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SPOKANE COUNTY EXTENSION
Master Gardener Program

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C114

TREE DECLINE

Decline will occasionally occur because of a single event, such as a disease or injury. More often, tree decline is a result of stress that has been present for many years. Often there is more than one stress factor. Trees under stress are predisposed to additional problems, making diagnosis even more difficult. For instance, a disease or wood-boring insect may apparent but the tree may have been declining for a while, making it more susceptible to that disease or insect. Some of the symptoms and causes are listed below.

SYMPTOMS

(Tree may have one or more of these symptoms)

- Smaller or fewer leaves than normal
- Yellow or brown leaf edges
- Premature autumn coloration or leaf drop
- Short internodal growth (distance between each years' annual bud scars)
- Dead branch tips or branches. (Dead branches may occur next to healthy ones)
- Branches at top of tree wilted or bare of leaves

CAUSES

Injury to trunk from:

- String trimmers or lawn mowers (repeated injury has a cumulative effect)
- Old pruning wounds that didn't heal
- Weather events such as hail, wind, lightning, freezing or very hot temperatures
- Animals' feeding on bark (deer, elk, porcupine, mice, vole, etc.)
- Other wounds

Injury to roots from:

- Soggy or poorly drained soils or seasonal high water table
- Excessive heat to surface roots during summer
- Soil compaction
- Insufficient room for root growth
- Change in soil level above the roots
- Recent construction in and around the root zone (sidewalks, sewers, patios, etc.)
- Root rots

Injury to whole plant from:

- Drought or lack of proper irrigation
- Not being hardy for winter temperature in this area
- Being planted in poor soil or subsoil (especially in new housing developments)

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- Improper planting or root damage prior to planting
- Poor fertility
- Chemicals in root zone
- Kinked or circling root

REMEDIES FOR ESTABLISHED TREES

Insufficient water over the course of several years is the most common cause of tree decline. Trees need supplemental irrigation in the dry summer season even if the spring has been wet. Additional irrigation is particularly important for trees transplanted within the past 3 years or that have been stressed from any of the factors listed above. Water deeply and infrequently (once a week) rather than sprinkling lightly for10 or 20 minutes a day. When the soil feels dry or only slightly damp 4 inches below the surface, it is time to water. Well-drained, sandy soils need more water more often than a loam or clay soil. Trees, especially conifers, often need water during the winter to prevent drying of the needles.

Identify sources of stress and eliminate them if possible. Don't have grass growing right up to the trunk, which requires mowing close to the bark. Instead, use a mulch to prevent weeds and conserve soil moisture. Wood and bark chips work well. Do not use plastic because it interferes with root-soil gas exchange and water infiltration. Spread the mulch in a three-foot circle around the trunk, about 2-4 inches deep. Keep the mulch several inches away from the trunk itself to prevent molds or rots. Renew yearly if necessary.

Protect trees from bark-chewing animals by using hardware cloth or other wire mesh placed around the trunk.

In public areas, try to re-route walkers or runners to prevent soil compaction in the root zone of trees.

Correctly prune out dead and dying branches to prevent invasion by insects or diseases to healthy branches.

Fertilize trees that show symptoms of nutrient deficiencies, such as small, yellow or off-color leaves.

CARE FOR NEW TREES

Select trees that are hardy for your area and have room to grow to maturity without severe or frequent pruning. (You may plan to do annual pruning but future property owners may not.)

Plant trees where they will get the sun exposure or shade protection required by the chosen variety.

Transplant properly and water adequately. *(See C100, Planting Landscape Trees and Shrubs)* New trees may take 2 or 3 years to become well established in the landscape.

Mulch around trees and water as described above.