



Choosing the right wood for your woodturning project



By: George Freeman



Choosing the right wood

- 1100 species of native trees in the United States
- One-half of them are found in the South
- **200 species of trees are native to Texas**
- **This number does not include the many hybrid cultivars of trees available in the nursery trade for landscaping (that can be used for woodturning).**

This presentation will cover over 50 of the native trees of Texas as well as some from North America with an emphasis on the kinds of wood they produce for turning.



Cost of Wood Turning Blanks

American Hardwoods	Price Per Board Foot (8/4 lumber)
Cedar - Aromatic	4.00
Ash	4.60
White Oak	4.85
Maple	7.50
Black Cherry	9.50
Walnut	9.50
Mesquite	17.00

Foreign Hardwoods	Price Per Board Foot (8/4 lumber)
Purpleheart	11.00
Bubinga	17.00
East Indian Satinwood	35.00
Ziricote	48.00
Cocobolo	58.00
Tulipwood - Brazilian	65.00
Brazilian Rosewood	85.00
African Blackwood	95.00
Gabon Ebony	110.00

Sources for information about wood

Landscaping books

Covers nursery grown trees not native trees.

Forestry books

Covers identification of trees not what kind of wood is in a tree.

Arbor day books

Covers identification of trees not what kind of wood is in a tree.

Woodworking books

Covers how to use a plane, saw or chisel, not about the kinds of or characteristics of wood.

Internet

Results depends on your search query – be specific.



Choices for turning:



White – Brown – or Black **colored** wood?

Example: Hackberry, Catalpa or Walnut

Fine grain or course grained woods?

Example: Holly, Cherry or Oaks?

Stable woods or other woods that may warp, shrink or crack easily?

Example: Mesquite or Sycamore, Red Cedar?

Segmenting: Great woods or Poor woods for segmenting?

Example: Holly, mesquite, maple or Alder, Oak, ash

Hardness of the wood or a Softwood (the Janka scale)?

Example: Ebony, Live oak, Bois d' arc or basswood, cottonwood?

Natural edge bowl or finished edge?

Bark, sapwood quality?

Burl wood, crotch wood or straight grained wood?



Group 1

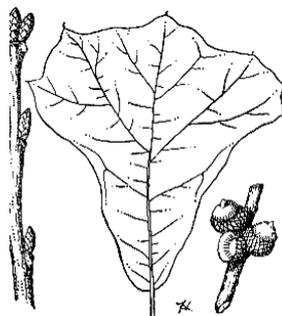
Texas Oak Trees

Number of species in Texas – 52+

• Primary species are:

- Red Oak
- Live Oak
- White Oak
- Post Oak
- Water Oak
- Black Jack Oak

BlackJack Oak

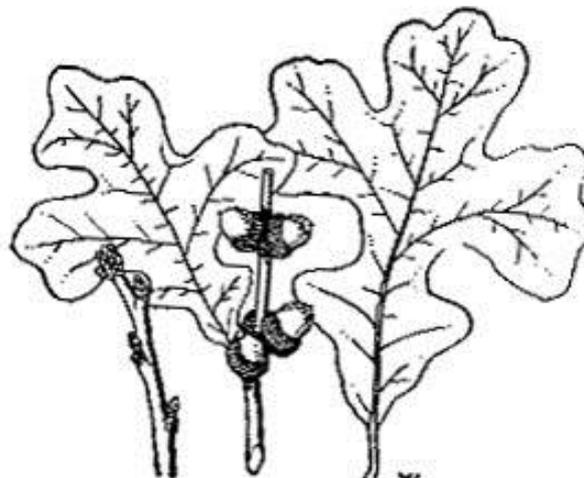
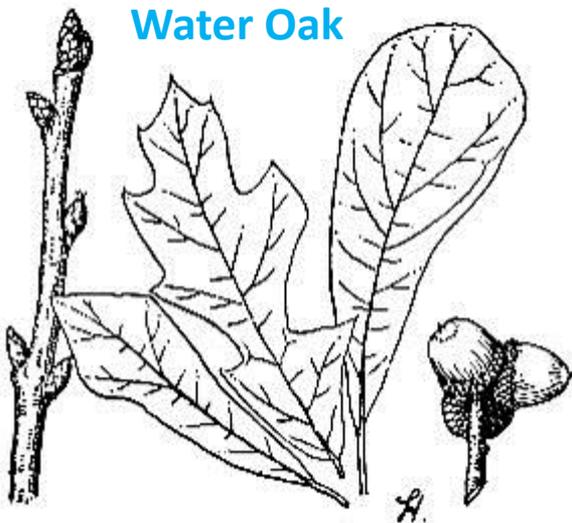


H. Live Oak



Shumard Red Oak

Water Oak



Post Oak



White Oak

Texas Oak Trees

Oak wood is heavy, strong, hard, tough and durable. Often it is course grained and cracks easily while drying. Can react with iron (particularly when wet) and cause staining and discoloration.

