**Bark Splitting or Cracking in Trees**

Based on an article by Linda Chalker-Scott Ph.D Washington State University

One of the horrifying things in gardening is to go out and discover one of your trees has a split in the bark. The good news is that it might not mean the death of the tree but a crack can allow diseases to enter. Splits most commonly happen in thin-barked trees like fruit trees and newly planted or young trees.

There are several causes of tree splitting. Cracks can often occur when there is severe cold followed by warm weather, when trees put a lot of growth late in the season. This growth can be caused by high temperatures, humidity and nitrogen levels. Do not fertilize too late in the season. Dry spells followed by wet spells can also cause cracking. The damage is found on the southwest side of the trunk. Cracks can be up to several feet long. Sometimes the cracks will heal by winter only to have them open up again in cold weather.

One of the things you see in Arizona is sunscald. This frequently happens in the winter when the bark is not shaded by any leaf cover. The damage of sunscald may not be obvious until summer when the outer bark starts to peel away in the damaged area. Fortunately this is an easy problem to solve. Newly planted and young trees can be wrapped (use a product designed for that purpose) to protect the trunk from the sun.

Once the tree shows cracking do not paint, caulk or apply any product in the mistaken belief that the tree needs a “bandage.” The recommended treatment is to take a sharp knife and cut around the split creating a very clean edge to the wound and then let nature take it’s course. Trees are very good at being able to “callus” over quickly. Over time the new growth will grow over the wound.

**Cracks Caused by Disease**

There are a number of diseases that can induce cracking. Cankers are fungus diseases that cause the bark to discolor and shrink and then...
crack. There are several that appear in Arizona. Generally cracks are different than sunscald and cold weather cracks so you should be able tell them apart. Fungus will usually spread and affect other branches and nearby trees. The best thing to do is to remove infected branches as soon as the canker is spotted and burn the branches immediately.

To treat the tree (vs. simply removing infected branches) first find out which disease you have. There are chemical controls; find something that is labeled to treat your disease. Bordeaux mixtures are often used to treat fungus, but read the label. They are available at some big box stores and nurseries.

“Dressing the Wound”
If you haven’t heard, STOP dressing wounds on trees with paint, asphalt, artificial bark, gutter and flash sealer, concrete sealer, collagen, pectin, hydrogel, aloë gel and any oil based product. ZIP, NADA, NO!!!!! Nothing, read again, NOTHING!! Hope I emphasized that enough. The entire idea of dressing a tree wound is old news. In fact decades old, so get over it and simplify your life. None of this stuff works and in (most) cases does more harm than good. Dressings tend to seal in moisture, making a perfect environment for pathogens and decay and rot to progress. Trees don’t “heal.” They isolate damage “through the formation of suberized, lignified wood that physically and chemically repels invasion. A callus develops at the edge of the wound and gradually expands towards the center. This wound remains for the life of the tree; bark does not regenerate itself the same way skin does.”

Bubblewrap and wood glue should not be used to repair trees!

**Horticultural Oils**

Horticultural oils are sometimes recommended for pest control but are rarely used much as more traditional pesticides. They can be a good alternative to the usual pesticides. Horticultural oils are a highly refined product made from petroleum, vegetable and mineral oils. They have the advantage of decomposing quickly and conserving beneficial insects to a degree.

Dormant oil was the first commercially available horticultural oil. It was designed just for winter applications. Since then a variety of products have come on the market that can be used winter and summer. Dormant oils evaporate slowly and stick to plant surfaces. They are good for aphids early in the spring, caterpillars that winter as eggs, mites that overwinter and scale. Summer oils are designed obviously for summer use and are sometimes called superior oils. These are lighter and evaporate quicker so they are less likely to damage the plant. When choosing an oil do not get the two types confused.

When you buy a horticulture oil product read the label first. There are two things to look for: the distillation temperature and the UR designation or percent unsulfonated residues. Horticulture oils can be phytotoxic and the residues play a role in how serious the damage can be. (Phytotoxicity means that the oil has a toxic effect on plant growth.)

**Distillation temperature:** the higher the temperature the slower the oil evaporates, staying on the plant longer. A high temperature oil is usually a dormant oil to be used in the winter. Lower temperature oils are called
superior oils or summer oils and are designed to be used on plants during the growing season.

