

## Landscape Tree Appraisal

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The value of landscape trees is normally greater than the dollar value of the marketable wood they contain. Landscape trees are used for many architectural, engineering, climatic and aesthetic purposes. A realistic appraisal of landscape trees is often required to settle legal disputes, damage claims or casualty loss.

Tree appraisal is not an exact science. No simple formula or “cookbook” method can be applied. This NebGuide gives a brief overview of common methods used by professional tree appraisers and offers information on how to have a tree appraised for legal purposes. It is not meant to be a standard for tree appraisal although these methods can be used in some cases as a starting point to determine loss in the case of criminal trespass or negligent damage to landscapes.

Use of this publication is not intended for estimating the values of windbreaks, wildlife areas, woodland or any other non-landscaped area.

Information in this publication will discuss accepted methods used by competent tree appraisers. These methods appraise reasonable restoration costs or the value of trees in Nebraska. Basic tree factors, such as size, species, condition, location, site contribution and placement, and degree of damage, are evaluated. This publication may also be used in combination with the “Guide for Plant Appraisal — 9th Edition” (authored by representatives to the Council of Tree and Landscape Appraisers and available through the International Society of Arboriculture — <http://www.isa-arbor.com/>.)

### Who Is Qualified to Do Landscape Appraisals

Several factors, including legal precedents resulting from court cases involving tree appraisals, have made appraisals quite complex. It is very unlikely that an untrained individual would be able to accurately appraise tree damage or loss and be able to defend the appraisal in court. If the damage or loss is significant, it is a job for a professional. If the damage or loss is minor, then a formal appraisal may not be necessary.

The Nebraska Forest Service maintains a list of qualified consultant foresters and arborists working in Nebraska. A copy may be obtained by contacting any of the authors of this publication.

### Appraisal Methods

All of the methods listed here are used by professional appraisers who may select any one of these methods or use them in combination to derive the final appraisal. The first three methods are relatively simple while the fourth method,

set forth by the Council of Tree and Landscape Appraisers, is more complex.

### Comparable Sales

This method is normally used by a licensed real estate appraiser. It is based on actual real estate sales and considers the loss in property value due to tree damage. This assessment is made by comparing the damaged property to adjacent, undamaged property. This method is subjective in nature and rarely used because of the lack of hard data.

### Value Loss to the Property

This is an evaluation of the reduction in property value caused by the damage to the tree(s). Three factors are involved:

- Fair market value of the property prior to the damage.
- The contribution of the entire landscape as a percentage of fair market value. (Research has indicated that the value of trees and shrubs average about 7 percent of the total property value with a range of 0 to 20 percent.)
- An estimation of the landscape impact lost due to tree damage. This estimation is given as a percentage.

For example:

|                                   |             |
|-----------------------------------|-------------|
| fair market value of the property | = \$100,000 |
| value of landscape                | = 7%        |
| landscape impact loss             | = 20%       |
| $\$100,000 \times .07 \times .20$ | = \$1,400   |

### Reasonable Restoration

If the trees damaged are larger than normally handled in the local nursery trade, then an evaluation of the cost of restoring the property is made. Based on the circumstances this evaluation may entail several different factors.

- Replace the gross tree diameter loss with transplantable size trees.
- Replace the gross basal area loss with transplantable size trees.\*
- The cost of mitigating the function of the tree loss (i.e. cost of increased electric bills resulting from loss of shade, etc.).
- The cost of mitigating the loss of property value (i.e. what landscaping can be done to the property to equal the property value before the damage).

\* Basal area is defined as the area in square inches of the cross section of a tree at 4.5 feet above ground level.

## Council of Tree and Landscape Appraisers Method

The Council of Tree and Landscape Appraisers is a consortium composed of professionals from the American Society of Consulting Arborists, the International Society of Arboriculture, the American Association of Nurserymen, the National Arborists Association, and the Associated Landscape Contractors of America. These organizations have cooperated to publish a handbook for tree appraisal entitled "Guide for Plant Appraisal." Copies of this handbook may be obtained by contacting the International Society of Arboriculture, Box 3129, Champaign, IL 61826. There is a charge for the handbook.

