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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 x .07 x.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 %*
Alnus glutinosa	Alder	30
Phellodendron amurense	Amur Corktree	30
Malus x spp.	Apple, Fruiting	40
Thuja occidentalis	Arborvitae, Eastern	60
Thuja orientalis	Arborvitae, Oriental	20
Fraxinus pennsylvanica	Ash, Green	50
Fraxinus pennsylvanica	Ash, Green (Cultivars)	60
Fraxinus americana	Ash, White	60
Fraxinus americana	Ash, White (Cultivars)	70
Taxodium distichum	Baldcypress	70
Fagus grandifolia	Beech, American	40
Fagus sylvatica	Beech, European	40
Betula pendula	Birch, European White	40
Betula platyphylla japonica	Birch, Japanese	60
Betula papyrifera	Birch, Paper	40
Betula nigra	Birch, River	70
Nyssa sylvatica	Black Gum	30
Aesculus glabra	Buckeye, Ohio	50
Catalpa speciosa	Catalpa, Northern	40
Prunus virginiana	Cherry (Chokecherry)	60
Prunus padus	Cherry (European Birdcherry)	20
Prunus serotina	Cherry, Black	50

Table I. Nebraska Species Class List (continued).

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

Table I. Nebraska Species Class List (continued).

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

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

	Species Ratings				
Caliper size in inches	*10 - 20%*	*30 - 40%*	*50 - 60%*	*70 - 80%*	*90 - 100%*
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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