



# The 14 Super Trees of the Houston Region

A **Super Tree** is one that has a high rate of carbon absorption, flood mitigation, and greenhouse gas absorption ability.

When ranking Houston-Region native trees in each of these categories, the first 10 species fall in the top 26 for all three categories (data recorded for 10 year old trees).

(\* ) Indicates tree species that do well in wet areas



**1) Live Oak**

<b>CO2 Sequestered per year (lbs.):</b> 268 (annual); 1,023 (10 yr)
<b>Water Absorption per year (gals.):</b> 2,656
<b>GHG Absorption per year (lbs.):</b> 1.9
<b>Flower:</b> N/A
<b>Height at Maturity:</b> 60-80 ft
<b>Canopy Width:</b> 60-120 ft
<b>Soil Tolerance:</b> Acidic, Alkaline, Clay
<b>Light:</b> Full-Partial Sun



**2) Boxelder**

<b>CO2 Sequestered per year (lbs.):</b> 159 (annual); 899 (10 yr)
<b>Water Absorption per year (gals.):</b> 2051
<b>GHG Absorption per year (lbs.):</b> 1.3
<b>Flower:</b> Yellowish Green to Reddish Orange
<b>Height at Maturity:</b> 30-50 ft
<b>Canopy Width:</b> 30-50 ft
<b>Soil Tolerance:</b> Alkaline, Clay, Acidic
<b>Light:</b> Full-Partial Sun



**3) \*Laurel Oak**

<b>CO2 Sequestered per year (lbs.):</b> 194 (annual); 875 (10 yr)
<b>Water Absorption per year (gals.):</b> 2,518
<b>GHG Absorption per year (lbs.):</b> 1.3
<b>Flower:</b> White
<b>Height at Maturity:</b> 60-70 ft
<b>Canopy Width:</b> 35-45 ft
<b>Soil Tolerance:</b> Acidic, (slightly) Alkaline, Clay
<b>Light:</b> Full-Partial Sun



**4) Red Maple**

<b>CO2 Sequestered per year (lbs.):</b> 139 (annual); 859 (10 yr)
<b>Water Absorption per year (gals.):</b> 2,592
<b>GHG Absorption per year (lbs.):</b> 1.6
<b>Flower:</b> Red
<b>Height at Maturity:</b> 40-60 ft
<b>Canopy Width:</b> 35-45 ft
<b>Soil Tolerance:</b> Acidic (prefers), Alkaline, Clay
<b>Light:</b> Full-Partial Sun



**5) \*River Birch**

<b>CO2 Sequestered per year (lbs.):</b> 215 (annual); 925 (10 yr)
<b>Water Absorption per year (gals.):</b> 2646
<b>GHG Absorption per year (lbs.):</b> 1.3
<b>Flower:</b> Reddish green
<b>Height at Maturity:</b> 40- 70 ft
<b>Canopy Width:</b> 40 - 60 ft
<b>Soil Tolerance:</b> Acidic, Loamy
<b>Light:</b> Full - Partial Sun



**6) American Elm**

<b>CO2 Sequestered per year (lbs.):</b> 114 (annual); 669 (10 yr)
<b>Water Absorption per year (gals.):</b> 2364
<b>GHG Absorption per year (lbs.):</b> 1.4
<b>Flower:</b> Reddish Green
<b>Height at Maturity:</b> 70-90 ft
<b>Canopy Width:</b> 50-70 ft
<b>Soil Tolerance:</b> Alkaline, Clay
<b>Light:</b> Full Sun

Visit Houston Wilderness: <http://houstonwilderness.org/>

Tree Species Characteristic Sources: <http://mortonarb.org> - <http://arborday.org> - <http://hort.ufl.edu>

Ecosystems Services Data Sources: Air quality: [https://www.fs.fed.us/nrs/pubs/jrnl/2014/nrs\\_2014\\_nowak\\_001.pdf](https://www.fs.fed.us/nrs/pubs/jrnl/2014/nrs_2014_nowak_001.pdf) Carbon:

[https://www.epa.gov/sites/production/files/2016-12/documents/sc\\_co2\\_tsd\\_august\\_2016.pdf](https://www.epa.gov/sites/production/files/2016-12/documents/sc_co2_tsd_august_2016.pdf)

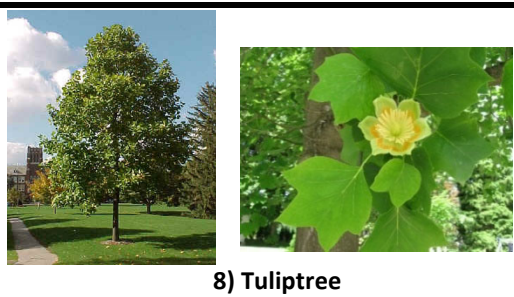
<https://www.fs.usda.gov/ccrc/tools/tree-carbon-calculator-ctcc> VOC: <https://www.nrs.fs.fed.us/units/urban/local-resources/downloads/vocrates.pdf>

Stormwater: [http://www.itreetools.org/eo/resources/iTree\\_Eco\\_Precipitation\\_Interception\\_Model\\_Descriptions.pdf](http://www.itreetools.org/eo/resources/iTree_Eco_Precipitation_Interception_Model_Descriptions.pdf)



**7) Slippery Elm**

<b>CO2 Sequestered per year (lbs.):</b> 197 (annual); 669 (10 yr)
<b>Water Absorption per year (gals.):</b> 2,199
<b>GHG Absorption per year (lbs.):</b> 1.5
<b>Flower:</b> Reddish Orange
<b>Height at Maturity:</b> 40-60 ft
<b>Canopy Width:</b> 30-50 ft
<b>Soil Tolerance:</b> Alkaline, Acidic, Clay
<b>Light:</b> Full-Partial Sun



