MICHIGAN STATE UNIVERSITY EXTENSION

Forestry Fact Sheet 20
August, 1992

PIN OAK AND GYPSY MOTH

by
Russell Kidd, MSU CES

Preparing Your Woods for an Outbreak

Chances are if you live or vacation in Michigan's Northern Lower Peninsula, you are already familiar with the gypsy moth. If not, be patient. With nearly ten million acres of "host" forest statewide (mainly oak and aspen), most of Michigan's 83 counties will see some defoliation by this hardwood feeder during the next ten years.

Gypsy moth caterpillars are very fond of northern pin oak, a type of oak common to the dry, sandy, upland soils of north central Michigan. Stress caused by repeated defoliation, drought and age can combine to weaken these trees and may cause them to die.

Following are some commonly asked questions about northern pin oak forests.

What is the difference between northern pin oak and other oaks?

Northern pin oak, also called scrub oak, is a member of the red oak family. While similar in appearance, it lacks the size and form that makes northern red oak such a valuable timber tree. Because many originated during Michigan's logging era fires, Northern pin oak forests often consist of trees that are very close in age. They occupy dry, sandy soils where trees such as jack pine, aspen or white oak may also grow. These forests are best managed by clearcutting blocks of mature trees. Seedlings covering the forest floor and sprouts from freshly cut stumps respond to the full sunlight and another forest begins anew.

Forests of northern red oak require better soils than northern pin oak forests and often include red maple, aspen and white pine. Seedlings grow from acorns dropped by mature trees and the forest is thinned regularly to help encourage young oaks to grow.

Is northern pin oak of any value?

Wood from northern pin oak is used to build pallets, as a source of pulp to make paper and for firewood. Deer, turkey, squirrels, ruffed grouse and a variety of woodpeckers and songbirds make their homes in northern pin oak forests.

Why are repeated defoliation by gypsy moth more likely to kill northern pin oak trees than other oaks?

Northern pin oak is a short-lived tree. While white oak and northern red oak trees may remain healthy at 125 years of age and beyond, most northern pin oak begins to decline in vigor a early as 50 years of age. Much of Michigan's northern pin oak forestland is 70 to 90 years old and is riddled with wood decay and other problems. In addition to this age-related stress, the sandy soils can

intensify the effects of droughty summers, setting the stage for problems when defoliation occurs. Under these circumstances, two to three back-to-back defoliations may eventually lead to tree death.

What steps can be taken to reduce the effects of defoliation on a small (10-40 acres) northern pin oak woodlot?

The key is to encourage a healthy woodlot. Trees that are growing well and have plenty of available water and nutrients will recover quickly from the stress of repeated defoliation.

The first step is to remove dead or dying trees from the woodlot. These can rob healthy trees of valuable light, helps to eliminate good egg-laying surfaces. Be sure to leave scattered "den" trees, however, since these provide shelter for gypsy moth predators like woodpeckers and small mammals. A good den tree may be partially hollow, closed at the top, with an opening part way up the trunk. Avoid leaving den trees that are covered with loosely attached bark. Female gypsy moths like to lay eggs beneath these bark flaps One or two den trees per acre is adequate.

Next, learn to evaluate trees by their crowns. Those with the largest, best-developed crowns can be considered "crop" trees and should be favored over trees with yellow, poorly developed leaves or those with a large number of dead branches. Trees with crowns that touch or that interfere with crowns of crop trees should be removed. Consider keeping as many red pine and white pine crop trees as possible. These mature pines are not bothered by gypsy moth and will scatter seed for future pine seedlings.

Some other steps to consider:

- Make small (1/2 to 1 acre) openings and plant red pine
- Remove patches of mature aspen (poplar) tees since they are especially vulnerable to attack by gypsy moth. Aspen will quickly resprout in these openings and provide excellent food and cover for wildlife.
- Rid the woodlot of manmade debris--lumber, old fence posts, deer blinds, tires--that might attack egg-laying female moths.
- Inspect travel trailers and other recreational equipment for egg masses before storing in or near the woodlot.
- Store firewood away from the woodlot and keep covered to prevent hatching caterpillars from es-caping.
- Remove the scattered white oak trees that are often found in northern pin oak forests. Their large, dead branches and loose, flaky bark make them a favorite of egg-laying female gypsy moths.
- Leave large, dead logs scattered on the ground to encourage ground beetles and other insects that feed on gypsy moths.
- "Release" patches of oak saplings by removing old, overtopping trees.
- Consider planting ash, maple, red pine or white pine near your home to replace the oak. These trees are much less likely to be eaten by gypsy moth caterpillars.

Is it a good idea to spray a woodlot with a pesticide to reduce defoliation?

Not usually. Pesticide treatments are expensive and, if done incorrectly, can cause health and environmental problems. Ask yourself the following questions when considering spraying:

- Has the woodlot been heavily defoliated at least two years in a row?
- Is the woodlot in need of thinning?
- Have recent droughts or other problems caused additional stress on the woodlot?

If the answer to all these questions is yes, an aerial pesticide application may help to increase the woodlot's chances of survival. Contact a cooperative extension agent or the Michigan Department of Natural Resources for assistance or for additional information on woodlot management.