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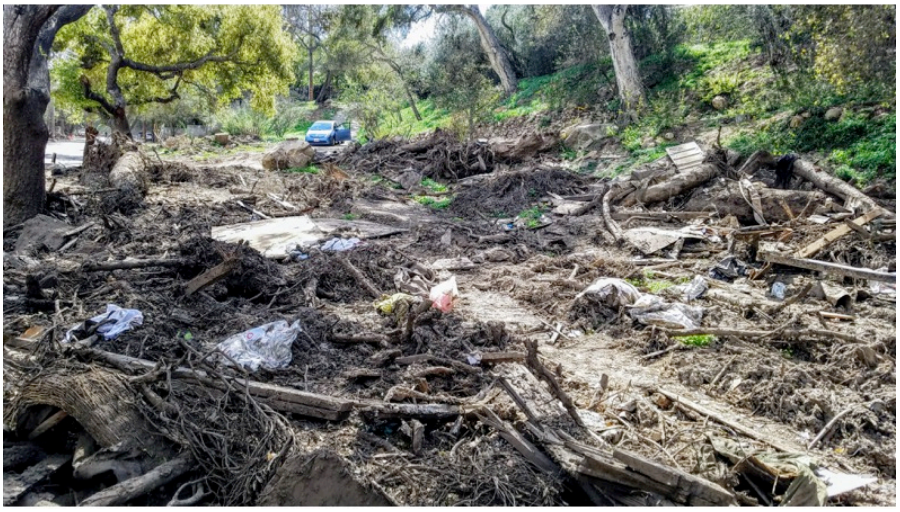
# Appraising Tree and Landscape Loss Caused by Wildfires

Once again, Californian's throughout the state continue to suffer devastating losses due to wildfires. From the southland to northern California and the foothills of the sierra's, the Woolsey, Camp, Hill and seemingly countless other fires have ravaged our state. From October through December, Santa Ana winds fan destructive blazes that grow in size with each passing year.



Last year, the Thomas fire swept through Ventura and Santa Barbara counties, leaving the coastal mountain range blackened. The loss of watershed resulted in a horrendous mudslide and flood through Montecito.

*The Montecito mudslide / flood, a result of the Thomas Fire. (photo by RDCS LLC).*

At the time, it was the most destructive fire in California history. That dubious distinction has already been exceeded this year.

During recovery efforts, insurers and attorneys require a tree or landscape appraisal to settle a client claim. In the past year, RDCS provided appraisals for damages caused by the Thomas fire in Ventura and Santa Barbara counties, the Lilac fire in San Diego North county, the Liberty fire in Riverside County, Pocket fire in Geyserville, and the Erskine fire in Lake Isabella.

The claims vary based on property type and location, since 2016, requests for appraisals due to fire loss continue to increase. The majority of appraisals are for properties located within suburban-rural settings, in close proximity to surrounding native trees and shrubs.

This article focuses on commonly used tree and landscape methods.

*Avocado grove torched by the Lilac fire in Bonsall, CA. (by RDCS LLC)*

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## The Guide for Plant Appraisal

The Council of Tree & Landscape Appraisers, (CTLA), includes representatives from several industry groups including:

- AmericanHort
- ASCA, American Society of Consulting Arborists
- National Association of Landscape Professionals
- ACF, Association of Consulting Foresters of America, Inc.
- ASLA, American Society of Landscape Architects
- ISA, International Society of Arboriculture
- TCIA, Tree Care Industry Association

In 2000, the CTLA published the *Guide for Plant Appraisal*, 9th Edition., (GFA) The 10th edition was recently published in 2018[1]. The GFA is intended as a reference and procedural guide for plant appraisal. While not a standard, the guide is a resource utilized by certified and registered consulting arborists and other landscape professionals for tree and landscape appraisals.

