CLIMATE SOLUTIONS
Planting Trees

Most trees are planted in communities to provide beauty or shade. While these are excellent benefits, trees serve many other purposes, such as improving air quality, intercepting and cleaning stormwater runoff, and even mitigating climate change.

PHOTOSYNTHESIS

Like all plants, trees take carbon dioxide from the atmosphere for their own growth and energy, through a process called photosynthesis. As a byproduct, they produce the oxygen we breathe.

So, through photosynthesis, trees remove climate-warming carbon dioxide from the atmosphere and help us mitigate the effects of climate change.

SEQUESTRATION

The process of capturing and storing carbon dioxide from our atmosphere is called carbon sequestration. The carbon is then stored in the tree until it dies, and even after could be maintained in wood products.

According to the U.S. Forest Service's i-Tree, a mature, native tree can sequester or absorb more than 3000 pounds of carbon dioxide in its life!

NOT ALL TREES ARE EQUAL

All trees can sequester carbon, but some species have more potential to help us mitigate the effects of climate change.

Using i-Tree data, UF/IFAS Extension Sarasota County calculated the possible environmental benefits of common trees, palms and conifers native to South Florida.

Florida's palms are the least effective at carbon sequestration, absorbing only up to 5 pounds of carbon dioxide per year. An oak, mahogany, pine or cedar tree, though, can sequester up to 769 pounds per year. Given a choice, broadleaf trees and conifers can be better options for protecting our climate.

Planting and maintaining trees to remove carbon dioxide from the atmosphere are critical opportunities for climate change mitigation. Carefully choosing which trees we plant can make a big difference, along with increasing our efforts to protect and maintain older trees and the carbon they've stored (plus the shade they provide, which helps cut emissions from energy used for cooling).

You can help. Plant more trees. And, protect those already in the ground.

LEARN MORE at blogs.ifas.ufl.edu/sarasotaco (keyword: Treejuvenation).

Comparing Ecosystem Benefits of Common Urban Trees and Palms in South Florida

			ECOSYSTEM BENEFITS					
			Annual CO_2 Sequestered *pounds*	Lifetime CO_2 Equivalent of Carbon Sequestered *pounds*	Annual Stormwater Runoff Avoided *gallons*	Annual Rainfall Intercepted *gallons*	Annual Ozone Air Pollution Removed *ounces*	Annual Sulfur Dioxide Air Pollution Removed *ounces*
BROADLEAF TREES	**Gumbo Limbo** *Bursera simaruba*		52	16,325	516	2,331	51	3
	Mahogany *Swietana mahogani*		623	11,963	516	2,331	44	2
	Live Oak *Quercus virginiana*		487	10,994	505	2,283	48	3
	East Palatka Holly *Ilex x attenuata*		769	7,321	146	659	24	1
	Southern Magnolia *Magnolia grandiflora*		423	2,830	222	1,003	32	2
CONIFERS	**Slash Pine** *Pinus elliottii*		539	4,930	271	1,224	32	2
	Bald Cypress *Taxodium spp.*		356	4,872	269	1,216	39	2
	Eastern Red Cedar *Juniperus virginiana*		57	2,253	292	1,318	44	2
PALMS	**Florida Thatch Palm** *Thrinax radiata*		2	75	50	226	5	0.2
	Cabbage Palm *Sabal palmetto*		5	75	50	226	5	0.2

Data from i-Tree, a cooperative of government and private industry resources.

LEARN MORE about the ecosystem benefits of common urban trees:

- Comparative Ecosystem Benefits of Common Urban Trees and Palms in South Florida: edis.ifas.ufl.edu/publication/EP604
- UF/IFAS Urban Tree Factsheets: edis.ifas.ufl.edu/entity/topic/urban_forestry
- Treejuvenation urban forestry: tiny.cc/ufsaraext_treejuvenation
- i-Tree MyTree Benefits Database: mytree.itreetools.org

LEARN MORE about sustainability efforts in Sarasota County:

- UF/IFAS Extension Sarasota County: www.scgov.net/sustainability

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