weather matters

This year's wild weather may have stressed golf course trees, leaving them more susceptible to a host of insects and diseases. *By Nicole Wisniewski*

The mild winter and early spring did more than make flowering plants bloom early on golf courses this year. Some insect and disease problems are showing up early as well.

And if golf course superintendents aren't paying attention, they could miss some vital opportunities to stop them before they cause serious damage.

"Trees work similar to the human immune system," says Michael Bova, a project coordinator with the Davey Resource Group and an International Society of Arboriculture Certified Arborist and Certified Tree Risk Assessor. "When a person's immune system is stressed or if a person is lacking in vitamins or minerals, he or she is more open to catching viruses or infection. Poor maintenance practices and unusual weather events create similar situations with trees where they can become stressed and enter into survival mode. But a healthy tree in good condition can fight off decay, insects and diseases pretty well."

And, this year, weather conditions have increased insect pressure, so unhealthy trees are at greater risk of attack.

"A living thing is a living thing, and when it gets stressed, it's open to more problems," says Thomas Schlick, CGCS, Southern division manager of Davey Golf Course Maintenance. "You have to be proactive with trees, especially during a year like this, or you're going to miss some telltale warning signs of trouble."

WACKY WEATHER. Whether it was an unusually mild winter, early spring or a mix of out-of-place wet and dry conditions, the entire country has experienced some awkward weather patterns so far in 2012. In fact, every state in the U.S. experienced at least one record warm daily temperature during the month of March.

Temperatures in the lower 48 states were 8.6 degrees Fahrenheit above normal for March and 6 degrees higher than average for the first three months of the

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DREAMSTIME

When trees aren't stressed, they're able to fend off decay, insects and disease – under stress, defense becomes much tougher.

year, according to calculations by the National Oceanic and Atmospheric Administration.

Unusual weather stresses trees, making them susceptible to disease and insect pressure.

A warm winter followed by a warm spring seems to have resulted in earlier insect emergence in many regions. Overwintering and migrating insects appeared earlier, creating time for possibly more insect generations and larger populations. "There is a synchronized life cycle between plants and pests.

Once spring hits, there is a flush of new growth, so a rush of opportunistic pests gravitate toward plants during this time to go after new leaves and blossoms," says Anand Persad, an entomologist and technical advisor with The Davey Institute. "New growth is susceptible because plants must build up their immunities to pests over time, and newly planted trees, specifically, have not had time to do so."

New growth is especially attractive to insects.

Each region of the country encounters different plant challenges based on their specific weather patterns.

On the West Coast, Bova says 5- to 10-degree cooler temperatures and decreased rainfall meant a drier winter. Spring hasn't brought the rain it normally does yet. This increases drought stress and, in the West, drought-stressed pines are more susceptible to bark beetle attacks. "We're almost guaranteed to see more of these pests this year," Bova says, adding he also expects to see aphid and whitefly problems on ash trees this year.

As temperatures warm up and rains arrive late, a disease that tends to crop up in the West is anthracnose on sycamore and ash trees. "This disease turns leaves brown as they try to leaf out, delaying full leaf out until June when they would normally leaf out in April," Bova says, adding that better air circulation between tree and shrub plantings can help limit this disease.

In Florida and Texas, the situation is the same with warmer temperatures coming earlier without the normal rainfall. "Florida's spring came three weeks early, and it's been abnormally dry, which has brought a lot of plant wilting," Schlick says. "The moisture is being sucked out of the ground, and the drought is stressing plants. As trees continue to stress, insects could get the upper hand on them."

In Texas, drought-stressed trees are suffering from hypoxylon, a fungus that causes cankers in oaks and other hardwood trees. "This disease infests oaks that are young and stays under the bark waiting for the right conditions to spread," says A.D. Ali, a technical advisor with The Davey Institute and a Board Certified Master Arborist. "Once the tree is older and under stress from root disturbance or drought, hypoxylon kicks in and there is no cure. If you catch it early you can see the powdery spores on infected limbs and prune them off to try to prevent the spread of the disease."

In transition zone areas like North Carolina, Ali expects Eastern tent caterpillar, bagworms and Japanese beetles to arrive early and be more abundant.

In the Northeast, spring is two to three weeks early and there has also been a rainfall deficit, says Mike Cook, an ISA Certified Arborist with The Care of Trees, who takes care of trees on more than 15 golf courses in the Northeast. Cook has seen pine saw fly out early this year, and he also expects boxwood leafminer to be a problem.

Leaf diseases also seem to be troubling apple and crabapple trees this year in the Northeast, particularly apple scab and cedar apple rust. "If superintendents weren't out at the beginning of April with a preventive fungicide application to keep the trees looking good, they missed their window this year because it came early," Cook says, adding that a lot of treatment windows will have to be adjusted to reflect the earlier season.