**UR designation, or percent unfulfonated residues:** Sulfonated residues contribute to phototoxicity and can cause foliar damage. Purer oils have a higher percentage of UNsulfonated residues. The number is for UNsulfonated residues and it should be no lower than 92%. Today’s oils have been refined enough that phytotoxic effects are now uncommon but some plants are more susceptible to damage. Juniper and spruce will lose the blue color if sprayed because the blue color comes from a wax on the needles, which is oil soluble. Some believe that roses can also be damaged by the oils. On grapevines there is some evidence of reduced fruit set with oils. Do not spray if leaves are wilted or if the humidity is too high. A factor that diminishes effectiveness is when the oil isn’t agitated enough, resulting in a separation of the oil and water. Do not use on young or tender plants.

Oils work by clogging the breathing pores of insects and prevent oxygen from entering the eggs of insects. The oils will also interact with cell membranes. There is some research that it even deters insects from laying eggs and even feeding.

The oils may last from 24 hours to two weeks depending on the type of oil and the setting it was applied in. In the field the oils degrade quicker than in greenhouse settings. Oil should not be applied at all if the plant has wet leaves, or in a situation where water might wash over the leaves or if rain is expected. Grasses or plants with vertical leaves will need a higher application rate or a product with greater viscosity, otherwise the oil simply runs off the plant. Lastly, they shouldn’t be used as a soil drench because if the oil doesn’t touch the insect it won’t work.

Oils can control a variety of pests, but not all. Lower concentrations work well on aphids, scale, whiteflies and even mites. Higher concentrations work well with Coleoptera (beetles), Heteroptera (true bugs like squash bugs, leaf-footed bugs, assassin bugs, stink bugs) and Lepidoptera (butterflies, caterpillars).

Pests like tent caterpillar and scale are resistant to oils. In the case of the tent caterpillar, researchers think that their dense hair protects them while other insects have thick plates or carapaces which protect them. In the case of scale, repeated applications may generate scale that becomes resistant to the oil.

The decision to use oils and what kind of oil is dependent on the pest you are trying to eliminate. Just like with other pesticides it’s best to know your enemy. First identify the pest. Insects that over-winter are a good target for dormant oils. Insects that arrive in the spring and summer need oils designed for application on growing plants.

When spraying oils make sure you cover both surfaces of the leaves, growing tips, etc.

**DO NOT OVERSPRAY ONTO WATER,** like ponds, rivers, streams, etc. The oil can possibly harm aquatic life as it inhibits oxygen transfer.

Research with oils and beneficial insects have produced good and bad news. Researchers haven’t reached any hard conclusions on some issues. Some studies have shown minimal harm while another has found that oils damage beneficial nematodes. Right now the thoughts run that predators generally move around and so would be less impacted by the oils than insects that take up residence. Chances are some will be adversely impacted when you spray. They are relatively safe for birds, humans and other mammals. As with any pesticide do not overuse; follow the directions on the label.

**Terms can be confusing so a short lesson in horticultural oil.**

**Horticultural oils:** An oil used to control a pest on plants.

**Mineral oil:** A petroleum-derived oil (as opposed to vegetable oils).

**Narrow-range oil:** A highly refined oil that has a narrow range of distillation. Narrow-range oils fall in the superior oil classification. The terms may be used nearly interchangeably.

**Spray oil:** An oil designed to be mixed with water and applied to plants as a spray for pest control.

**Summer oil:** An oil used on plants when foliage is present (also called foliar oils). As with dormant oil, the term now refers to the time an application is made rather than to the properties of the oil.

**Superior oil:** A term originated by P.J. Chapman in 1947 to categorize summer-use oils that met certain specifications. This included a high proportion of paraffinic hydrocarbons and purification that allowed year-round use without phytotoxicity. Since then, further developments have resulted in oils that distill over a narrow temperature range. Most superior oils are now better referred to as narrow-range oils.

**Supreme oil:** A term used to categorize highly refined oils that distill at slightly higher temperatures and over a wider range than the narrow-range oils. Most supreme oils meet the characteristics of a superior oil.

**Vegetable oil:** An oil derived from the seeds of some oil seed crop (e.g., soybeans, canola, cottonseed).

**http://www.ext.colostate.edu/pubs/insect/05569.html**

**http://puyallup.wsu.edu/~linda%20chalker-scott/horticultural%20myths_files/Myths/magazine%20pdfs/HortOils.pdf**
Smoke Trail Ranch, located in Sedona’s red rock country, was acquired by the Arizona State Parks Board in the 1980s. The 286 acre purchase included the original small home, a bunkhouse and the eye catching hilltop ranch house known as “The House of the Apache Fires.” However, the real jewel of Smoke Trail Ranch is Oak Creek. The creek sweeps through the low land creating a pristine riparian corridor shaded with Sycamores, Cottonwood, Alder, Elm and Willow.