The bark and wood is rich in **tannin**.



Tannin damage to cast iron jointer table.

Oak wood is used for:

- Construction Lumber and Beams
- Watertight barrels
- Furniture
- Wagons
- Implement handles
- Interior finish and trim
- Flooring
- Fuel, firewood
- Cross-ties



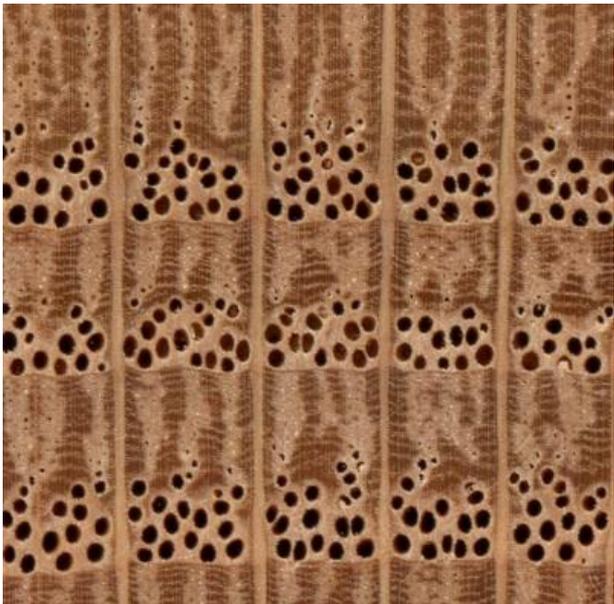
The Color of Oak wood

- Red Oak is reddish-brown.
- BlackJack Oak has many colors including black, red, yellow, brown, pink and all colors may be in one piece of wood.
- White Oak, Water Oak are light brown in color.
- Post Oak light to dark brown

Texas Oak Trees

Red Oak, Water Oak are **open grain** woods. The pores found in the growth rings on Red Oaks are very open and porous, and should be easily identifiable.

White Oak, Blackjack Oak and Post Oak have **closed grain cells**. Their pores are plugged with tyloses, which help make White Oak suitable for water tight vessels, and give it increased resistance to rot and decay. The presence of tyloses is perhaps the best and most reliable way to distinguish the two Oaks.



Red Oak
End Grain
(10x)

White Oak
End Grain
(10x)



Texas Oak Trees



These are the reasons *why* you would want to be able to distinguish between the two:

White Oak is much more resistant to rot, and is suitable for water-holding applications, boat building, outdoor furniture, etc. White Oak tends to be more dense

Red Oak should only be used for interior pieces such as cabinets, indoor furniture, etc. Red Oak is a bit lighter and has a more porous and open grain.

White Oak is usually slightly more expensive than Red Oak.



Texas Oak Trees

Red Oak Group

Red Oak (Quercus rubra)

Black Oak (Q. velutina)

California Black Oak (Q. kelloggii)

Cherrybark Oak (Q. pagoda)

Laurel Oak (Q. laurifolia)

Pin Oak (Q. palustris)

Scarlet Oak (Q. coccinea)

Shumard Oak (Q. shumardii)

Southern Red Oak (Q. falcata)

Water Oak (Q. nigra)

Willow Oak (Q. phellos)

White Oak Group

White Oak (Quercus alba)

Bur Oak (Q. macrocarpa)

Chestnut Oak (Q. prinus)

English Oak (Q. robur)

Holm Oak (Q. ilex)

Oregon White Oak (Q. garryana)

Overcup Oak (Q. lyrata)

Post Oak (Q. stellata)

Sessile Oak (Q. petraea)

Swamp Chestnut Oak (Q. michauxii)

Swamp White Oak (Q. bicolor)

BlackJack Oak (Q. marilandica)

