

Utah Forest Facts

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Urban/Community Forestry

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Species Ratings for Landscape Tree Appraisal in Utah

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in cooperation with the Utah Community Forest Council & Utah Chapter ISA

This fact sheet establishes species ratings to be used by tree appraisal experts with the trunk formula method for appraising the monetary value of trees in Utah.

Species Ratings and the Trunk Formula Method

The dollar value of a landscape tree occasionally needs to be determined for insurance purposes, condemnation, real estate transactions, or tree inventories. For larger trees the trunk formula method often is used for establishing these values. This method starts with calculation of a basic value and adjusts that value for the species, condition, and location of the tree.

This fact sheet establishes species ratings for nearly all trees likely to be found in the Intermountain West, with a particular focus on Utah. These species ratings are for use with the trunk formula method of tree appraisal. These ratings are not to be used with the replacement cost method since they are already reflected in the cost of the replacement tree.

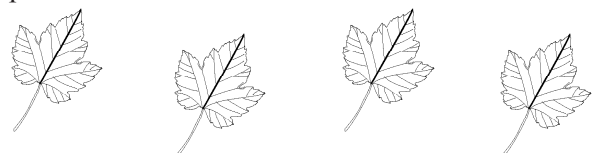
The complete tree appraisal procedure is described in detail in the "Guide for Plant Appraisal" prepared by the Council of Tree and Landscape Appraisers and published by the International Society of Arboriculture (9th edition, available from ISA, P.O. Box 3129, Champaign, IL 61826; phone (217)355-9411; www.isa-arbor.com).

Uses and Limitations

Species ratings in this guide are given by Latin name and common name and are expressed as percentages, with a maximum possible value of 100% and a minimum value of 5%. Latin names are used to keep like species together in the table. These ratings are subjective, based on a tree's adaptability to environmental factors, growth characteristics, aesthetics, maintenance needs, structural qualities, longevity, and allergenic properties.

Each species is given a rating range of about 10 to 20 points, within which most trees of that species will likely fall. Ratings should be adjusted within or even outside of the given range if local conditions require. For example, a species planted on a site where it is poorly adapted might get a lower rating, and an otherwise poor species planted in an especially harsh area where nothing else will do well might get a higher rating. Species ratings should be based only on overall species-related factors, without regard to condition or location factors that are tied to a specific tree and its site. Note that fringetrees (*Chionanthus* spp.) and ashes (*Fraxinus* spp.) are at risk if the emerald ash borer makes it to Utah, but it hasn't yet, so their ratings are unaffected for now.

These species ratings and the related appraisal methods generally are for trees in cultivated or developed landscapes where the tree lends considerable aesthetic and



functional contribution to the site. They generally should not be used for appraising trees in undeveloped, unpopulated rural areas. Such trees may be better evaluated using forest/timber appraisal techniques. Better appraisal techniques also exist for shrubs, windbreak trees in rural, non-residential situations, and for appraisal of orchard trees or Christmas trees.

Knowledge Is Essential

Appraisal of landscape trees and adjustment of the species ratings included in this fact sheet should only be done by persons who are experts in use of the appraisal techniques. These persons also must be knowledgeable about species involved, site conditions, and about trees and tree biology.

The species ratings in this fact sheet are based on the knowledge and opinions of the author and of several experts involved in community forestry in the area. We welcome input and advice. Contact Mike Kuhns, Extension Forester, Utah State University, Logan, UT 84322-5230, or send e-mail to mike.kuhns@usu.edu. For an up-to-date version of this fact sheet go to the publications section of our website at forestry.usu.edu.

Other Appraisal Factors

The following factors are needed for conducting tree appraisals (see the “Guide to Plant Appraisal”) and were derived from a 2018 survey of nurseries in Utah. They will change regularly. For up-to-date figures, or for other community forestry assistance, contact the Utah Community Forest Council at www.utahurbanforest.org.

