TORONTO
Parks, Forestry & Recreation
Urban Forestry Branch
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Forest Health Care

Wood Decay

Wood decay is a process of wood disintegration that is caused by fungi or other micro-organisms. Decay can occur in any infected woody part of a tree. The process begins through wounds, where the wood becomes exposed. Many species of fungi cause wood decay. Most of them produce characteristic types of fruiting bodies known as conks or mushrooms. Presence of conks and mushrooms indicates advanced decay inside the tree. In the urban environment, these trees can be hazardous and need to be managed appropriately.

Hosts and Damage

All tree species are susceptible to wood decay, but some are more resistant to decay than others. Wood decay affects both heartwood and sapwood in the roots, butt, main stem or main branch unions of large trees.

Lawn equipment, improper pruning, animals, storm breaks and other factors can cause injuries that lead to decay. However, not all wounds lead to wood decay. A healthy tree can wall off infection and decay in a process called “compartmentalization of decay in trees” (CODIT). Decay begins when this chemical wall of defence is broken by decay organisms, which decompose the wood tissue causing wood decay.

Decay is often hidden behind narrow bands of seemingly healthy sapwood and bark. Fruiting bodies may appear when decay is close to the bark surface. These can be fleshy mushrooms that fall off shortly after they appear, or they may be woody conks that stay in place for many years.

Removal of the fruiting body does not stop the spread of decay. Their presence allows the causal pathogen to be identified, helping arborists to assess the damage.

Armillaria or honey mushroom fruiting bodies and rhizomorphs

Dryad’s saddle

Sulphur or chicken mushroom

Ganoderma applanatum or artist's conk

Fomes fomentarius or tinder conk

Bear's head polypore

Specific Management Practices for Control of Wood Decay:

- Request a tree inspection if you notice splits, cracks, increased lean of the main stem, or the presence of fungal fruiting structures on a City-owned tree. For privately-owned trees you should seek the advice of an qualified tree expert.
- Avoid injuring trees.
- Do not fill cavities as this may promote and hide decay.
- Tree paint on cuts and wounds is not a good practice and has been found to actually encourage decay.
- Avoid unnecessary pruning.
- Prune to develop healthy branch and crown form while the tree is young, thus avoiding radical corrective pruning later.
- Follow appropriate specifications for construction in close proximity to trees. Get professional advice, to prevent injury
- Reduce soil compaction and root damage that is caused by heavy equipment. You may prevent compaction by installing a temporary surfacing such as thick carpet of wood chips or plywood to prevent rutting.
- Discourage tree vandalism in your area. If you see a City–owned tree being damaged, please contact Urban Forestry.

General Management Practices to Improve Plant Health:

- Water your trees during dry spells. Infrequent, but deep soaking preferably during the early morning hours is recommended. Water absorbing roots are located in the upper 25 cm of the soil and extend outward well beyond the canopy dripline.

- Place organic mulch, (e.g. wood chips), or living mulch, (e.g. ground cover plants) around tree bases to keep the soil moist for longer periods and encourage healthier roots.

- Avoid unnecessary excavating, grade changes, soil compaction, root cutting or hard surfacing around trees. These activities destroy vital roots, which may lead to the decline or death of trees.

- Refrain from using salt or herbicides around trees.

Forest Health Care is a holistic approach to tree care that focuses on improving the health of trees in an urban environment. Our objective is a healthy, sustainable urban forest. Trees in urban forests are often stressed by compacted soil, drought, poor planting and pruning techniques, air pollution, road salt, damage from construction and much more. Trees planted in the right sites and properly maintained are less likely to suffer and are more resistant to pest problems.

Pest problems are managed using a decision making process that considers the following:

- Identification of the host and the pest.
- Monitoring of the host and the pest.
- Selection of the appropriate management strategy.
- Evaluation of the management plan.

Our focus is on pest management programs that are environmentally, socially and economically sound.