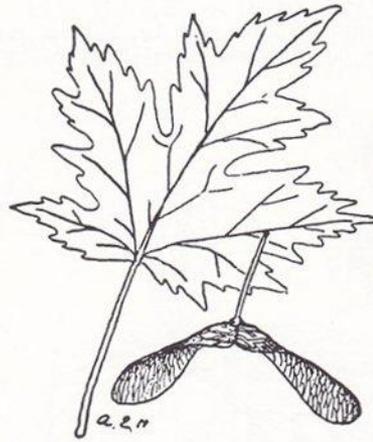
Maple Trees

128 Species world wide, most in Asia
Thirteen species in N. America

Nine species in Texas

Some species are:

- **Silver Maple (soft Maple)**
- **Red Maple (soft Maple)**
- **Hard or Sugar Maple**
- **Box Elder**
- **Ambrosia Maple**



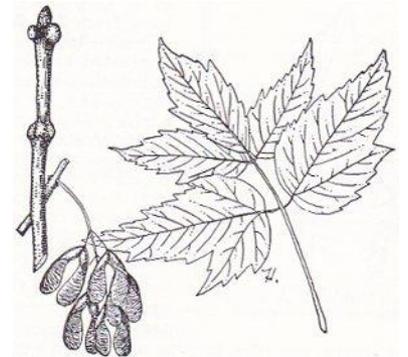
Silver Maple



Sugar or Hard Maple



Red Maple



Box Elder

The Soft Maples

Red Maple
range



Silver Maple - *Acer saccharinum*: Unlike most other hardwoods, the *sapwood* lumber is most commonly used rather than its heartwood. Sapwood color ranges from almost white, to a light golden or reddish brown, while the heartwood is a darker reddish brown. Silver Maple can also be seen with **curly or quilted grain patterns**. Grain is generally straight, but may be wavy. Has a fine, even texture. The growth rings tend to be lighter and less distinct in **Soft Maples than in Hard Maple**.

Silver Maple is so called because of the pale silvery undersides of its leaves. It is readily distinguished from **Sugar Maple (i.e., Hard Maple)** as the leaves of Silver Maple have deep notches between the lobes, whereas Sugar Maple's leaves have shallower notches. Silver Maple is considered to be in the grouping of Soft Maples, and its wood is lighter, softer, and weaker than that of Hard Maple.

The wood is used for Veneer, paper (pulpwood), boxes, crates/pallets, musical instruments, **turned objects**, and other small specialty wood items.

Red Maple - *Acer rubrum*: is appropriately named, as its flowers, twigs, seeds, and autumn leaves are all red. Red Maple is common over a very large area of the eastern United States, and its wood tends to be slightly heavier, stronger, and harder than other species in the grouping of **Soft Maples**.

Hard Maple

Hard Maple, Sugar Maple, Rock Maple - *Acer saccharum*: Birdseye Maple is a figure found most commonly in Hard Maple, though it's also found less frequently in other species. Hard Maple can also be seen with curly or quilted grain patterns. Grain is generally straight, but may be wavy. Has a fine, even texture.

Fairly easy to work with both hand and machine tools, though slightly more difficult than Soft Maple due to Hard Maple's higher density. Maple has a tendency to burn when being machined with high-speed cutters such as in a router. Turns, glues, and finishes well, though blotches can occur when staining, and a pre-conditioner, gel stain, or toner may be necessary to get an even color.

In tree form, Hard Maple is usually referred to as Sugar Maple, and is the tree most often tapped for maple syrup. Sugar Maple's leaves are the shape that most people associate with maple leaves, with vivid autumn coloring ranging from yellow to purplish red. Hard Maple ought to be considered the king of the *Acer* genus. Its wood is stronger, stiffer, harder, and denser than all of the other species of Maple commercially available in lumber form.





Box Elder Maple

Acer negundo

A Soft Maple



Odor: Box Elder has a distinct and unpleasant scent when wet, which mostly subsides once dry.

The red stain is produced by the tree's natural defenses **when wounded**—it is thought that this compound is meant to inhibit the growth of fungus (*Fusarium solani*) that commonly colonizes the tree. Much of the reddish coloring becomes a more subdued pink or brown/gray upon drying.



Ambrosia Maple

Much like [Spalted Maple](#) and other forms of figured maple, Ambrosia Maple is technically not a specific species of Maple, but rather a general description of any type of Maple that has been infested by ambrosia beetles. The beetles bore into the tree, and with it bring fungus that discolors the wood.



