The gloworm

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The Pine Beetle, Nature's Grand Plan for Sustaining Wildlife - Out of Control

Sometimes it is difficult to remember nature's original role for an insect when it is totally out of control. In the Wildlife Habitat Evaluation Program (WHEP) 4-Hers learn that most wildlife benefit from living on edges. In the aerial photo assessment of land's suitability for wildlife you quantify the edges that a transect, or line, across the map crosses. A line crossing a neighborhood, water, land, field and a forest crosses 4 edges. Each edge, such as the riparian zone along a stream, supports wildlife by providing more of the resources it needs than can be met in the center of a forest or field. I remember discovering this by observation while on faculty at Murray State University and taking teachers into the Land Between the lakes to observe wildlife. After excursions deep into the forest to view wildlife we noticed greater diversity along the roads. Passing through agricultural areas we found a greater density along grown-up fence rows and in the woody strips between the highways and fields. Wildlife was thriving along edges. In nature pine beetles role is to open meadows in forests, thin out less productive trees expediting the return of minerals to the soil for more productive trees. Those important roles endemic beetles play the millions-of-years-old Shiva-like dance of creation and destruction have long been responsible for forest renewal and wildlife habitat creation.

After a drought, lightning or other event injures trees, the endemic beetles respond to the smell of stressed trees like a dinner bell. The tree's crown may be the first noticeable sign as its needles yellow, turn red and finally brown. Careful inspection will reveal the small pitch tubes on the trunk where the beetles bored through the bark. Pulling off a piece of the bark may reveal the characteristic "S" shaped galleries underneath. The beetles spend most of their time under the bark where they get their food and their larvae develop. The so-called blue stain fungi, the beetles bring with them, plugs the trees sap-producing cells, protecting the beetles from the trees defense and likely stopping the flow of water and nutrients killing the tree. As you have likely surmised, the fungus stains the wood a bluish color.

As soon as a pine is dead the some beetles (southern pine beetle) depart for healthy trees (Ips can stay longer depending on moisture and availability of phloem tissue). Now, instead of cutting these trees you may want to consider leaving them standing, for a while, since dead pine trees become the host for clerids, or checkered beetles, and woodpeckers that prey on the pine beetles. That said, damage can be minimized by immediate identification of and eliminating infestations by cutting the infested trees and others in the vicinity that the beetles could move to. So you need to be regularly cruising timber for the warning signs of a beetle attack.

The Homochitto National Forest in Mississippi is currently experiencing a devastating and unanticipated attack after a decade and a half lull. Over 500 active spots covering over 800 acres are involved. The depressed wood market makes harvesting these still useful trees relatively uneconomical. Acerbating the value of this wood is the blue stain that does not affect its strength or usability. Personally, I think the beautiful bowl turned out of blue stained pine with stain appearing to drip over the lip and run down its sides is rather beautiful. You may want to look at this glowworm on our website to see it in color. See:
http://msucares.com/newsletters/pests/gloworm/index.html

As Storyteller Matt Miller would say, "and that ain't all." Climate change is making carbon storehouses (pine forest) further north attractive to "mountain" pine beetles and beetle killed trees releases a huge amount of carbon into the atmosphere as they decompose further accelerating climate change. Historically, cold winters have made northern pine forest inhospitable to pine beetles and kept them in check – but our winters are warmer and the beetles are on the move, north. Standing dead trees and the accumulated leaf litter increases the potential for forest fires. Historically, healthy forest have acted as carbon sinks keeping carbon out of the atmosphere but the advance of the pine beetles is releasing this carbon.

That leaves us with two and a half perfectly good reasons to harvest blue stained wood. Reduction of forest fires and reduction of carbon emissions from decaying wood with wood salvage as the half a good reason! It would appear a good education program explaining the value of using blue stained wood for studs and in other places you will not see it if it bothers you and for its artistic value where you will see it is desperately needed. The turned blue-stained bowl made from pine on the first page reminds me of Native American pottery and is represents an outstanding and unrealized economic product from beetle/fungi stained wood. Dr. John Riggins' research in the Entomology unit of our department has revealed that blue stained wood is much more desirable for wood composites. Federal dollars to put foresters and logging crews in the woods might help.

The blue-stained bowl was turned by Bob Gresham, owner of the Tishomingo Stone quarry in northeast Mississippi. He quarries sandstone and makes sandstone yard ornaments as well as beautiful turned bowls - his winter avocation.

Thanks to Dr. John Riggins for reviewing and contributing to this article.

Abbigail Reese Painter became the Youngest Member of our "I Ate a Bug Club!"

Our youngest granddaughter, at 23 months, refused to allow her brother and sisters to eat a chocolate covered cricket without her having one! The chocolate covered crickets are a hit at many entomological events!

Dr. John Guyton, Editor
jguyton@ext.msstate.edu
662-325-3482