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Recognizing Trees of Significance

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Trees are important to people. They represent safety, beauty, and refuge. One way we show our regard for one of the most important elements of the human environment is to protect them. Protection begins with public recognition of value. It is not possible or desirable to protect all trees, but those associated with a greater perceived value must be recognized for their unique characteristics. These are the “Trees of Significance,” trees that for a variety of reasons are special.

The simplest form of legal protection is the designation of “Protected.” It carries with it no specific designation other than the perception of general value. This lack of specificity becomes its weakness when the time comes to protect it from human encroachment. Recognition of specific value to society is necessary if the presence of these trees is to be of greater value than their absence. A tree’s unique value can usually be categorized into one of eight groups.

Champion Trees

Individual trees are often recognized because of their massive size when compared to all other individuals of the same species. This recognition necessitates designation of a defined geographic area such as a state/province, country or continent. The most simple measurement is diameter or circumference (girth). A standard dbh (diameter at breast height) or dsh (diameter at standard height) is necessary to ensure a relative equality when comparing different individuals. One (1) point is awarded for each inch dbh, each foot of height and every 4 feet of average crown spread.

A height of 1.4m (4.5 ft) above the ground is becoming a commonly accepted standard. Measurement at 1.3m (4.3 ft) and 1.5m (5 ft) vary between countries and professions. With unavailability of D-tapes, some regions report this as trunk girth (circumference) rather than

diameter. Measurement of diameter is complicated when trees have multiple trunks, are branched below the point of measurement or leaning. These situations necessitate special rules. Measuring just trunk diameter traces back to our roots in commercial forestry when the bole (trunk) was the portion of significant value. Measuring other parameters helps distinguish between individuals competing for designation as the individual with greatest size.

Open grown trees differ in habit from forest grown trees. Differences in biomass, especially height and spread, become measurements important in recognizing Champion Trees. The National Register of Big Trees, maintained by American Forests, awards points for both crown spread and height. The total points are calculated by summing the circumference (at 1.4m/ 4.5 ft) as measured in inches with tree height (in feet) and a quarter of the average crown spread (in feet). This system, or modifications of it, are used in designating local, state/province and national champions.

Closely related to Champion Trees are those with the designation of “Landmark Tree.” Though they may not be the largest of their species, they are significantly taller and/or of greater volume than surrounding trees in the same stand. Typically individuals are at least 80m (262.5 ft) tall or contain at least 141.6m³ (5,000 ft³) of wood. Because they are within a stand it is often necessary to climb these tall trees in order to get an accurate measurement of the height.

Heritage Trees

Trees are often recognized simply because they have lived long enough to become large. The term “Heritage Tree” is a common designation for these trees. Related terms include “Legacy Tree,” “Old and Valuable Trees” (Hong Kong), “Significant Trees” and “Special Interest Trees.” When an individual tree reaches

a predetermined diameter it is automatically recognized, then becomes subject to governmental restrictions. Unlike Champion Trees, there are no limits on the number of individuals from a single species that can be recognized. Rarity, age and provenance are factors that may enter into the consideration for what can be designation as a “Heritage Tree.”

Community forestry programs often solicit support from corporations and individuals in recognition of Heritage Trees within a community. This recognition supports a green image for the sponsor while providing financial support for urban environmental awareness and for the Heritage Tree recognition program.

The disadvantage of a Heritage Tree program where trees must reach minimum size is that all species valuable in the urban environment do not have the genetic potential to reach the minimum size designations. It also encourages retention of individuals with a high potential for failure in urban areas where numerous or high value-targets are present. It also fosters the perception that smaller individuals are of more modest value when they may actually be providing substantially more environmental benefits than larger trees in retrenchment.

The terms “Veteran Tree” and “Ancient Tree” are related designations used in the United Kingdom. Unlike Heritage Trees, these labels designate physiological age classifications. Veteran Trees are large individuals of a species that have reached full maturity. Ancient Trees are over-mature individuals that have begun the natural process of senescence and retrenchment.

Regardless of the name used, trees in this category are recognized as special because of their size. Humans have a natural attraction to things that are uniquely large or old. Just because a tree is large does not necessarily mean that it is also the oldest. Different cultural

environments result in different growth rates for trees. At almost 5,000 years, the bristlecone pines (*Pinus longaeva*) growing in the White Mountains of eastern California and into Nevada in the United States are considered to be the oldest non-clonal living organisms on Earth. They grow in a harsh environment with a short growing season. They do not reach the same diameter, height and spread as the same or closely related species growing under more favorable conditions. A tree's age can only be determined by coring the tree and counting the annual growth rings. This becomes impossible in the equatorial tropics where trees do not form annual growth rings. Dating to an approximate age is only possible by carbon dating of xylem tissue collected at the pith.

Specimen Trees

Trees are also recognized because of superior form or a unique artistic character that has developed with the passage of time. Individual trees may warrant recognition because of their relative rarity in the area resulting from being at the extreme of its natural range. These individuals may possess genetic traits which have allowed them to survive under conditions unfavorable to other members of their species. These individuals are valuable as a source of germplasm (a collection of genetic resources for an organism) for future introductions.

