



## Anatomy of a Tree

Bob Eddleman

Planting a tree is one of the most patriotic things a person can do. But before selecting a tree one needs to consider and understand several things such as the care and maintenance of the tree. To do a good job in taking care of the tree one must have a basic understanding of the anatomy of a tree because it is easy to damage or kill a tree without this understanding.

The tree trunk is that vital part of a tree located between the anchoring roots and leaves that produce the trees food and replenish the oxygen supply in the air. The roots not only anchor the tree in the ground but serve the vital function of collecting water and nutrients from the soil for the leaves to use in the food making process.

The outer, cork like bark is the tree's protection from the elements of the outside world. It is constantly being renewed from within. Bark keeps out moisture in the rain and prevents the tree from losing moisture during dry weather. Finally it insulates against cold and heat and repels insects. The inner bark is called the phloem and is the pipeline that carries food throughout the tree. It lives for only a short time and turns to bark.

Just inside the inner bark is the growing part of the trunk. Technically it is called the cambium layer. Each year it produces new bark and new wood in response to hormones passed down through the phloem with food from the leaves. The hormones are produced by the leaf buds at the ends of branches as soon as they start growing in the spring. The next and somewhat thicker layer is the sapwood. This is the tree's pipeline for moving water and nutrients up to the leaves. Sapwood is new wood. As newer annual rings of sapwood are developed, the inner cells of the sapwood lose their vigor and turn to heartwood. Heartwood is the central supporting "pillar" of the tree. Although the heartwood is dead, it will not decay or lose strength while the outer layers are intact.

So you see the importance of taking good care of a tree. If the trunk is damaged by lawnmowers, weed whackers or by other means, the life support system of the tree is in danger. Decay often sets in, flow of water and nutrient supplies from the root to the leaves is disrupted. Topping trees or removal of more than 25 or 30% of the leaves each year seriously reduces the ability of the tree to produce food needed to grow and resist diseases.

Information on basic tree care can be found on the web at [www.plantamillion.org](http://www.plantamillion.org) or from you local Soil and Water Conservation District (SWCD). All District offices have copies of a booklet called Your Yard, Your Tree – A Homeowners Guide produced and distributed by SWCD's and Hoosier Heartland Resource Conservation and Development Council as a part of the Plant a Million program.