Largest commonly available transplantable tree size – the average size (caliper) of the largest normally available tree: **2.17 inch trunk caliper (3.70 square inches)**

Replacement cost – the cost to buy the largest normally available tree (see above), including warranty: **\$266**

Installation cost – including delivery (\$81) and planting (\$133): **\$214**

Installed tree cost – including tree, delivery, and planting: **\$480** – note: 2/3s of respondents do not offer planting

Unit tree cost – the cost per square inch of trunk area (not including installation): **\$72 per square inch**

Wholesale tree cost – the wholesale cost to buy the largest normally available tree for the surveyed nurseries (generally reflects a discount given to landscapers): **\$219**

Species Ratings

<u>Species</u>	<u>Rating</u>
Gymnosperms (mostly with needle or scale foliage)	
❖ <i>Abies concolor</i> — white or concolor fir.....	75-95%
❖ <i>Abies lasiocarpa</i> — subalpine or alpine fir	60-80%
<i>Calocedrus decurrens, Libocedrus decurrens</i>	75-95%
— incense-cedar	
<i>Cedrus atlantica, deodara, libani, etc.</i> — true.....	90-100%
cedars	
<i>Chamaecyparis obtusa</i> — Hinoki falsecypress.....	75-95%
• Hinoki cypress	
<i>Cupressus arizonica</i> — Arizona cypress.....	75-95%
<i>Cupressus sempervirens</i> — Italian cypress	75-95%
<i>Ginkgo biloba</i> — ginkgo • maidenhair tree	90-100%
(male only; female 10-30%)	
<i>Juniperus chinensis, ❖ osteosperma, ❖ scopulorum,</i>	55-75%
<i>virginiana, etc.</i> — junipers	
<i>Larix decidua, kaempferi, etc.</i> — larches.....	80-100%
<i>Metasequoia glyptostroboides</i> — dawn redwood	80-100%
<i>Picea abies</i> — Norway spruce	75-95%
❖ <i>Picea engelmannii</i> — Engelmann spruce.....	70-90%
<i>Picea glauca</i> — white or Black Hills spruce	75-95%
<i>Picea glauca</i> ‘Conica’ — dwarf Alberta spruce	50-70%*
<i>Picea omorika</i> — Serbian spruce.....	75-95%
❖ <i>Picea pungens</i> — blue or Colorado blue spruce.....	75-95%
<i>Pinus bungeana</i> — lacebark pine.....	90-100%
❖ <i>Pinus contorta</i> — lodgepole pine	60-80%
<i>Pinus densiflora</i> — Japanese red pine	70-90%
❖ <i>Pinus edulis</i> — pinyon • Colorado pinyon	65-85%
<i>Pinus eldarica</i> — Afghan pine.....	70-90%
❖ <i>Pinus flexilis</i> — limber pine.....	80-100%
<i>Pinus halepensis</i> — Aleppo pine.....	60-80%
<i>Pinus heldreichii</i> — Bosnian pine.....	70-90%
❖ <i>Pinus longaevea, aristata</i> — bristlecone pine	80-100%
❖ <i>Pinus monophylla</i> — singleleaf pinyon.....	75-95%
<i>Pinus monticola</i> — western white pine.....	70-90%
<i>Pinus mugo</i> — Mugo or Swiss mountain pine.....	50-70%*
<i>Pinus nigra</i> — Austrian pine.....	70-90%
<i>Pinus parviflora</i> — Japanese white pine.....	75-95%
❖ <i>Pinus ponderosa</i> — ponderosa pine	70-90%
<i>Pinus strobiformis</i> — southwestern white pine.....	80-100%
<i>Pinus strobus</i> — eastern white pine	50-70%
<i>Pinus sylvestris</i> — Scotch or Scots pine	75-95%
<i>Pinus thunbergiana</i> — Japanese black pine.....	70-90%
<i>Pinus wallichiana</i> — Himalayan or Bhutan pine.....	70-90%
❖ <i>Pseudotsuga menziesii</i> — Douglas-fir	65-85%
<i>Sequoiadendron giganteum</i> — giant sequoia.....	70-90%
<i>Taxodium distichum</i> — baldcypress.....	80-100%
<i>Thuja occidentalis</i> — northern whitecedar	65-85%
• eastern arborvitae	