The appraisal process identifies the cost or value associated with plants and landscape features. Reasons for tree, plant or landscape appraisals include inventory, preservation, insurance, casualty loss, income, accounting tax, finance, and litigation purposes. Trees and landscapes provide benefits in urban, suburban and rural environments. The contribution of the benefits derived from trees and landscapes may increase property value, while improving physical and mental well-being. Trees may help conserve energy, reduce runoff, sequester carbon while producing oxygen and provide functional and aesthetic benefits for all.

Plant appraisers specialize in plants, landscape and associated services, (crop production). Plant appraisal is the process used to formulate an opinion of a defined cost or value for trees, plants, and landscapes. Trees and landscape are part of the real estate and may add value to the property. When a fire damages or destroys trees and plants, property value is diminished. The plant appraiser assists in determining what that value is or was.

The three main appraisal approaches include Cost, Income and Sales Comparison. Each approach contains one or more methods, and each method may utilize one or more techniques. This article focuses on the most commonly used Cost approach. The Cost approach includes three methods and three techniques used in landscape appraisal assignments. An appraiser selects the specific method and technique depending on the appraisal situation and the appraiser's judgement.

The Cost approach analyzes the cost of goods or services to estimate:

- Cost to repair the item
- Cost to replace benefits provided by the item
- Cost to reproduce item

[1] Council of Tree & Landscape Appraisers. *Guide for Plant Appraisal, 10th Edition.* International Society of Arboriculture, Champaign, Ill. 2018.

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# The Cost Approach for Fire Damaged Trees and Landscape

The cost approach produces a cost estimate for repairing, replacing or restoring the utility of the items. This approach is frequently applied to damaged or destroyed landscape items. Based on the assignment, either the repair, functional reproduction or replacement methods may be used. The three methods included within the Cost Approach include:

## Repair Cost

The **repair cost** is used when (1), the item will remain in place, (2), it will continue to provide benefits similar to those provided prior to the damage. This method estimates the cost to repair and or mitigate future damage.

## Reproduction Cost

When a landscape item is destroyed, the **reproduction cost** method may be used. This method determines the cost to replicate the item being appraised. This may mean estimating the cost or replacing the landscape item with one that is close to identical, (same plant species or manufacturer). This method seeks to reproduce most or all the characteristic and benefits of the original. When depreciation is applied to the reproduction cost, the **depreciated reproduction** cost is determined.

## Functional Replacement Cost

When substitute items provide equivalent utility, benefits or function, the **functional replacement** cost may be used rather than the cost to produce an exact replica as in the reproduction cost method. While the functional replacement cost method is used in similar situations as the reproduction method, it provides a valuation where the emphasis is on restoring benefits as opposed to duplicating a landscape feature. The functional replacement cost may be depreciated when the original item is not ideal.

## The Three Techniques within the Cost Approach

There are three techniques associated within the cost approach:

- Direct cost technique (DCT).
- Trunk formula technique (TFT)
- Cost compounding technique (CCT)

The DCT estimates the actual cost to install or repair a landscape or item, while the TFT and CCT extrapolate the cost of a smaller nursery plant and proportionally increase it to infer the cost of a larger plant. The direct cost is preferred when replacing plant material with equivalent size plants being appraised.

*A massive valley oak burned in the Pocket fire. (By RDCS LLC).*

From my experience, wild-fire damage often occurs in the urban / wildland interface, where large, rural properties contained mature plant specimens. When appraising trees and shrubs larger than commonly available at a nursery, the TFT or CCT is used to extrapolate costs from nursery plant material.

**Trunk Formula Technique (TFT)**

The TFT is used when the size of the lost or damaged tree exceeds the size of largest commonly available nursery tree or shrub. This technique uses the cost of the largest commonly available nursery plant. It determines the difference in cross-sectional trunk area and develops a unit price to extrapolate the size of the larger subject item. Benefits of this technique include:

- Cost-effective and simple way to appraise large trees.
- Relatively easy to calculate unit cost.
- Long history of use and acceptance by industry professionals and legal community.

