

i-Tree County <https://county.itreetools.org/>

## Welcome to i-Tree County Benefits!

Quickly learn the numerous benefits that trees provide within your county. You can assess the benefits for an area within the county or the entire county. Click **Get Started** and select one county from the map on the next page.

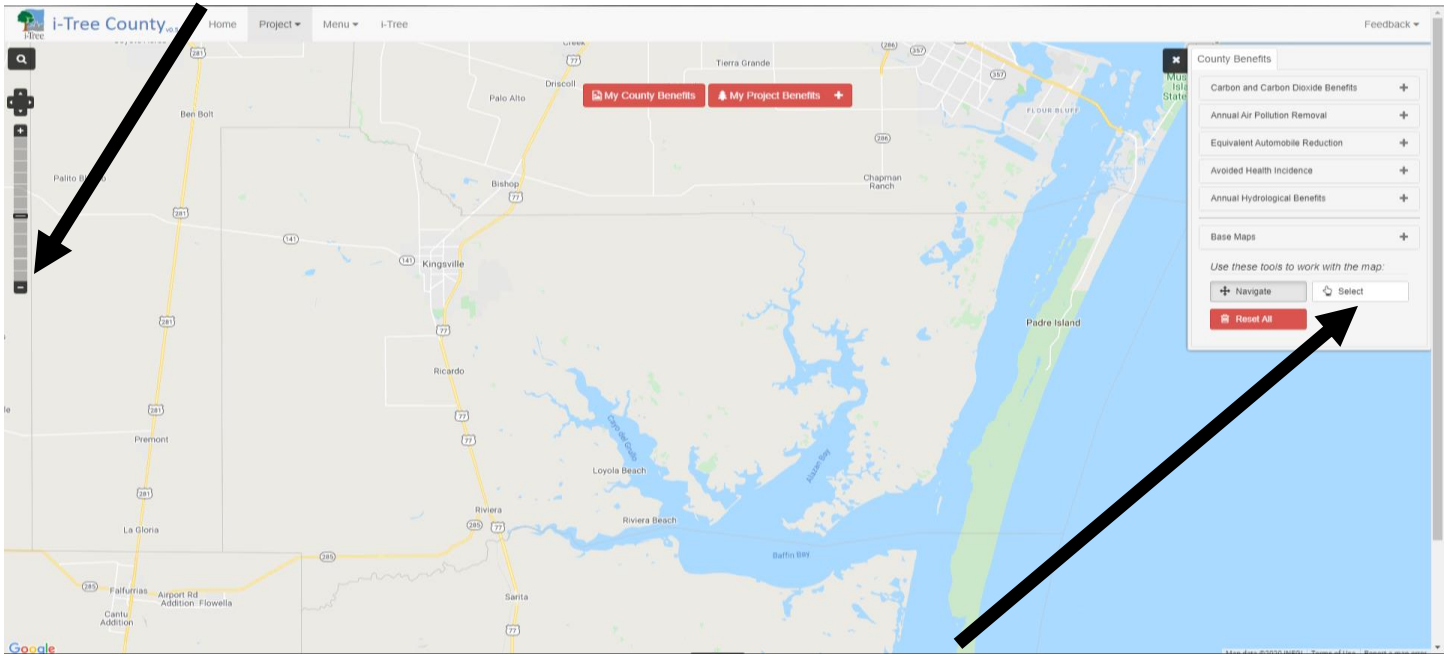
The following tree benefits can be accessed:

- Total carbon stored (tons and dollar value)
- Annual carbon sequestration (tons and dollar value)
- Air pollution removal per year (pounds of NO<sub>2</sub>, SO<sub>2</sub>, O<sub>3</sub> and PM<sub>10</sub> or PM<sub>2.5</sub>)
- Estimate of pollution removal effect relative to automobile emission (i.e., reduction in number of vehicles per year that equals pollution removal)
- Pollution removal value per year (dollar values associated with improved human health)
- Avoided health incidences due to improved air quality per year (numerous metrics including avoided mortality)
- Annual transpiration (millions of gallons)
- Annual interception (millions of gallons)
- Annual avoided runoff (millions of gallons, dollar value)

