Pest Update (April 6, 2016)

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Note: samples containing living tissue may only be accepted from South Dakota. Please do not send samples of dying plants or insects from other states. If you live outside of South Dakota and have a question, instead please send a digital picture of the pest or problem. **Walnut samples may not be sent from any location – please provide a picture!**

Available on the net at:
http://sdda.sd.gov/conservation-forestry/forest-health/tree-pest-alerts/

Any treatment recommendations, including those identifying specific pesticides, are for the convenience of the reader. Pesticides mentioned in this publication are generally those that are most commonly available to the public in South Dakota and the inclusion of a product shall not be taken as an endorsement or the exclusion a criticism regarding effectiveness. Please read and follow all label instructions and the label is the final authority for a product's use on a particular pest or plant. Products requiring a commercial pesticide license are occasionally mentioned if there are limited options available. These products will be identified as such but it is the reader's responsibility to determine if they can legally apply any products identified in this publication.

Plant development

The plums are in bloom along the woody draws and ditches across the state. The crabapples are already in bloom in some of the southern counties and in Rapid City I saw a few lilacs just about ready to flower – it's a very early spring!

Timely topics

Tent caterpillars egg masses are beginning to hatch in southern South Dakota. It is still possible to prune out the infestations since the nests are small and the caterpillars have not migrated out yet. However, over the next few weeks these "worms" will begin to move out and feed on the expanding foliage of cherries, apples and other preferred host. Once the insects begin to feed throughout the canopy, it may require an insecticide application to manage the extent of defoliation. The most common available insecticides for managing this insect are ones that contain carbaryl or malathion as the active ingredient. Carbaryl is commonly sold as Sevin while malathion is sold as Malathion. *Remember spraying any fruit tree during flowering will have the undesired effect of also killing any bees that are pollinating the flowers so avoid this time period.* Homeowners also now have another option for managing tent caterpillars and other moth and beetle larvae, Captain Jack's Deadbug Brew™ from Bonide (you have to love the name). This product contains spinosad, a natural insecticide derived from an actinomycete bacterium. Spinosad has been available to commercial applicators for years but now products can be found in the market for homeowners. Spinosad exhibits low toxicity to mammals and while toxic to pollinators at the time of the application, once the residue has dried on the foliage (about 2 or 3 hours) there is little risk to honeybees (*Rev Environ Contam Toxicol* 2003: 179: 37-71). However I still recommend avoid spraying trees in bloom.

E-samples

I have had several tree owner concerned about the color of their Scotch pine. **Yellowing Scotch pines** are common in the landscape during the dormant season. The discoloration begins in early autumn and reaches its peak in late winter. During this time period the needles may loss up to two-thirds of their chlorophyll (the green) and have the carotinoid content (the yellow) increase by a similar amount. The normal green color returns, often very quickly, once the trees resume growth in the spring.

The problem is often worse during winters that are sunny. The degree of discoloration is under strong genetic control so some seed sources are more apt to discolor than others. There is not much anyone can do to correct the problem other than not look at the tree during the winter!

I received a picture this week of a **split elm**. All elms, particularly some of the newer hybrid elms, are prone to forking and developing two competing leaders. This usually occurs before the tree is 10 feet tall so is easy to correct if someone takes a pair of hand pruners and snipes one of the two off the first year they form. Elms continue to develop competing leaders so this can become an annual pruning event until the tree reaches 10 feet or so. If the two are permitted to grow, the union between them is very weak and easily splits as seen in the picture. There is still time to complete this pruning task so anyone having a young elm in their year (or any other tree species) should go out and remove one of the two competing leaders while they are easy to remove with just a hand pruner.

I also received a picture of an old **flush cut** on a silver maples. The branch was pruned off several years ago and apparently sap still runs from it each spring. This is not too unusual, almost all large pruning wounds on a maple will "bleed" for several springs in a row. The concern to me is the flush cut. Cutting the limb off almost parallel to the trunk can result in cracks forming and weakening the integrity of the trunk. The larger wound also exposes more tissue to decay.

Samples received / Site visits

Meade County **I found this insect flying around my ash trees in the belt. Is this the emerald ash borer?**

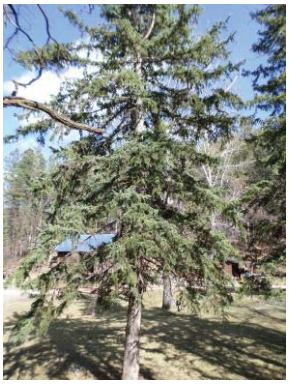
No, it's a little early for the emerald ash borer to be flying (and it has not yet been found in the state). This insect is the banded ash borer (*Neoclytus caprea*). The adults begin emerging in mid-April so these are a little early but it's been fairly warm in the Black Hills this spring. These insect attacks dead trees, but it will attack trees that are dying from some stress, drought, or even old age.

