

Forest Insect and Disease Newsletter

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Timber mats: Potential conduits of invasives

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Timber
mats.
Photos
by



Minnesota Dept. of Agriculture

There are abundant means for forest pests and diseases to spread throughout our environment and thus become introduced in new territories. It is an ongoing task to keep up with the movement of material that can potentially transfer unwanted organisms. In an effort to slow the introduction of unwanted forest insects, seeds, viruses, and fungal spores, wood products may be regulated by treatment or restrictions on movement.

Recently, a large yet elusive wood product has appeared on the radar as a potential conduit of pest introduction: timber mats. These mats are commonly and conspicuously used in construction, utility installation, and logging to build temporary roads in muddy, swampy, or unstable ground. Timber mats provide temporary bridging, roads and wetland rights-of-way, as well as support for trusses and most track equipment.

Timber mats are also referred to as dragline mats or crane mats and, as these names suggest, they are used for supporting cranes and heavy machinery. The mats are constructed of hardwood timbers 8-12 inches thick and 16-40 inches long, simply bolted together in a series of three or four to create a very large and sturdy surface to support extreme weight in sensitive environments or in soft ground conditions. The mats are then laid out and can be linked together, sometimes for miles, through natural areas, forests and wetlands.

However, for all the benefits derived from using timber mats, there are also some concerns about their potential to introduce new pests to the environment. Timber mats are most frequently constructed of green hardwood timbers. This means that the timbers are often harvested shortly before the construction of the mats and without being treated, heated, or dried. When milled for flat surfaces, bark can be retained around the corner edges. These timbers can be harvested states away from where they are employed. The mats are frequently transported great distances into natural areas. Many of the hardwood timbers used to construct a timber mats are ash, oak, and maple—species chosen for their strength, but also at risk for moving unwanted pests.

Used timber
mat. Photo
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The timbers in these mats may originate from mills in states with federal quarantines for forest pests. Both the Asian longhorned beetle and the emerald ash borer are tree-killing insects that carry out their larval life beneath the bark, thus allowing them to easily hitchhike to new areas in untreated timbers, especially when residual bark remains. There are now 16 states east of Minnesota with emerald ash borer and four with Asian longhorned beetle federal quarantine boundaries in place.

Timber mats are expensive but durable, making them valuable for re-use. After being in place in soil and mud on tracks, roadsides, and in forests for weeks to months, the mats can be transported to new sites. If not cleaned, they may harbor many soil organisms and seeds of noxious weeds.

In an attempt to mitigate the potential for these mats to pose a risk, some actions have been taken. Contracts with the Minnesota Department of Natural Resources now include specific language regarding the cleaning of mats as equipment. Maine has placed restrictions on mats coming from out of state: they must be entirely debarked. Mills and distributors of timber mats in Illinois are being informed of quarantine regulations and risk by the USDA Animal and Plant Health Inspection Service, Plant Protection and Quarantine staff. Distributors of timber mats in Minnesota have been contacted by the Minnesota Department of Agriculture regarding the intrastate quarantine restrictions. Contractors that purchase, rent, and use this product need to know the regulations as well as the risks.

In addition to a more thorough cleaning of the mats before they are moved, there are alternatives for hardwood timber mat construction and use that would reduce the risk of moving invasive pests and diseases. These include using locally harvested timbers and requiring that all bark be removed from the timbers. The wood could be treated, and there is also a laminated timber mat product available. Timber mats serve a variety of purposes, not the least of which is to help protect sensitive wetlands. However, considering what has been learned about the introduction and spread of invasive pests and diseases in the U.S. over the past ten years, timber mats should be viewed as a pathway for invasive species of potentially high risk. Now is the time to act.