Preparations were made to open Smoke Trail Ranch as a state park: the infrastructure laid, the road paved, hiking trails created and a Visitor’s Center constructed. The lone paved road ascends to a parking area and Visitor’s Center atop a small hill with unobstructed, panoramic vistas of Sedona, Cathedral Rock and the Mogollon Rim.

“So where is the Visitor’s Center?” is a frequent comment from guests who don’t realize they are standing on top of it. The viewing decks, on grade with the parking lot, are the actual rooftops of the structures below. Both the structures and their patios have been unobtrusively carved into the contour of the hillside. In today’s more environmentally conscious world, one has to admire the vision of this 1980s design.

The roof deck provides a perfect place to view the bird activity in the Hummingbird Patio below. The patio, at ground level one story below, is flanked on three sides by a red rock building wall, a glass wall and the hillside. The fourth side opens to the park via a broad walkway, shaded by mesquite trees and a large Utah juniper.

In truth, the Hummingbird Patio has never had much to say for itself, other than the artificial presence of a variety of feeders: hanging nectar and seed feeders, suet and a large platform feeder. Although the feeders are very successful at luring a variety of resident and migratory birds, the sterile patio area had no natural plantings that might attract birds, especially hummingbirds. Essentially, it was a patio but not a garden.

This year the park manager envisioned a more “natural” appearance to the patio by augmenting the plantings. Funding was generously provided by the Park’s “Benefactors” group. Then a concept design was drawn up. The patio itself required no structural changes—the challenge was in the plantings: what, where and how many? As a state park, however, the additional question of native plants vs. non-native species inevitably needed to be addressed. While one can argue both sides, perhaps the issue is resolved by watching the visitors enjoying a quiet moment with the birds or researching their finds (A Northern Cardinal? No, a bright red Summer Tanager). The mission of the park is, after all, “conservation and environmental education.” Ultimately, the use of natives was to be preferred but not a limiting factor.

The garden design and plant selection is credited to the creative genius of a park volunteer who just happens to be a retired landscaper. Under his direction, more volunteers and staff discovered the true value of picks, pry bars and shovels and all shared in the “joy” of weeding, hauling, digging, planting and watering. The hillside was eventually stripped of its river cobble, old landscape cloth and ubiquitous Silver Leaf Nightshade. When the dust settled, the only survivors left standing were a few random Globe Mallow.

As with any wildlife garden design, the key elements of water, food, shelter and space needed to be attended to:

**Water:** This was the easy component. The Hummingbird Patio shares a 6’ x 12’ pond with an adjacent patio. The estab-
lished pond is populated with dragon and damsel flies, water striders, algae, mint and ferns. The pond is large enough for birds (or bats) to drink “on the fly” but lacks a “sprinkler” for the hummers. Food: Existing feeders were left in place and augmented with nectar-rich plant species with variable peak bloom periods:
- Honeysuckle, Lonicera Heckrottii & Americana (as rock wall climbers)
- Ocotillo, Fouquieria splendens (both bare root and potted to cap the dry hillside)
- Rocky Mountain Penstemon, P. strictus (in filtered shade)
- Parry’s Penstemon, P. parryi
- Pineleaf Penstemon, P. pinifolius
- Firecracker Penstemon, P. eatonii
- Autumn Sage, Salvia greggii
- Hummingbird Mint, Agastache anise hyssop ‘Heatwave’
- Columbine, Aquilegia chrysantha (in filtered shade)
- Red Yucca, Hesperaloe parviflora

Shelter: The dense foliage of an old growth Utah Juniper supplies the only evergreen foliage. At this time, there are no actual bird “houses”.

Space: The surrounding Mesquite trees and lone Chaste tree were minimally pruned and “laced out” to allow for perching, bird viewing and to provide space below for shade-tolerant plants. Picnic tables and umbrellas provide human outdoor “space.” On cooler days, bird life may be viewed from inside the glass wall of the Visitor’s Center.

Exclusion: Although animal exclusion may not be a “key element,” in a park where the deer are almost tame and Javelina have been observed on their hind legs eating from the platform bird feeder, a split rail fence enclosure has been optimistically added.

This is just the start. Like any garden, it will be a work in progress with successes and failures. What’s next? Perhaps more winter shrubs?

