



## Firewood Alert - Leave Firewood at Home!



### Firewood Threatens Apostle Islands Forests

Firewood may contain destructive non-native insects and plant diseases. Bringing firewood into the park from other areas may accidentally spread pest insects and diseases that threaten the health of our forests. Management of trees infected with these pests involves drastic measures, possibly including complete removal of all trees (infested and otherwise) in the immediate and surrounding areas. To help protect Apostle Islands forests, do not carry firewood into the national lakeshore. Only use firewood collected in the park near the location for the campfire. Dead wood on the ground in the park's forested areas or unvegetated beach areas may be collected for firewood.

#### Forests Under Attack

Apostle Islands forests face an immediate threat from two destructive non-native insects. The emerald ash borer is a wood-boring beetle that is attacking North American Ash trees. The ash borer can be easily spread in firewood, which may look normal, but still be infested with the immature stage of these insects. This beetle was first identified near Detroit, Michigan in 2002. Within two years, more than 3000 square miles in southeast Michigan were infested and more than 5 million ash trees were dead or dying. It has now spread to parts of Ontario, Ohio, Indiana, and Michigan's Upper Peninsula.

The gypsy moth is one of North America's most devastating forest pests. It is known to feed on the leaves of hundreds of species of plants, but its most common hosts are oaks and aspen. During gypsy moth "outbreaks", the caterpillars defoliate trees. Several consecutive years of defoliation can kill the host trees. The gypsy moth was introduced in Massachusetts in the 1860s. Significant numbers were first found in the Apostle Islands in 2000. Monitoring traps on several islands indicate that Basswood and Stockton islands currently host the highest populations.

#### What is at Stake?

A major concern with gypsy moth infestation is the potential loss of economically critical and ecologically dominant oak species. Oak wood is in high demand for furniture, flooring, cabinets, and firewood. The acorns are an important food for many animals.

Emerald ash borer infests black ash (*Fraxinus nigra*), green ash (*F. pennsylvanica*), and white ash (*F. americana*). Black ash is particularly common in Apostle Islands wetlands. Ash wood is used commercially for furniture, flooring, cabinets, tool handles, and baseball bats. Native Americans used ash wood for fish spears, snowshoe frames, sleds, cradleboards, bows, arrows, and canoes. Splints of black ash are highly preferred for basket making.



Black ash baskets

## Emerald Ash Borer

The adult emerald ash borer is slender and a bright, metallic, coppery-green color. It is about one-third of an inch long, making it difficult to spot in tree leaves. The larval, or immature, form of the pest destroys live ash trees by tunneling under the bark and eating the vascular tissue that supplies nutrients to the tree. The tree starves to death within three years after the vascular tissue is destroyed.



Emerald ash borer larva



D-shaped borer exit holes in bark.



Adult emerald ash borer



Larval feeding tunnels beneath the tree's bark.

## Gypsy Moth

The male gypsy moth is about one inch long and has brown wings with black wavy markings. The female is slightly longer and has white wings with black markings. Only the males can fly. The adults mate in late July or early August and the female lays from 500 to 1000 eggs in a mass covered with velvety hairs from her body. The larvae (caterpillars) hatch in the spring. They climb to the treetops, spin a thread, and dangle from it waiting for a wind to help spread them



Egg masses are usually placed on tree bark, but can also be found on other surfaces. Unknowingly moving egg masses attached to vehicles, outdoor furniture, and firewood helps spread gypsy moths.

through the forest. The caterpillars feed on leaves, shedding their skin 4 or 5 times as they grow before metamorphosing into adult form in mid summer.



Adult female (white) and male (brown) gypsy moths



Gypsy moth larva (caterpillar)

## Stop the Invasion

Transportation of firewood may be what brought gypsy moths to the Apostle Islands. It is the leading cause of spreading the emerald ash borer invasion to

new forests. Preventing the spread of this beetle is the most important thing we can do to protect North American ash trees.

**Do Not Carry Firewood into Apostle Islands National Lakeshore!**

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