Limitations of the technique include:

- Based on assumptions the cost of a nursery tree can be reliably scaled to the cost of a large tree.
- Estimates of tree value may be out of proportion to the value of the land and property improvements.
- Limited to residential and urban landscape settings.

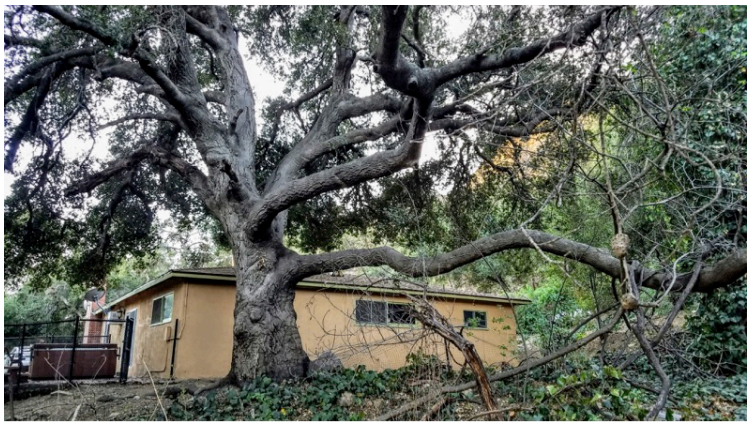
**Cost Compounding Technique (CCT)**

The CCT is used when a period of time is required for smaller replacement plant material to reach the size of the size of the pre-casualty plant. It is an extrapolation technique that relates the cost of money over a specific time period to tree or plant growth. The three primary inputs to the CCT:

- The installed cost of the nursery plant, (present cost, PC).
- The time in years to reach equivalent size or utility, (n).
- The appropriate compound interest rate, (i).

The formula for the CCT is:

$CC = PC \times (1 + i)^{n.}$



*Huge canyon oak is damaged by the Thomas fire. (by RDCS LLC).*

Cost compounding if frequently used when appraising large mature trees that cannot realistically be replanted in large sizes. This is frequently the case in canyons, hillsides, backyards or other inaccessible locations. Smaller size replacement trees or shrubs are used, their material and installation costs compounded over an appropriate time period to achieve pre-casualty parity.

Strengths of this technique include:

- Cost estimates based on documentable tree size, cost and interest rates, defendable empirical based on biological and financial facts.
- Calculations are easily performed.
- Works best where the years to parity can be reliably estimated.
- Can be applied to both urban landscape and wildland settings .

Limitations include:

- Results are sensitive to years -to-parity estimates and interest rates.
- Arborists may need to consult with professionals when selecting interest rates.
- Estimates of tree value may be disproportionate to the value of the land and other property improvements.

## Depreciation

Depreciation is the monetary expression of three suboptimum factors, (1) physical deterioration, (2), functional obsolescence, and (3) external obsolescence. We appraise the plant condition including structural integrity, health, vigor and form. We assess whether there are any factors associated with the site or tree that limits plant growth (function limitations). We determine if factors outside the property and control of the owner affect the life expectancy, structure, health or form, (external limitations).

In most appraisals, the three depreciation factors are applied to the basic cost. Once the basic cost is multiplied by each of the depreciation factors, the resulting depreciated cost may be the assignment result.

## Conclusions

Wildfires continue to grow in size, scope and destruction. We have lost more live, homes and properties to fire in 2018 than ever before and there doesn't appear to be any near-term change in our climatic drought pattern.

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Trees, shrubs and landscape provide value to real estate. When damaged or destroyed, real estate value may decrease. As a certified and registered consulting arborist, C-27 California landscape contractor, and professional horticulturist, RDCS LLC understands the nuances and complexities involved in tree and landscape appraisals.

Recent fires increase the need for knowledgeable, experienced appraisers for tree and landscape claims. Property owners, insurers and attorneys should be aware of the various plant appraisal approaches and use appraisers specialized in the tree and plant appraisal process. When possible, tree and landscape appraisers should coordinate with real estate and property appraisers for accuracy.