Figured Maples

- Ambrosia Maple
- Birdseye Maple
- Curly Maple
- Quilted Maple
- Spalted Maple

Texas Woods

Number of species in Texas

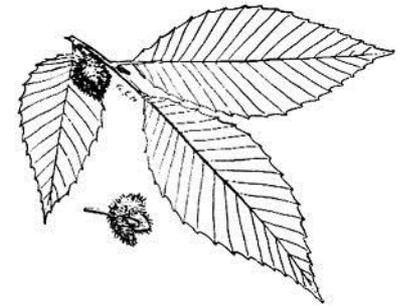
Elm - 7

Pine - 11

Locust - 4

Beech - 1

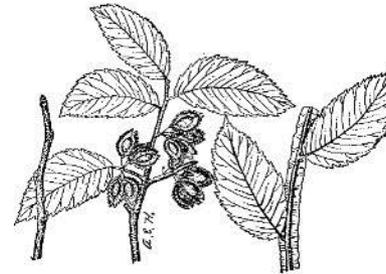
- American Elm
- Cedar Elm
- Loblolly Pine
- Longleaf Pine
- Slash Pine
- Honey Locust
- American Beech



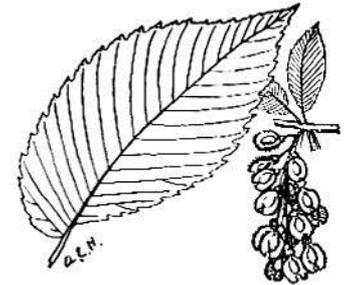
American Beech



Honey Locust
(Thorn Tree)



Cedar Elm



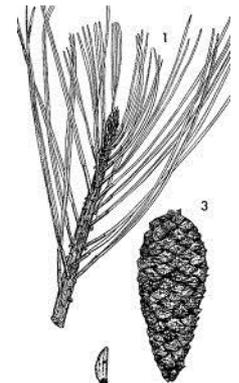
American Elm
(White Elm)



Loblolly Pine



Longleaf Pine



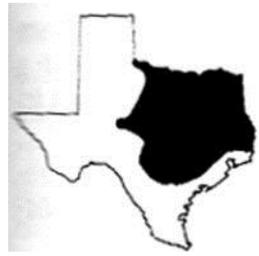
Slash Pine



Cedar Elm Bowl

Texas Woods

American Elm range



American Elm – *Ulmus americana*: Considered a **Soft Elm**. The wood is heavy, hard, strong, tough with an interlocking grain that makes it difficult to split. Soft even grain. The thick sapwood is yellowish with distinct growth rings and the heart wood is light brown with a slight reddish hue. It spalts easily.



American Elm

The wood is used for hubs of wheels, yokes, saddle trees, veneer for baskets and crates, barrel hoops, and slack cooperage. Is considered one of the best woods for barrel staves. It is often used for the arching or curved parts of furniture.

Cedar Elm – *Ulmus crassifolia*: Considered a **Hard Elm** and it's wood is lighter in color, usually creamy white.



Cedar Elm

The Texas Hard Woods

Number of species in Texas

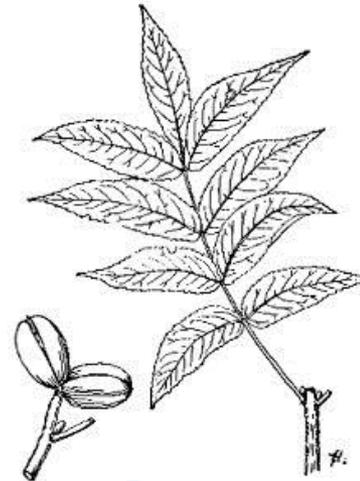
Hickory - 10

Pecan - 3

Walnut - 5

Mesquite - 2

- Shagbark Hickory – *Carya ovata*
- Pecan – *Carya illinoensis*
- Black Walnut – *Juglans nigra*
- Honey Mesquite – *Prosopis juliflora*