After taking our national bird to the very brink of extinction, our growing interest in birds and our particular devotion to hummingbirds speaks well for us as a society. Arizona is part of the Pacific Flyway, making our diminishing riparian habitats and our home and public bird-friendly gardens particularly valuable. In 2006 this park was designated “An Important Birding Area” (IBA) by the Audubon Society. Birding is a huge economic driver here in Arizona. Locally, Dead Horse State Park has its spring Verde Valley Birding and Nature Festival and Sedona its summer Hummingbird Festival. Currently USFS Red Rock Ranger Station is also installing a Hummingbird Garden, complete with its own rain water collection system. Now, let us all do our part with our own bird-friendly home gardens.

Are you curious as to the location of this beautiful Smoke Trail Ranch and its new Hummingbird Garden? In 1991, after several name changes, Smoke Trail Ranch officially opened to the public as:

RED ROCK STATE PARK
4050 Lower Red Rock Loop Road
Sedona, AZ 86336
928-282-6907
Hours: 8 - 5 pm
Birdwalks: Wed. & Sat. @ 7 a.m. *
Nature walks: Daily @ 9 a.m. *
(* summer hours)

Credits: Keith Ayotte, Park Manager, Red Rock State Park (also very good w/ a pick & shovel)
Wayne Johnson, Landscape Architect, Red Rock State Park Volunteer
Enthusiasm filled the air at the Master Gardener Class Welcome Meeting June 11 held at the spectacular Cottonwood Recreation Center. The Class of 2014 was ready to go.

After a brief welcome by Master Gardener Association President and Mentor Co-Coordinator, Betty Loos, we jumped directly into playing "Cathy’s Game". Cathy Michener, MGA Membership Chair, has perfected this crazy group "ice breaker". The new class was intermingled with visiting Master Gardeners in groups of eight around a number of large tables. The idea was to select 10 things the group of 8 had in common that was not listed by the other groups. Commonalities like "we all have our own teeth" and "we have all been to a vortex (only in Sedona?) made points. Retired Doc Ron Z and Prof Bob Gessner threw out some highly technical common traits in their group of eight..."we all have sinus nodes" hint: it has to do with being alive (check it out on Google). The classist "gotcha" of the evening was: "we are all sitting at table one". The winning table got the bragging rights for the evening.

Mentor Co-Coordinator Tom Konzem led a raucous self-introduction of the new Associate Master Gardeners. People's interests varied all over the proverbial map: plant propagation, weeds, several vegetable growers, turf, grapes and a solid core of volunteers for local nature centers.

The much-anticipated break rolled out a huge carrot cake decorated with the Master Gardener logo and other volunteer-provided refreshments.

The evening event was topped off by Master Gardener Association Committee Chairs introducing committee members and giving a brief description of what their committees do. Jeff followed by announcing the approval of a $3.5 million budget increase for the Cooperative Extension. Funds from this now approved budget will allow him to expand Extension activities in Yavapai County.

Master Gardener Welcome Meeting launches 28 new Associates
by Steve McIntyre
FROM THE EDITOR: Please send or email articles and announcements to the address below. All articles must be in my hands by the 10th of the month. Short announcements (no more than 2 or 3 lines) will be accepted until the 25th.

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Fiscal Year Ends June 30th
Our fiscal year ends June 30th, so please ensure all hours for the fiscal year have been submitted by July 5th. Recognition hours and recertification are based on the fiscal year hours.

Record $3.5 Million UA Extension Budget Announced
The reduction in State contribution to the UA Extension funding the past few year has been felt locally. That slide has been halted with the passage of the FY2014 Budget in which the Extension will receive a $3.5 million increase.

At the Welcome Meeting in June, Jeff Schalau announced that the increase will allow him to fund several local positions including a 4-H Youth Development Agent, a Family Consumer Health Sciences (FCHS) Agent, and a Commercial Horticulture Agent. All positions will have countywide responsibilities. The Commercial Horticulture Agent will be located in the Verde Valley, the other two will be in Prescott.

The FCHS search is ready to interview, the 4-H position description is currently being approved and the Commercial Horticulture position will come next. Jeff said he hopes to have all three filled by January 2015.

Congratulations
for completing 50 hours
Karen Maeser
Mentor: Herdis Maclellan

Issued in furtherance of Cooperative Extension work, acts of May 8 and June 30, 1914, in cooperation with the U.S. Department of Agriculture, Jeffrey C. Silvertooth, Associate Dean & Director, Economic Development & Extension, College of Agriculture and Life Sciences, The University of Arizona. The University of Arizona is an equal opportunity, affirmative action institution. The University does not discriminate on the basis of race, color, religion, sex, national origin, age, disability, veteran status, or sexual orientation in its programs and activities.
Next Meeting

No meeting this month, instead we are holding our Monsoon Madness Sale on July 12.

The sale will be held in the parking lot across from the Prescott Extension Office.