These professionals use a list of tree species with associated ratings developed for specific geographic regions. These ratings are then combined with other information gathered on site including plant condition and location. The appraiser may also use methods previously described, including the actual replacement value of the tree(s) damaged.

### Species list and class ratings

Species ratings are based on the species of tree, the geographic area where the tree is located, the species' ability to adapt to the geographic location and the species' desirability in the landscape. Species that are common to Nebraska are rated in *Table I*. A separate rating has been given to cultivars. In some instances a cultivar may actually decrease the species rating as in the case of "Bradford" callery pear and "Siouxland" cottonwood. Crabapples are listed as either disease resistant or non-disease resistant.

- Ratings are in increments of 10 percent.
- Species desirability is a part of the class rating and may include form, color, growth habit, flowering and fruiting characteristics, longevity, insect and disease resistance, and maintenance requirements.

- The species class rating should not be used as a guide for planting recommendations as a number of species are borderline in colder areas.

### Replacement costs

*Table II* gives replacement costs by size and species rating. To use the table, first locate the correct species rating from the species list in *Table I*. Next, find the appropriate species rating column on *Table II* and the appropriate caliper size (up to 8 inches) using the column on the far left side of the table. For example, a 4-inch caliper Pin Oak, *Quercus palustris*, has a species rating of 60 percent (*Table I*). *Table II* indicates that replacing a 4-inch tree with this rating would cost approximately \$425.

*Table II* reflects, as much as possible, the actual nursery market conditions in Nebraska (2003) by species classes and sizes. Replacement costs for trees 1 to 1.5" caliper are based on three times wholesale bare-root prices. Replacement costs for trees 1.5 to 5" caliper are based on three times wholesale balled and burlapped prices. Replacement costs for trees 5 to 8" caliper are based on mechanically moved tree prices. In standard nursery practice, trees with low species ratings are not normally available or planted in sizes over 1" caliper. It should be recognized that the cost of planting may exceed values in the chart.

### Trunk formula method

This method uses a base price of \$26 per square inch of trunk area measured at about 6 inches above ground level. This figure is based on the average of replacement costs of 8" caliper trees in the 60-100 percent species ratings.

**Table I. Nebraska Species Class List**

| Scientific Name                    | Common Name                  | Species Class Rating % |
|------------------------------------|------------------------------|------------------------|
| <i>Alnus glutinosa</i>             | Alder                        | 30                     |
| <i>Phellodendron amurense</i>      | Amur Corktree                | 30                     |
| <i>Malus</i> x spp.                | Apple, Fruiting              | 40                     |
| <i>Thuja occidentalis</i>          | Arborvitae, Eastern          | 60                     |
| <i>Thuja orientalis</i>            | Arborvitae, Oriental         | 20                     |
| <i>Fraxinus pennsylvanica</i>      | Ash, Green                   | 50                     |
| <i>Fraxinus pennsylvanica</i>      | Ash, Green (Cultivars)       | 60                     |
| <i>Fraxinus americana</i>          | Ash, White                   | 60                     |
| <i>Fraxinus americana</i>          | Ash, White (Cultivars)       | 70                     |
| <i>Taxodium distichum</i>          | Baldcypress                  | 70                     |
| <i>Fagus grandifolia</i>           | Beech, American              | 40                     |
| <i>Fagus sylvatica</i>             | Beech, European              | 40                     |
| <i>Betula pendula</i>              | Birch, European White        | 40                     |
| <i>Betula platyphylla japonica</i> | Birch, Japanese              | 60                     |
| <i>Betula papyrifera</i>           | Birch, Paper                 | 40                     |
| <i>Betula nigra</i>                | Birch, River                 | 70                     |
| <i>Nyssa sylvatica</i>             | Black Gum                    | 30                     |
| <i>Aesculus glabra</i>             | Buckeye, Ohio                | 50                     |
| <i>Catalpa speciosa</i>            | Catalpa, Northern            | 40                     |
| <i>Prunus virginiana</i>           | Cherry (Chokecherry)         | 60                     |
| <i>Prunus padus</i>                | Cherry (European Birdcherry) | 20                     |
| <i>Prunus serotina</i>             | Cherry, Black                | 50                     |