Pecan



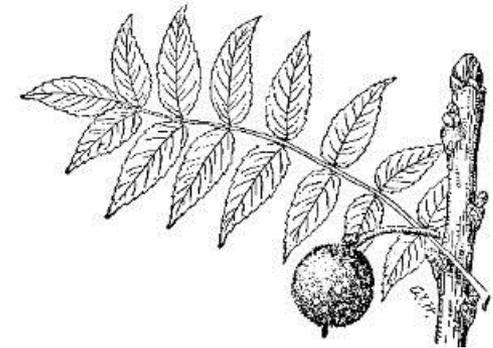
Shagbark Hickory



Hickory Bowl



Honey Mesquite



Black Walnut

The Texas Hard Woods



Pecan - *Carya illinoensis*: The “State Tree of Texas”. The wood is heavy, hard and some what brittle. Pecan wood has a white to light reddish-brown sapwood and a darker red heartwood. It is not as strong as other hickories. The tight grain is straight, is often mottled or wavy with a medium to coarse texture. Undervalued by many woodworker, this is a fine, attractive wood. Known for its flexibility, strength, shock resistance and resiliency. Also has high steam bending strength and crushing strength and high stiffness. Shrinkage is high when drying. **Spalts easily and is the most beautiful of the spalted woods.**



Water Hickory – *Carya aguatica* and **Nutmeg Hickory** – *Carya myristicaeformis* are also considered pecans because of there natural cross between Pecan and Hickory.

The wood is used for turnings, furniture, chairs, drumsticks, fuel, wagon stock and softball bats. Also used for flooring and veneer.



The Texas Hard Woods



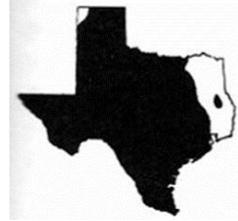
Black Walnut - *Juglans nigra*: The wood has a whitish sapwood and the heartwood is a chocolate or purple-brown, which is unique among commercial hardwoods of the United States. The wood is heavy, hard, strong and shock resistant. It is free from warping and checking. It has distinct growth rings, a mild characteristic odor, and is rated one of the finest domestic cabinet woods. Walnut is prized for veneer and furniture construction. It has a good texture and can be polished to a high finish. Walnut has a high tannin content. Walnut has crotches, burls, fiddle back, and stripes and makes a unique and beautiful bowl.

Its durability make it highly prized for turning, carving, furniture and cabinet work. European and some American walnut is prized for gunstocks.





The Texas Hard Woods



Honey Mesquite - *Prosopis juliflora*: The wood is heavy, hard, and strong with a dark reddish-brown heartwood and a very distinctive yellowish sapwood. Has a distinctive pleasant odor when turned. Mesquite burls are prized for their unique grain when turned. The wood is often crooked with pitch pockets and bark inclusions.

It is much used for smoking meats and because it is durable in the ground for fence posts. Wagon wheels, hubs and spokes were also made from mesquite. Recently it has come into its own for such things as attractive flooring, gunstocks, tables and furniture as well as turned objects. The seedpods were fermented into an alcoholic beverage by Indians.



EBONIZING WOOD – An Experiment

Top coat
did not
stick to
dye



Colored Texas Woods

Number of species in Texas

Walnut - 5

Redcedar - 4

Bois-d'-arc - 1

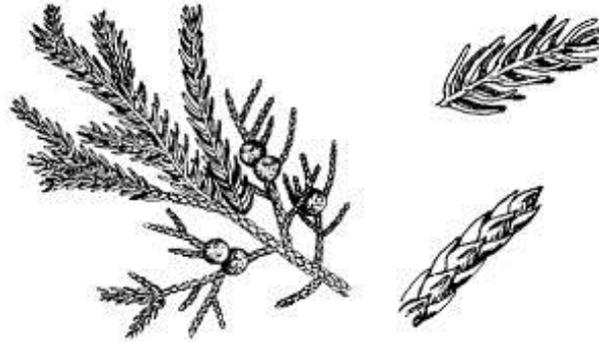
Mulberry - 4

Black Walnut

Eastern Redcedar

Bois-d'-arc/Osage-orange

Red Mulberry



Redcedar



Black Walnut



Bois-d'-arc/Osage-orange



Red Mulberry

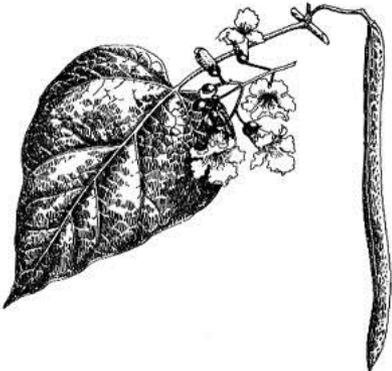
Red Cedar Vase



Fruitwoods and Fine Grain Woods

Number of species in Texas

- Cherry - 4
- Catalpa - 2
- Crepe Myrtle - 0
- Holly - 4
- Pear - 0



Northern Catalpa



Bradford Pear

- Black Cherry
- Northern Catalpa
- Crepe Myrtle
- American Holly
- Bradford Pear