*Often shrubby; ❖Utah native

Species **Rating**

Thuja or *Platycladus orientalis* — Oriental arborvitae... 45-65%
Thuja plicata — western redcedar 70-90%

Angiosperms (mostly broadleaves)

Acer buergeranum — trident maple..... 75-95%
Acer campestre — hedge maple..... 75-95%
Acer ginnala — Amur maple • Ginnala maple 50-70%*
❖ *Acer glabrum* — Rocky Mountain maple..... 75-95%
❖ *Acer grandidentatum* — canyon or bigtooth maple .. 80-100%
Acer griseum — paperbark maple..... 85-100%
❖ *Acer negundo* — boxelder • ash-leaved maple..... 50-70%
 • Manitoba maple
Acer nigrum — black maple 80-95%
Acer palmatum — Japanese maple 75-95%
Acer platanoides — Norway maple 50-70%
Acer pseudoplatanus — sycamore maple 65-95%
Acer rubrum — red maple & Freeman hybrids..... 50-70%
Acer saccharinum — silver maple & Freeman hybrids..40-60%
Acer saccharum — sugar maple 70-90%
Acer tataricum — Tatarian maple 75-95%
Acer truncatum — purpleblow or Shantung maple..... 75-95%
Aesculus californica, glabra, hippocastanum..... 60-80%
 — buckeyes, horsechestnuts
Aesculus x carnea — red horsechestnut..... 70-90%
Ailanthus altissima — tree-of-heaven • ailanthus 35-55%
Albizia julibrissin — mimosa • silk-tree • albizia 65-85%
Alnus glutinosa — European or common alder 60-80%
❖ *Alnus tenuifolia* — thinleaf or mountain alder 65-85%
❖ *Amelanchier alnifolia* — Saskatoon • western 75-95%*
 serviceberry
Amelanchier arborea — downy serviceberry 80-100%
Amelanchier x grandiflora — apple serviceberry 80-100%
❖ *Amelanchier utahensis* — Utah serviceberry 65-85%*
Betula nigra — river birch 60-80%
❖ *Betula occidentalis* — water or river birch..... 60-80%
Betula papyrifera — paper birch..... 55-75%
Betula pendula — European white birch 55-75%
Carpinus betulus — European hornbeam 80-100%
Carpinus caroliniana — American hornbeam 85-100%
 • musclewood
Carya illinoensis — pecan 60-80%
Castanea mollissima — Chinese chestnut 70-90%
Catalpa bignonioides, speciosa, etc. — catalpas 50-70%
Celtis occidentalis — hackberry • common..... 75-95%
 hackberry
❖ *Celtis reticulata* — netleaf hackberry..... 75-95%
Cercidiphyllum japonicum — Katsuratree 60-80%
Cercis canadensis — eastern redbud • Judas-tree..... 80-100%
❖ *Cercis occidentalis* — California redbud 90-100%*
 • western redbud