**8) Tuliptree**

<b>CO2 Sequestered per year (lbs.):</b> 81 (annual); 659 (10 yr)
<b>Water Absorption per year (gals.):</b> 3,006
<b>GHG Absorption per year (lbs.):</b> 1.9
<b>Flower:</b> Yellow-orange
<b>Height at Maturity:</b> 70-90 ft
<b>Canopy Width:</b> 40 ft
<b>Soil Tolerance:</b> Acidic, Clay
<b>Light:</b> Full Sun



**9) American Sycamore**

<b>CO2 Sequestered per year (lbs.):</b> 111 (annual); 652 (10 yr)
<b>Water Absorption per year (gals.):</b> 2,747
<b>GHG Absorption per year (lbs.):</b> 1.9
<b>Flower:</b> Green to Greenish Red
<b>Height at Maturity:</b> 75-100 ft
<b>Canopy Width:</b> 50-70 ft
<b>Soil Tolerance:</b> Alkaline (prefers), Acidic, Clay
<b>Light:</b> Full-Partial Sun



**10) Green Ash**

<b>CO2 Sequestered per year (lbs.):</b> 200 (annual); 624 (10 yr)
<b>Water Absorption per year (gals.):</b> 1,977
<b>GHG Absorption per year (lbs.):</b> 1.3
<b>Flower:</b> Greenish yellow
<b>Height at Maturity:</b> 50-60 ft
<b>Canopy Width:</b> 25-40 ft
<b>Soil Tolerance:</b> Alkaline, Clay, Acidic
<b>Light:</b> Full Sun

A **Super Carbon Tree** is one that has a high carbon absorption ability (ranked in the top 20), but ranks below the top 20 in flood mitigation and greenhouse gas absorption ability. Two that are native to the Houston Region are listed below.



**11) Loblolly Pine**

<b>CO2 Sequestered per year (lbs.):</b> 106 (annual); 479 (10 yr)
<b>Water Absorption per year (gals.):</b> 1,480
<b>GHG Absorption per year (lbs.):</b> 1.1
<b>Flower:</b> Yellowish Green
<b>Height at Maturity:</b> 60-90 ft
<b>Canopy Width:</b> 25-35 ft
<b>Soil Tolerance:</b> Acidic, Clay
<b>Light:</b> Full Sun



**12) White Ash**

<b>CO2 Sequestered per year (lbs.):</b> 118 (annual); 447 (10 yr)
<b>Water Absorption per year (gals.):</b> 1,839
<b>GHG Absorption per year (lbs.):</b> 1.3
<b>Flower:</b> White
<b>Height at Maturity:</b> 50-80 ft
<b>Canopy Width:</b> 40-50 ft
<b>Soil Tolerance:</b> Acidic, Alkaline
<b>Light:</b> Full-Partial Sun



**13) \*Water Oak**



**14) Sweetgum**

<b>CO2 Sequestered per year (lbs.):</b> 173 (annual); 869 (10 yr)	<b>CO2 Sequestered per year (lbs.):</b> 150 (annual); 719 (10 yr)
<b>Water Absorption per year (gals.):</b> 2,879	<b>Water Absorption per year (gals.):</b> 2,395
<b>GHG Absorption per year (lbs.):</b> 1.4	<b>GHG Absorption per year (lbs.):</b> 1.5
<b>Flower:</b> Yellowish to Green	<b>Flower:</b> Green-Yellow
<b>Height at Maturity:</b> 60-100 ft	<b>Height at Maturity:</b> 60-75 ft
<b>Canopy Width:</b> 50-80 ft	<b>Canopy Width:</b> 40-75 ft
<b>Soil Tolerance:</b> Acidic, Loamy, Clay	<b>Soil Tolerance:</b> Acidic (prefers), Clay
<b>Light:</b> Full-Partial Sun	<b>Light:</b> Full Sun
<b>Visit Houston Wilderness:</b> <a href="http://houstonwilderness.org/">http://houstonwilderness.org/</a>	
<b>Tree Species Characteristics Sources:</b> <a href="http://mortonarb.org">http://mortonarb.org</a> - <a href="http://arboday.org">http://arboday.org</a> - <a href="http://hort.ufl.edu">http://hort.ufl.edu</a> - <a href="http://friendslaarb.org/">http://friendslaarb.org/</a>	
<b>Ecosystems Services Data Sources:</b> <b>Air quality:</b> <a href="https://www.fs.fed.us/nrs/pubs/jrnl/2014/nrs_2014_nowak_001.pdf">https://www.fs.fed.us/nrs/pubs/jrnl/2014/nrs_2014_nowak_001.pdf</a> <b>Carbon:</b> <a href="https://www.epa.gov/sites/production/files/2016-12/documents/sc_co2_tsd_august_2016.pdf">https://www.epa.gov/sites/production/files/2016-12/documents/sc_co2_tsd_august_2016.pdf</a>	
<b>Stormwater:</b> <a href="https://www.fs.usda.gov/ccrc/tools/tree-carbon-calculator-ctcc">https://www.fs.usda.gov/ccrc/tools/tree-carbon-calculator-ctcc</a> <b>VOC:</b> <a href="https://www.nrs.fs.fed.us/units/urban/local-resources/downloads/vocrates.pdf">https://www.nrs.fs.fed.us/units/urban/local-resources/downloads/vocrates.pdf</a>	