Black Cherry

American Holly

Black Cherry Vase



Crepe Myrtle or Satinwood



More Texas Woods

Number of species in Texas

Magnolia - 3

Cottonwood - 4

Cypress - 2

Poplar - 1

Southern Magnolia

Eastern Cottonwood

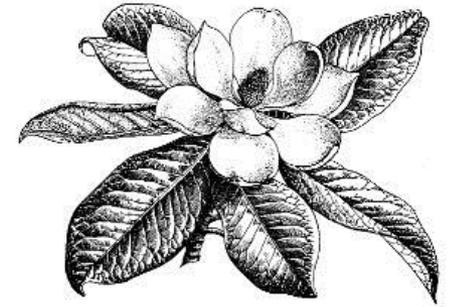
Bald Cypress

Yellow Poplar

Southern Magnolia vase



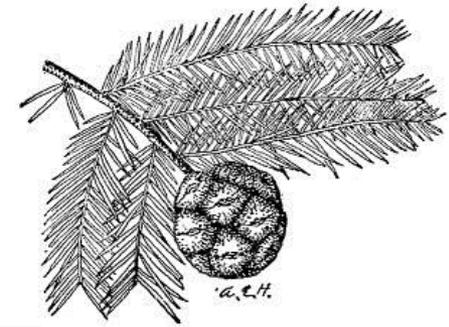
Eastern Cottonwood



Southern Magnolia



Yellow Poplar



Bald Cypress



Bald
Cypress
vase

Last of the Texas Woods

Yaupon Holly – *Ilex vomitoria*

Shining Sumac – *Rhus copallina*



**Western Soapberry
(Chinaberry)**
Sapindus drummondii



Eastern Redbud
Cercis canadensis

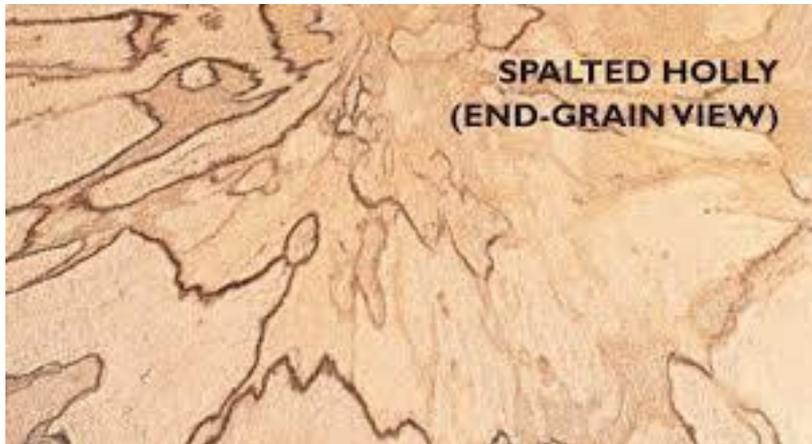


Black Willow
Salix nigra

Spalted Wood

Woods with a tendency to Spalt

Ash, Beech, Cottonwood, Elms,
Hackberry, Hickory, Magnolia, Maples,
Oaks, Pecan, Pines, Poplar, Sweetgum,
Yellow Poplar and others.



References for researching wood

Books:

Forest Trees of Texas, Texas Forest Service, Bulletin 20, 1963

Texas Trees, a friendly guide, Cox & Leslie, 1988

Trees of East Texas, Vines, 1977

Wood, Identifying and using, Meier, 2016

The Real Wood Bible, Gibbs, 2012

Woodworker's Guide to Wood, Peters, 2000

Understanding Wood, Hoadley, 2000

Internet:

The Wood Database, www.wood-database.com/

Use **Goggle's search engine** to look up wood facts or images of objects you may want to turn. Here are some suggested searches:

Goggle/ images/ Elm bowl for instance or Mesquite vases.

Spalted bowls, carved wood.

To look at the color and texture of wood, search for:

Goggle/images/Silver Maple wood or lumber

If I can help you in the future with a wood question, contact me:

George Freeman

Quinlan, Texas

H- 903-356-0856

C- 214-334-4035