Most botanic gardens and arboreta contain horticultural collections of non-native exotics that are neither invasive or problematic in the human environment. Individuals in collections of nonnatives may be recognized as specimens even though they are small or immature. It is their uniqueness that makes them a specimen.

Species used for commercial purposes (fruit, timber and pulp) are generally excluded from recognition as specimens. These are more appropriately recognized as Collections. If an individual grown for commercial purposes is recognized as the first of its kind introduced into the area it would be more appropriate to recognize it as a Historic Tree.

Historic Trees

Almost any tree that has reached maturity can be associated with historical events that have occurred through its life. Trees that are most appropriate for designation as "Historic Trees" are those individuals that were planted by important people and those planted in recognition of specific events or directly associated with historical events. Examples include trees that were:

- large enough for opposing groups of people to meet or sign a peace treaty while standing under the branches (i.e. Treaty Oak, Austin, Texas, U.S.)
- planted by or growing naturally on the grounds of historic figures (i.e. George Washington Tulip Poplar, Mount Vernon, Virginia, U.S.)
- grown from seed from historic sites
- grown from seeds that have been carried by explorers (i.e. loblolly pine, sycamore, sweetgum, redwood, and douglas fir seed carried to the moon in 1971 by Stuart Roosa, Apollo 14 command module pilot)

Determination of what is historic can be subjective. It may be determined by an organization, governing council or advisory group such as a tree warden, tree board, garden club or historic foundation. Sometimes this designation is automatic for all trees located on national memorials and historic landmarks. Some of these trees are well documented, although others are subject to folklore and legend. All are special because of the human attachment to a sense of place.

Memorial Trees

Across cultures it is a common custom to plant trees in recognition of milestones or events in one's life. These trees are called "Memorial Trees" even when they are not associated with a death. Flowers are used at funerals to symbolically show that even with death all is not dead, life goes onward. Memorial trees are symbolic of longevity, strength and endurance through stormy times and periods of adversity. Many groups (i.e. national parks, religious groups, countries) accept donations for which they plant a

tree in memory or honor of someone. These contributions are intended not only for the purchase, installation and maintenance of the tree but also a source of general funds for program administration.

Events recognized by memorial trees are notable in the life of the individual or friends and family. They are of lesser importance to a community than trees recognized as Historic. Nevertheless, Memorial Trees are appropriate in that they, like most of us, quietly contribute to the well-being of the rest of society. Planting in a common memorial grove along with other Memorial Trees helps to ensure protection of the individual as a part of the masses. In the same manner, individuals in urban areas prosper better than individuals who exist independently of others.

Location of Trees

Trees in common areas grow and function aesthetically better in groups than as isolated individuals. Urban trees as a unified mass are the single most important element for making the built environment livable. Examples of trees functioning by location include street trees, especially those forming an allée. Residences along tree-lined boulevards typically have higher resale values and lower cooling costs during hot weather. Clusters of trees in parks and larger landscapes form a cohesive unit with positive psychological and social values. Clusters of trees in parking lots and on rooftop gardens are especially important. Although some trees may be growing on private property or commercial sites, they function for the aesthetic and environmental benefit of the entire community.

Collections of Trees

Humans are collectors. Some people collect coins and stamps, for others it is clothes or cars. Some individuals and public gardens collect plants. Plant collections may represent a botanical subgroup (e.g. plants from a common genus or family) or those from a common geographic region (i.e. a North

American garden with a collection of plants from Asia). Collections can also be of economic or environmental value (i.e. edible plants or trees suitable for use under utility lines). Economic collections (e.g. species that have played a significant role in the advancement of human society) are important as a tool for environmental education. Collections of species attractive to butterflies (and their larvae) or other wildlife have been increasing in popularity in recent years.

Protected Trees

Plants are also recognized for their ecological value as wildlife habitat and in mitigating flooding from increased urban runoff. Progressive urban areas are mandating that riparian zones be restored and protected as a compliment to the impact of the built environment. Preference in many of these areas is given to native species. Unlike trees and shrubs in densely populated areas, these plants are maintained in a less intensive manner.

The world's population is rapidly becoming urbanized. By 2050 it has been estimated that half of all humans will

reside in megacities, metropolitan areas with a population exceeding 10 million inhabitants. As people become increasingly urbanized they lose connection with the natural environment. Even in megacities we owe our existence to the plant kingdom. Public recognition of the value of plants often begins as a child standing in awe of a tree, sometimes one larger than the building in which we live.

Public education begins with programs that recognize the many different types of trees of significance. Some are Champions, the largest of their kind. Others have been witness to the passage of time and resulting changes through generations of human society. Some stand silently in memory of their human companions or boastfully in testament of the role their products have contributed to the advancement of human civilization. Tree protection does not begin with fencing off the critical root zone. Rather, it begins with public appreciation for and recognition that trees have value in the built environment. Preservation only happens when the value of trees is appreciated. Recognition leading to preservation is a gift of one generation to all that follow.

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