*Often shrubby; ❖Utah native

Species **Rating**

❖ *Cercocarpus ledifolius* — curlleaf mountain- 70-90%*
 mahogany
❖ *Chilopsis linearis* — desertwillow 45-65%*
Chionanthus virginicus — fringetree • white 0-100%
 fringetree
Cladrastis kentuckea or *C. lutea* — yellowwood..... 70-90%
Cornus alternifolia, florida, etc. — dogwoods 65-85%
Cornus kousa — Kousa dogwood..... 75-95%
Cornus mas — pagoda or alternate leaf dogwood 75-95%
Corylus americana, colurna, cornuta, etc. 70-90%
 — hazelnuts • filberts
Cotinus coggygria, obovatus, etc. — smoketrees 60-80%*
❖ *Cowania mexicana* — cliffrose • quininebush 75-95%*
Crataegus crusgalli, ❖douglasii, laevigata, 70-90%
 x lavallei, phaenopyrum, viridis, etc.* — hawthorns
Cydonia oblongata — quince..... 60-80%
Elaeagnus angustifolia — Russian-olive 5-30%**
Eriobotrya japonica — loquat 60-80%*
Fagus grandifolia, sylvatica, etc. — beechs 80-100%
Fraxinus americana — white ash 70-90%
❖ *Fraxinus anomala* — singleleaf ash • dwarf ash 70-90%*
Fraxinus excelsior — European ash 35-55%
Fraxinus pennsylvanica — green ash 60-80%
Fraxinus quadrangulata — blue ash..... 65-85%
❖ *Fraxinus velutina* — velvet ash • Modesto ash 40-60%
Gleditsia triacanthos — honeylocust..... 70-90%
Gymnocladus dioicus — Kentucky coffeetree 80-100%
Ilex opaca — American holly 80-100%
Juglans cinerea, major, nigra, regia— walnuts and 65-85%
 butternut
Koelreuteria paniculata — goldenraintree 70-90%
Laburnum x watereri — goldenchain tree • Waterer 65-85%
 laburnum
Lagerstroemia indica — crapemyrtle 65-85%*
Liquidambar styraciflua — sweetgum • American 60-80%
 sweetgum
Liriodendron tulipifera — yellow-poplar • tuliptree..... 70-90%
 • tulip-poplar
Maclura pomifera — Osage-orange..... 70-90%
*Magnolia acuminata, grandiflora, kobus, 75-100%
 x loebneri, x soulangiana, stellata, etc.* — magnolias
Malus pumila — apple 50-70%
Malus spp. — crabapple..... 65-90%
Melia azedarach — Chinaberry 30-50%
Morus alba, rubra, etc. — mulberries..... 60-80%
❖ *Ostrya knowltonii* — Knowlton hophornbeam..... 75-95%
Ostrya virginiana — Eastern hophornbeam..... 80-100%
 • ironwood
Phellodendron amurense — Amur corktree..... 70-90%
Pistacia chinensis, vera — pistachio, pistache 75-95%

*Often shrubby; **May be a noxious weed; ❖Utah native

Species	Rating
<i>Platanus x acerifolia, occidentalis</i> — planetrees, sycamores	65-95%
<i>Populus x acuminata</i> — lanceleaf cottonwood	40-60%
<i>Populus alba</i> — white poplar	40-60%
❖ <i>Populus angustifolia</i> — narrowleaf cottonwood	40-60%
❖ <i>Populus balsamifera</i> — balsam poplar	45-65%
<i>Populus x canadensis</i> — Carolina poplar and other hybrid poplars	40-60%
<i>Populus candicans</i> — balm-of-Gilead	45-65%
<i>Populus deltoides</i> — eastern cottonwood	50-70%
❖ <i>Populus fremontii</i> — Fremont cottonwood	60-80%
<i>Populus nigra</i> var. <i>italica</i> — Lombardy poplar	35-55%
❖ <i>Populus tremuloides</i> — quaking or trembling aspen	45-65%
❖ <i>Populus trichocarpa</i> — black cottonwood	50-70%
❖ <i>Prosopis glandulosa</i> or <i>P. juliflora</i> — honey mesquite	60-80%*
<i>Prunus armeniaca</i> — apricot	60-80%
<i>Prunus avium</i> — sweet cherry • mazzard	50-70%
<i>Prunus cerasifera</i> — purpleleaf plum • cherry plum • Myrobalan plum	45-65%
<i>Prunus cerasus</i> — sour cherry	50-70%
<i>Prunus domestica</i> — common plum	50-70%
<i>Prunus padus</i> — European bird cherry • May Day tree	60-80%
<i>Prunus persica</i> — peach	40-60%
<i>Prunus sargentii</i> — Sargent cherry	65-85%
<i>Prunus serrulata</i> — Japanese flowering or Oriental cherry	70-90%
<i>Prunus subhirtella</i> — Higan cherry	70-90%
❖ <i>Prunus virginiana</i> — common chokecherry	55-75%*
<i>Prunus x yedoensis</i> — Yoshino cherry	70-90%
❖ <i>Ptelea angustifolia</i> — common hoptree • wafer-ash • western hoptree	70-90%*
<i>Pyrus calleryana</i> — Callery pear (wide variation by cultivar; ‘Bradford’ 50-70%)	65-90%
<i>Pyrus communis</i> — common pear	50-70%
<i>Pyrus ussuriensis</i> — Ussurian pear	65-85%
<i>Quercus acutissima</i> — sawtooth oak	75-95%
<i>Quercus alba</i> — white oak	80-100%
<i>Quercus bicolor</i> — swamp white oak	90-100%
<i>Quercus cerris</i> — turkey oak	75-95%