Table I. Nebraska Species Class List (continued).

| Scientific Name                        | Common Name                           | Species Class Rating % |
|--|---------------------------------------|------------------------|
| <i>Prunus</i> x 'Shubert'              | Cherry, Canada Red                    | 50                     |
| <i>Castanea dentata</i>                | Chestnut, American                    | 40                     |
| <i>Castanea mollissima</i>             | Chestnut, Chinese                     | 40                     |
| <i>Populus deltooides</i>              | Cottonwood, Eastern                   | 40                     |
| <i>Populus deltooides</i>              | Cottonwood, Eastern (Cultivars)       | 40                     |
| <i>Populus deltooides</i> 'Siouxland'  | Cottonwood, Eastern, 'Siouxland'      | 20                     |
| <i>Malus</i> x spp.                    | Crabapple (disease resistant)         | 70                     |
| <i>Malus</i> x spp.                    | Crabapple (non-disease resistant)     | 30                     |
| <i>Cornus florida</i>                  | Dogwood, Flowering                    | 40                     |
| <i>Pseudotsuga menziesii</i>           | Douglas Fir                           | 80                     |
| <i>Ulmus americana</i>                 | Elm, American                         | 30                     |
| <i>Ulmus parvifolia</i>                | Elm, Chinese, Lacebark                | 40                     |
| <i>Ulmus rubra</i>                     | Elm, Red (Slippery Elm)               | 30                     |
| <i>Ulmus pumila</i>                    | Elm, Siberian                         | 20                     |
| <i>Abies balsamea</i>                  | Fir, Balsam                           | 90                     |
| <i>Abies concolor</i>                  | Fir, Concolor (White Fir)             | 100                    |
| <i>Ginkgo biloba</i>                   | Ginkgo (Maidenhair Tree)              | 80                     |
| <i>Ginkgo biloba</i>                   | Ginkgo (Cultivars)                    | 80                     |
| <i>Koelreuteria paniculata</i>         | Goldenraintree                        | 30                     |
| <i>Celtis occidentalis</i>             | Hackberry                             | 70                     |
| <i>Crataegus oxycantha Superba</i>     | Hawthorn, Crimson Glory               | 60                     |
| <i>Crataegus laevigata (oxycantha)</i> | Hawthorn, English                     | 60                     |
| <i>Crataegus x lavalleyi</i>           | Hawthorn, Lavalleyi                   | 60                     |
| <i>Crataegus crusgalli inermis</i>     | Hawthorn, Thornless Cockspur          | 70                     |
| <i>Crataegus x mordenensis</i> 'Toba'  | Hawthorn, Toba                        | 60                     |
| <i>Crataegus phaenopyrum</i>           | Hawthorn, Washington                  | 60                     |
| <i>Crataegus viridis</i> 'Winterking'  | Hawthorn, Winterking                  | 60                     |
| <i>Tusga candensis</i>                 | Hemlock, Canadian (Eastern)           | 60                     |
| <i>Carya</i> sp.                       | Hickory                               | 60                     |
| <i>Gleditsia triacanthos</i>           | Honeylocust                           | 40                     |
| <i>Gleditsia triacanthos</i>           | Honeylocust (Cultivars)               | 50                     |
| <i>Ostrya virginiana</i>               | Hophornbeam (Ironwood)                | 40                     |
| <i>Carpinus caroliniana</i>            | Hornbeam                              | 40                     |
