

THE URBAN FOREST CAN BE A PEST¹

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Abstract. "Pest" is frequently defined as anything that causes trouble, annoyance, or discomfort. Almost everyone hears about the benefits of trees for the urban environment. If management recognizes the pest potential of the urban forest, it can be the asset it was intended to be in our urban areas. Urban forests and trees usually become a pest (1) when the tree selection for planting did not consider the space available for growth and other needs and wants of the urban area, and (2) when other needs and wants of the urban area conflict with the space occupied by the existing urban forest.

The urban forest, like a timber-growing forest, is a renewable resource. It is during the regeneration of the urban forest that management needs to consider making an environmental impact assessment for his future urban forest. Urban forest management needs to consider in its regeneration plans the impacts the urban forest will have on other urban needs and wants such as utility services of water, sewer, gas, electric, telephone, cable TV, transportation needs, lighting, traffic control devices, curbs, sidewalks, safety to pedestrians and property, passive forms of energy, wind, solar, etc.

If other needs and wants of the urban area are not considered in regenerating the urban forests, the urban forest just may become the pest we can no longer afford to tolerate in urban areas.

Urban is frequently defined as an area densely populated by humans. *Forest* is an area covered with trees, and *pest* is anything that causes trouble, annoyance, discomfort, or a nuisance. Thus, the forest is urban when it is densely populated by man, and it becomes a pest when it causes man trouble or discomfort.

This is not a new concept; its basis lies in history. In colonial America, the forest was considered a pest when it harbored man's enemies and by standing in the way of man's desire to settle the country and cultivate its land for agricultural crops. Yet at the same time, the forest temporarily provided man with his food, clothing, and shelter. The urban forest of today also burdens the populace with its pestilent nature on one hand and

is acclaimed for its benefits on the other hand.

Urban forests are like a coin. The head of the coin being "forest benefits," and the tail of the coin being "forest liabilities." If we flip the coin we have an equal chance to receive heads (benefits) or tails (liabilities). The unfortunate fact is we can't have a coin without a head and a tail. Nor can we have an urban forest without benefits and liabilities.

The question yet to be answered is: Can the managers of urban forests regenerate the existing forests through proper planning and weight the coin so the chances of heads (benefits) will be greater? One approach may be to make an environmental impact assessment of the potential pestilent nature of the urban forest.

The nature of urban forest pestilence is derived from four areas: 1) The tree's size, shape, and strength as the tree grows through maturity, both above and below ground. 2) The tree's litter characteristics. 3) The tree's attractiveness to insects and susceptibility to disease. 4) How the tree will be disposed of.

Urban forests and trees become a pest when: 1) The space available for the tree's growth and other needs and wants of the urban area were not considered in selecting the tree to be planted. 2) Other needs and wants of the urban area conflict with the space occupied or that will be occupied by the growing urban forest. 3) The tree dies or is structurally damaged.

An environmental impact assessment of the potential pestilent nature of the urban forest may read as follows:

Safety of the community and populace. At ages 10 through 20, tree branches will extend into the street and scrape vehicles. The tree at age 15 will begin to block the traffic signs and at age 40 will interfere with the traffic lights. If placed closer than 20 feet from the intersection, it will hinder the visibility of the intersection. At age 25,

1. Presented at the annual conference of the International Society of Arboriculture in Milwaukee in August of 1985.

the street lighting will be reduced by the tree foliage and growth pattern, and by age 35 street lighting will be rendered useless.

Structural integrity of sidewalks and curbs.

The tree root system is not expected to break the sidewalk or curb. However, if a 100-year storm should come, it can be expected that the root system may uplift the sidewalk in 10% of the blowdowns.

Drainage systems. The tree's growth and crown spread in 35 years will extend to a point to drop its leaves in residents' gutters and reduce their effectiveness. The tree's total leaf volume may temporarily plug catch basins during its annual leaf fall, and in 20 years reduce the storm system drainage capacity by 10%. Annual leaf fall volume is expected to be two cubic yards. That will need to be trucked to the landfill, and a citizen will spend one hour gathering them up.

Property damage. The tree is not expected to cause property damage if it should break apart or fall over in its first 25 years if cars are not parked by it on the street. At age 25 and over, the risk of property damage increases as the tree can now reach the residences of the populace if branches become detached or the tree falls over.

Attractive nuisance. The tree is susceptible to insects and is resistant to most diseases. Its branching habits make it easy to climb and children can be expected to be attracted to it for climbing purposes.

Electric and communication systems. The tree will grow into the electric and communication systems of the community within 15 years. Its growth rate is fast enough to require trimming annually, in addition to lowering the reliability of the electric and communication systems.

Energy influence. The tree will grow to such a height and shape to block the sun collected on south-facing roofs and reduce the sunfall on west-

facing roofs. It will also increase wind speed at ground level and reduce snow melting due to the tree's branching character.

Removal of the tree. Due to the nature of the tree's height and crown spread and facilities under the tree, experienced personnel and special equipment will be needed to remove it.

In making this kind of impact assessment, one soon realizes the benefits of trees in the urban area are not free. The managers of urban forests and their work force frequently use most of their efforts reacting to the urban forest pestilent nature. And, in fact, most of their tools are designed to take care of tree problems. Why then do we have urban forests? The reason lies in man's love affair with trees. If management can regenerate the urban forest for the populace to receive its acclaimed benefits and reduce the risk of receiving the forest's natural, inherent pestilence, man's love affair with trees will grow.

If managers of urban forests are to avoid or lessen these kinds of urban forest-generated pests, many hours of consultation will need to take place with the many city service departments, planners, developers and utility service industries operating in the community. Conflicts will be lessened when the planters of the urban forest trees properly select the tree for the space available for it to occupy without conflicting with other community wants and services. In this way, the populace may never reach a point where it feels it no longer can afford its love affair with the urban forest, nor want to apply the present laws of product liability and attractive nuisance to trees.

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