*Often shrubby; ❖Utah native

Species	Rating
❖ <i>Quercus gambelii</i> — Gambel, scrub, or Rocky Mountain white oak	70-90%*
<i>Quercus imbricaria</i> — shingle or laurel oak	60-80%
<i>Quercus macrocarpa</i> — bur or mossycup oak	90-100%
<i>Quercus muehlenbergii</i> — chinkapin oak	80-100%
<i>Quercus palustris</i> — pin oak	35-55%
<i>Quercus robur</i> — English oak	80-100%
<i>Quercus rubra</i> — northern red oak	75-95%
<i>Quercus shumardii</i> — Shumard oak	80-100%
❖ <i>Quercus turbinella</i> — shrub live oak	65-85%*
❖ <i>Quercus undulata</i> — wavyleaf oak	65-85%*
<i>Robinia x ambigua</i> — Idaho flowering locust	40-60%
❖ <i>Robinia neomexicana</i> — New Mexican locust	50-70%
<i>Robinia pseudoacacia</i> — black locust	40-60%
❖ <i>Salix amygdaloides</i> — peachleaf willow	50-70%
<i>Salix babylonica</i> — weeping willow	35-55%
<i>Salix fragilis</i> — crack willow	30-50%
<i>Salix matsudana</i> — Hankow willow cultivars, including globe Navajo willow	25-45%
<i>Salix nigra</i> — black willow	40-60%
❖ <i>Sambucus cerulea</i> — blue elder	60-80%*
<i>Sophora japonica</i> — Japanese pagodatree • scholar-tree	60-80%
<i>Sorbus alnifolia</i> — Korean mountain-ash	55-75%
<i>Sorbus americana</i> — American mountain-ash	50-70%
<i>Sorbus aucuparia</i> — European mountain-ash • rowan	45-65%
❖ <i>Sorbus scopulina</i> — Greene mountain-ash	60-80%*
<i>Syringa reticulata</i> — Japanese tree lilac	80-100%
<i>Tamarix parviflora, ramosissima</i> — tamarisk • salt-cedar	5-20%***
<i>Tilia americana, cordata, x euchlora</i> — lindens, basswoods	65-85%
<i>Tilia tomentosa</i> — silver linden	75-95%
<i>Ulmus americana</i> — American or white elm	35-65%
<i>Ulmus glabra</i> — Camperdown elm	75-95%
<i>Ulmus parvifolia</i> — lacebark or Chinese elm	65-85%
<i>Ulmus procera</i> — English elm • elm hybrids	55-75%
<i>Ulmus pumila</i> — Siberian or Chinese elm	25-45%
❖ <i>Yucca brevifolia</i> — Joshua-tree	60-80%*
<i>Zelkova serrata</i> — Japanese zelkova	65-85%

*Often shrubby; **May be a noxious weed; ❖Utah native

Acknowledgments: I thank the Utah Community Forest Council for their support, and several anonymous reviewers who advised me on the species ratings. And thanks to the nurseries that contributed price and other data.

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