And in the Midwest, spring came three to four weeks early, meaning some flowering plants were blooming at the end of March when they usually don't bloom until early May, points out Grant Jones, a technical advisor with The Davey Institute.

Compared to last year's exceedingly wet spring in the Midwest, this year has been drier. In some ways, this is good news, Jones says. "Last year, the wet weather meant a lot more disease infection, like apple scab and cedar apple rust," he says. "A lot of those disease spores are still on the leaves. More spores usually mean more disease pressure. But there hasn't been a lot of rainfall, so the conditions haven't been favorable for disease to develop yet. While there is a lot of disease in the environment, whether it becomes a bad year depends on how much moisture we get."

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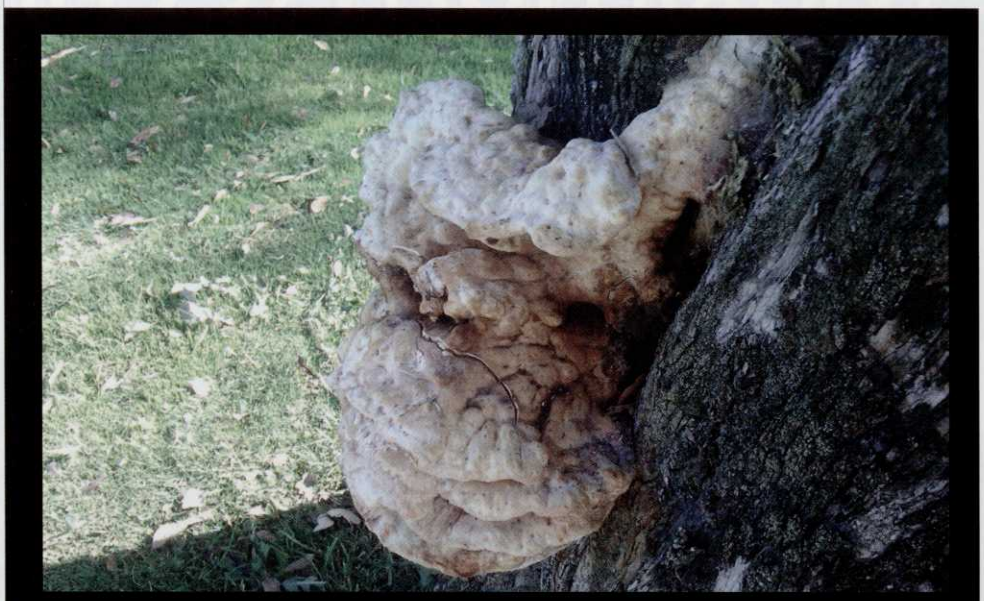

Last year's wet spring made conditions favorable for many tree diseases to flourish.

Part of the uncertainty of predicting how this will affect plants this year comes from not knowing if these temperatures will continue or what the rainfall pattern will be like. For instance, if warm temperatures persist and moist weather conditions follow, diseases could show up earlier and more widespread than in previous years.

MONITORING IS A MUST. Because weather patterns are unusual this year, golf course superintendents need to be more mindful of the condition of their trees and shrubs. Davey professionals encourage early and persistent scouting to spot early signs of disease or insect infestation.

Additionally, golf course superintendents should avoid placing any additional stress on their trees and shrubs.

"Stress is like a catalyst to lurking problems," Cook says. "We're already expecting to see more stress. And it's important to monitor how this year's weather affects trees. For instance, if trees leaf out and are experiencing a lack of moisture in the ground, it can't be helpful for root systems and the growth of those trees. We may have stunted growth this year on some trees or trees that begin to decline as a result of stress."

Stress comes in many forms. On the West Coast, Bova sees salt accumulation around golf course trees that are being watered with recycled or nonpotable water. While the practice is sound for increased sustainability, higher salt accumulation in trees, which tends to happen during years when there isn't enough fresh rainwater to wash the salt away, can inhibit trees' nutrient uptake.

Golf course trees that are pruned improperly or are wounded from extreme weather, like the early, damaging winter snowstorm that impacted the Northeast in October of 2011, could also be susceptible to increased insect and disease pressure. "Trees are still recovering and trying to survive, so that might give secondary pests and diseases a foothold into the tree," Cook says.

Limbs that do not heal properly or trunks that are damaged from equipment can lead to the increase in decay and the presence of sulfur fungus that we are seeing in the West. Decay can spread and lead to branch or root rot and, ultimately, a potential safety issue if the tree isn't able to compartmentalize that decay from spreading. "By the time you're seeing conks on the tree, it's likely you have significant decay," Bova says.

Ensuring broken branches are properly pruned in these situations so trees can heal can help limit these problems.

Ali jokes about another situation he calls golfer canker, where golfers accidentally hit their balls into tree trunks, creating a trunk deformity and a place for tree decay to grow. "Unfortunately," he says, laughing, "the only cure for that is for players to improve their level of play." **GCI**

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