| <i>Aesculus hippocastanum</i>          | Horsechestnut                         | 50                     |
| <i>Juniperus chinensis</i>             | Juniper, Chinese (Cultivars)          | 30                     |
| <i>Juniperus virginiana</i>            | Juniper, Eastern Redcedar             | 30                     |
| <i>Juniperus virginiana</i>            | Juniper, Eastern Redcedar (Cultivars) | 30                     |
| <i>Juniperus scopulorum</i>            | Juniper, Rocky Mountain               | 20                     |
| <i>Juniperus scopulorum</i>            | Juniper, Rocky Mountain (Cultivars)   | 30                     |
| <i>Gymnocladus dioicus</i>             | Kentucky Coffeetree                   | 80                     |
| <i>Larix</i> sp.                       | Larch                                 | 70                     |
| <i>Tilia americana</i>                 | Linden, American                      | 70                     |
| <i>Tilia americana</i>                 | Linden, American (Cultivars)          | 80                     |
| <i>Tilia platyphyllos</i>              | Linden, Bigleaf                       | 70                     |
| <i>Tilia cordata</i>                   | Linden, Littleleaf                    | 80                     |
| <i>Tilia cordata</i>                   | Linden, Littleleaf (Cultivars)        | 80                     |
| <i>Tilia tomentosa</i>                 | Linden, Silver                        | 30                     |
| <i>Robinia pseudoacacia</i>            | Locust, Black                         | 30                     |
| <i>Magnolia</i> sp.                    | Magnolia                              | 60                     |
| <i>Acer ginnala</i>                    | Maple, Amur                           | 70                     |
| <i>Acer ginnala</i>                    | Maple, Amur (Cultivars)               | 80                     |
| <i>Acer nigrum</i>                     | Maple, Black                          | 80                     |
| <i>Acer negundo</i>                    | Maple, Boxelder                       | 20                     |
| <i>Acer campestre</i>                  | Maple, Hedge                          | 10                     |
| <i>Acer palmatum</i>                   | Maple, Japanese                       | 30                     |
| <i>Acer platanoides</i>                | Maple, Norway                         | 50                     |
| <i>Acer platanoides</i>                | Maple, Norway (Cultivars)             | 50                     |
| <i>Acer rubrum</i>                     | Maple, Red                            | 50                     |
| <i>Acer rubrum</i>                     | Maple, Red (Cultivars)                | 50                     |
| <i>Acer saccharinum</i>                | Maple, Silver                         | 40                     |
| <i>Acer saccharinum</i>                | Maple, Silver (Cultivars)             | 40                     |
| <i>Acer saccharum</i>                  | Maple, Sugar                          | 80                     |
| <i>Acer saccharum</i>                  | Maple, Sugar (Cultivars)              | 90                     |
| <i>Sorbus acuparia</i>                 | Mountainash, European                 | 60                     |
| <i>Morus</i> sp.                       | Mulberry                              | 20                     |
| <i>Quercus velutina</i>                | Oak, Black                            | 80                     |
| <i>Quercus macrocarpa</i>              | Oak, Bur                              | 100                    |
| <i>Quercus prinus</i>                  | Oak, Chestnut                         | 90                     |