Mellette County **Dying riparian American elms**

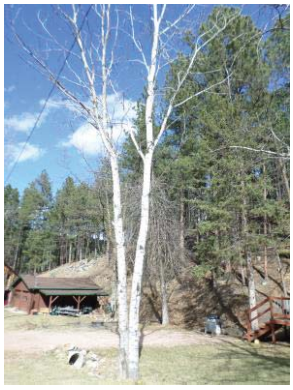
I was asked to look at some dying oaks along Oak Creek in Mellette County. Apparently trees have been dying along the creek and draws for the past few years. Those that have not travelled in Mellette, Todd, and Tripp counties might be surprised to learn of the riparian bur oak forests that line the many creeks and draws of these region. During the drought in the mid-2000s we lost a significant number of these trees to the two-lined chestnut borer so I was concerned that perhaps another outbreak of this insect was brewing.

When I arrived and looked at the first tree I was puzzled to find that it was an American elm, not a bur oak, and then noticed all the trees of concern along the creek were dying American elms. They are easy to separate at this time, even from a distance, as the elms are beginning to leaf out while the oaks buds are still tight. The trees were dying or had died of Dutch elm disease. There has been in increase in mortality due to this disease in the past decade, despite the disease having been found in these three counties since 1975. The disease is transmitted along the streams primarily via bark beetles, though trees in close proximity to one another (less than 40 feet) can spread the disease through root grafts. The vector in this instance appears to be the European elm bark beetle, *Scolytus multisriatus*, based upon the gallery pattern found beneath the bark in some dead trees. The galleries are symmetrical, with the larval mines not crossing. Another vector, the banded elm bark beetle (*S. chevyrewi*) has asymmetric galleries with the larval mines overlapping (see the March 9, 2016 issue of the *Update*). The egg galleries for both these insects run parallel to the grain. There is also a native bark beetle (*Hylurgopinus rufipes*) but its egg gallery is perpendicular to the grain. At the landscape level there is not much that can be done other than, when possible, remove and burn (or debark) infected trees. This will reduce the number of beetles carrying the disease from infected trees to healthy ones.

Pennington County Dying spruce and aspens within a campground



The case of the dying spruce. There were several Black Hill spruce on this property that had canopies that were becoming open and thin. Generally with trees in some degree of decline it's not what *is* the problem, but what *are* the problems and these trees were no exception to this rule. The twigs were covered with spruce bud scale (*Physokermes piceae*). The adult female is usually found at the whorl where the lateral twigs are attached to the shoot and resembles a reddish bud. It's young, the crawler stage, and mom both feed by sucking the sap from the twig. Dense infestations can result in some needle loss but rarely more than that so it alone cannot be the reason for the decline. There were also slightly swollen branch stubs along the lower trunk that were exuding pitch. Many of these pitched stubs also had a blackened knot. These symptoms appear to be due to red ring rot (*Phellinus pini*) a white pocket rots that infects pines and spruce in our region. The decay is often limited to the heartwood, but in severely weakened trees it may extend into the sapwood. Trees with this decay may remain standing for many trees and provide valuable habitat for cavity-nesting animals. Infected trees should be removed when their fall path might intersect buildings, parking lots and other areas frequented by people.



This same site was also occupied by declining or dead quaking aspen and these trees also had several significant problems. The trees were infected with cryptosphaeria canker (*Cryptosphaeria lignyota*), one of the most common canker diseases of quaking aspen. This canker disease can eventually girdle branches and trunks killing the tops. This also may provide an infection court for decay fungi and the trees were also covered with the conks of the aspen heart rot (see the March 16, 2016 issue for more information on this decay fungi). If there were not enough, the trunks were peppered with the D-shaped exit holes from the bronze poplar borer (*Agrilus liragus*). These three stressors, the

two fungi and the borer, are generally associated with declining trees and predisposing stressor, the root of the problem, might be site related. The trees are in a lawn area of a campground and compaction may be the primary issue.

Tripp County **Rapidly declining Scotch pine**

According to the owners the tree looked fine last summer then died. This symptom pattern is consistent with pine wilt disease, a disease caused by a small nematode (*Bursaphelenchus xylophilus*). Pine wilt is primarily a problem with the exotic pines, not native, and is a serious threat to Austrian and Scotch pines in the southern half of our state and states further south and east. The symptoms first appear in early summer, often only a branch or two have discolored needles, but the entire canopy turns brown by autumn. The disease has been appearing in southern South Dakota since about 1982 and has resulted in the loss of many exotic pines in this region. While we usually do not see the symptoms begin until summer, Rick, an urban forester with the South Dakota Department of Agriculture emailed me that he has seen some trees already turning this year. We often see more wilt following warm winters.

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