forest industry is \$7 billion/yr generating over \$1 billion/yr for the economy of many of Ohio's most depressed counties.

We are working with the Ohio Department of Agriculture to introduce satellite technology into the detection and management of this pest. A graduate student at Wright State University demonstrated how to use Landsat data to locate the egg masses produced by the Gypsy Moth. The location of the greatest defoliation is where the greatest leaf mass is converted to Gypsy Moth egg mass, as verified by Ohio Department of Agriculture inspectors. Location of egg masses is the key to the control of this pest.

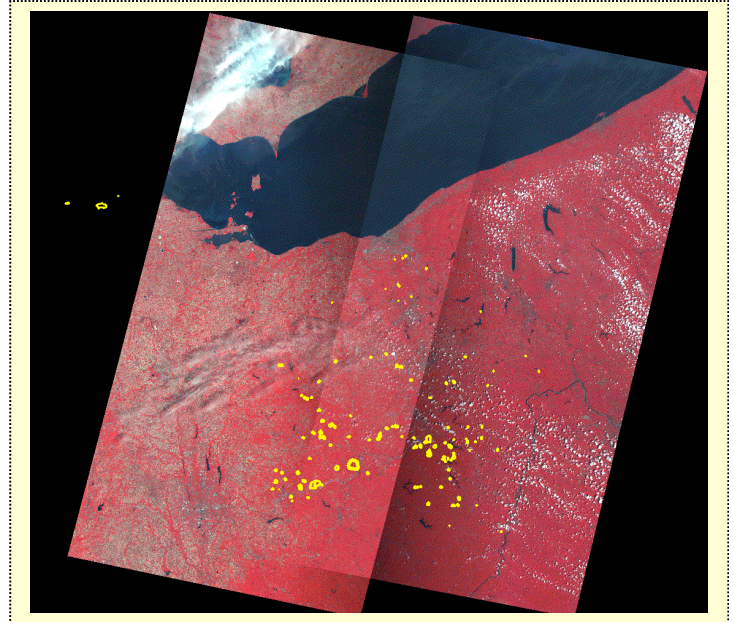


Figure 1. Landsat mosaic showing Gypsy Moth infestations in Ohio in 2001.



Figure 2. Ohio Counties in Gypsy Moth Quarantine. Courtesy of the Ohio Department of Agriculture.