**Table I. Nebraska Species Class List (continued).**

| <i>Scientific Name</i>             | <i>Common Name</i>            | <i>Species Class Rating %</i> |
|------------------------------------|-------------------------------|-------------------------------|
| <i>Quercus muehlenbergii</i>       | Oak, Chinkapin                | 70                            |
| <i>Quercus robur</i>               | Oak, English                  | 60                            |
| <i>Quercus robur</i> 'Fastigiata'  | Oak, English, Upright         | 60                            |
| <i>Quercus rubra</i>               | Oak, Northern Red             | 80                            |
| <i>Quercus lyrata</i>              | Oak, Overcup                  | 70                            |
| <i>Quercus palustris</i>           | Oak, Pin                      | 60                            |
| <i>Quercus acutissima</i>          | Oak, Sawtooth                 | 80                            |
| <i>Quercus coccinea</i>            | Oak, Scarlet                  | 60                            |
| <i>Quercus imbricaria</i>          | Oak, Shingle                  | 80                            |
| <i>Quercus shumardii</i>           | Oak, Shumard                  | 70                            |
| <i>Quercus bicolor</i>             | Oak, Swamp White              | 90                            |
| <i>Quercus alba</i>                | Oak, White                    | 100                           |
| <i>Elaeagnus angustifolia</i>      | Olive, Russian                | 20                            |
| <i>Maclura pomifera</i>            | Osage-Orange                  | 30                            |
| <i>Sophora japonica</i>            | Pagodatree, Japanese          | 20                            |
| <i>Asimina triloba</i>             | Pawpaw                        | 30                            |
| <i>Pyrus calleryana</i>            | Pear, Callery (Cultivars)     | 50                            |
| <i>Pyrus calleryana</i> 'Bradford' | Pear, Callery, Bradford       | 40                            |
| <i>Diospyros virginiana</i>        | Persimmon                     | 30                            |
| <i>Pinus nigra</i>                 | Pine, Austrian                | 50                            |
| <i>Pinus strobiformis</i>          | Pine, Border                  | 50                            |
| <i>Pinus aristata</i>              | Pine, Bristlecone             | 70                            |
| <i>Pinus strobus</i>               | Pine, Eastern White           | 90                            |
| <i>Pinus banksiana</i>             | Pine, Jack                    | 20                            |
| <i>Pinus koraiensis</i>            | Pine, Korean                  | 50                            |
| <i>Pinus bungeana</i>              | Pine, Lacebark                | 80                            |
| <i>Pinus flexilis</i>              | Pine, Limber                  | 50                            |
| <i>Pinus mugo</i>                  | Pine, Mugo                    | 60                            |
| <i>Pinus ponderosa</i>             | Pine, Ponderosa               | 50                            |
| <i>Pinus resinosa</i>              | Pine, Red                     | 30                            |
| <i>Pinus sylvestris</i>            | Pine, Scotch                  | 70                            |
| <i>Prunus cerasifera</i>           | Plum, Purple Leaf (Cultivars) | 20                            |
| <i>Populus nigra</i> "Italica"     | Poplar, Lombardy              | 10                            |
| <i>Populus alba</i>                | Poplar, White                 | 10                            |
| <i>Cercis canadensis</i>           | Redbud, Eastern               | 60                            |
| <i>Picea pungens</i>               | Spruce, Colorado              | 90                            |
| <i>Picea abies</i>                 | Spruce, Norway                | 90                            |
| <i>Picea glauca</i>                | Spruce, White                 | 80                            |
| <i>Liquidambar styraciflua</i>     | Sweetgum                      | 70                            |
| <i>Platanus</i> sp.                | Sycamore                      | 60                            |
| <i>Syringa reticulata</i>          | Tree Lilac, Japanese          | 70                            |
| <i>Ailanthus altissima</i>         | Tree of Heaven                | 10                            |
| <i>Liriodendron tulipifera</i>     | Tuliptree, Yellow-Poplar      | 60                            |
| <i>Juglans</i> sp.                 | Walnut                        | 50                            |
| <i>Salix</i> sp.                   | Willow                        | 20                            |
| <i>Cladrastis kentukea</i>         | Yellowwood                    | 40                            |

**Table II. Approximate replacement costs in dollars\* by size and species rating.**

| <i>Caliper size in inches</i> | <i>Species Ratings</i> |                 |                 |                 |                  |
|-------------------------------|------------------------|-----------------|-----------------|-----------------|------------------|
|                               | <i>10 - 20%</i>        | <i>30 - 40%</i> | <i>50 - 60%</i> | <i>70 - 80%</i> | <i>90 - 100%</i> |
| 1.0 - 1.5                     | \$25.00                | \$85.00         | \$115.00        | \$165.00        | \$205.00         |
| 1.5 - 2.5                     | \$32.00                | \$175.00        | \$255.00        | \$335.00        | \$400.00         |
| 2.5 - 3.5                     | \$37.00                | \$195.00        | \$335.00        | \$450.00        | \$550.00         |
| 3.5 - 5.0                     | \$60.00                | \$300.00        | \$425.00        | \$700.00        | \$850.00         |
| 5.0 - 8.0                     | \$100.00               | \$700.00        | \$1,100.00      | \$1,300.00      | \$1,500.00       |

\*2003 dollars.

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