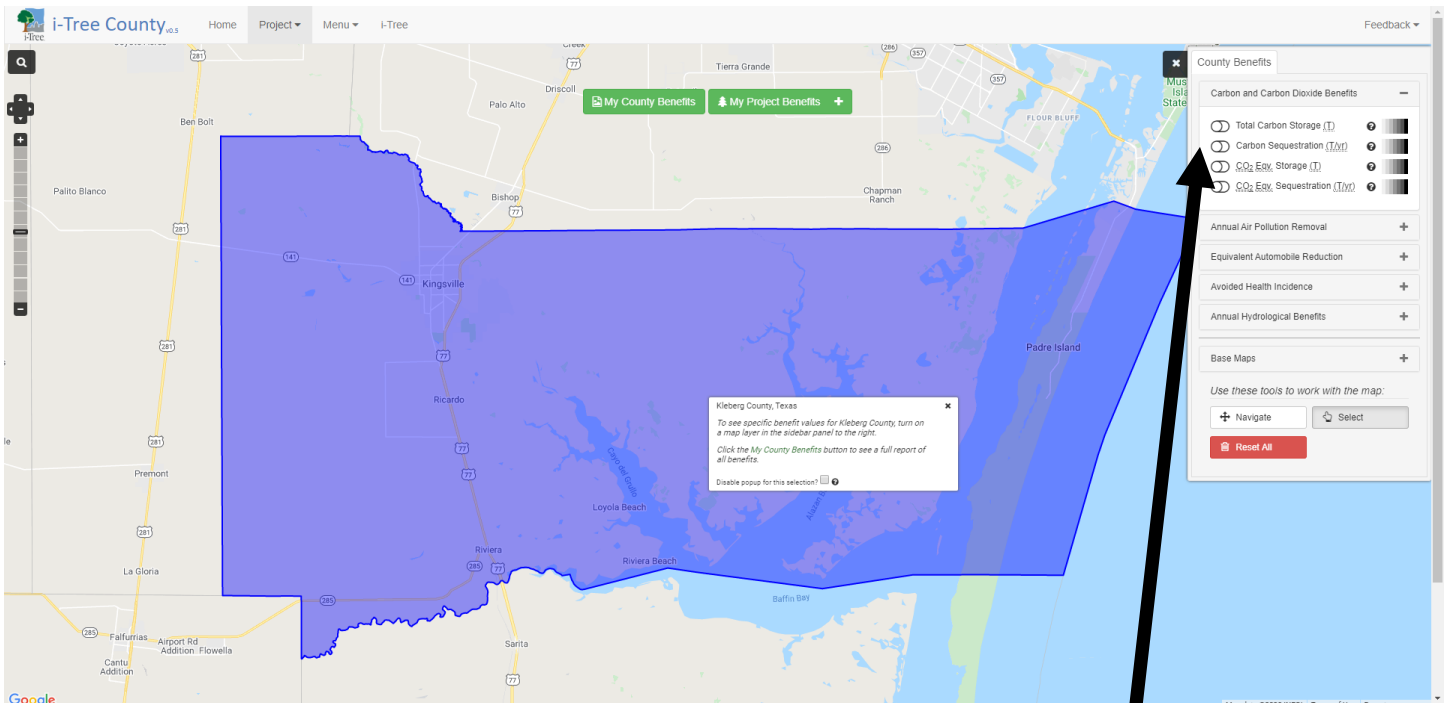
Click **Get Started**, enter in the name and state of the desired county, e.g., Kleberg TX

You can use the Drag Bar to fill more of the screen with the map.

Zoom out to see entire county



Use the select tool, click on the desired county



Select toggles, e.g., Total Carbon Storage

Kleberg County, Texas

To see specific benefit values for Kleberg County, turn on a map layer in the sidebar panel to the right.

Click the My County Benefits button to see a full report of all benefits.

Disable popup for this selection?  ?

Kleberg County, Texas

**Total Carbon Storage (T)**

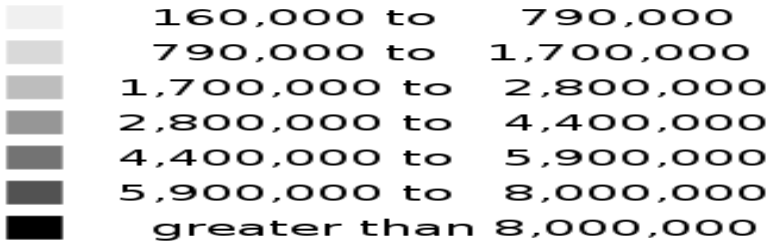
Carbon and Carbon Dioxide Benefits

741,796.6 Short Ton

Valued at \$126,513,961

Disable popup for this selection?  ?

less than 160,000



Carbon storage measured in tons. Carbon storage refers to the amount of carbon currently contained within a plant's woody tissue (above and below ground), including the amount of carbon within leaves for evergreen species.

Close

to see details for the scale values for each toggle Click on the ?

Note that you can zoom out to see the toggled benefit for the entire country, you can see regions with high or low levels.

Use the Navigate button to slide the map up or down, etc.

### County Benefits

#### Carbon and Carbon Dioxide Benefits

- Total Carbon Storage (T)
- Carbon Sequestration (T/yr)
- CO<sub>2</sub> Eqv. Storage (T)
- CO<sub>2</sub> Eqv. Sequestration (T/yr)

#### Annual Air Pollution Removal

Poor air quality is a common problem in many urban areas. It can lead to health problems, landscape damage, degraded ecosystems, and reduced visibility.

- Total Removal (lb/yr)
- CO Removal (lb/yr)
- NO<sub>2</sub> Removal (lb/yr)
- SO<sub>2</sub> Removal (lb/yr)
- O<sub>3</sub> Removal (lb/yr)
- PM<sub>2.5</sub> Removal (lb/yr)
- PM<sub>10+</sub> Removal (lb/yr)

#### Equivalent Automobile Reduction

Reduction in number of vehicles per year that equals pollution removal

- Related To CO
- Related to NO<sub>2</sub>
- Related to PM<sub>2.5</sub>
- Related to SO<sub>2</sub>

### Avoided Health Incidence

#### Annual Avoided Health Incidence Due To Improved Air Quality

- Acute Bronchitis
- Acute Myocardial Infarction
- Acute Respiratory
- Asthma Exacerbation
- Chronic Bronchitis
- Emergency Room Visits
- Lower Respiratory
- Mortality
- School Loss Days
- Upper Respiratory
- Work Loss Days

#### Hospital Admissions

- Total
- Cardiovascular
- Respiratory

#### Annual Hydrological Benefits

- Transpiration (MG/year)
- Interception (MG/year)
- Avoided Runoff (MG/year)

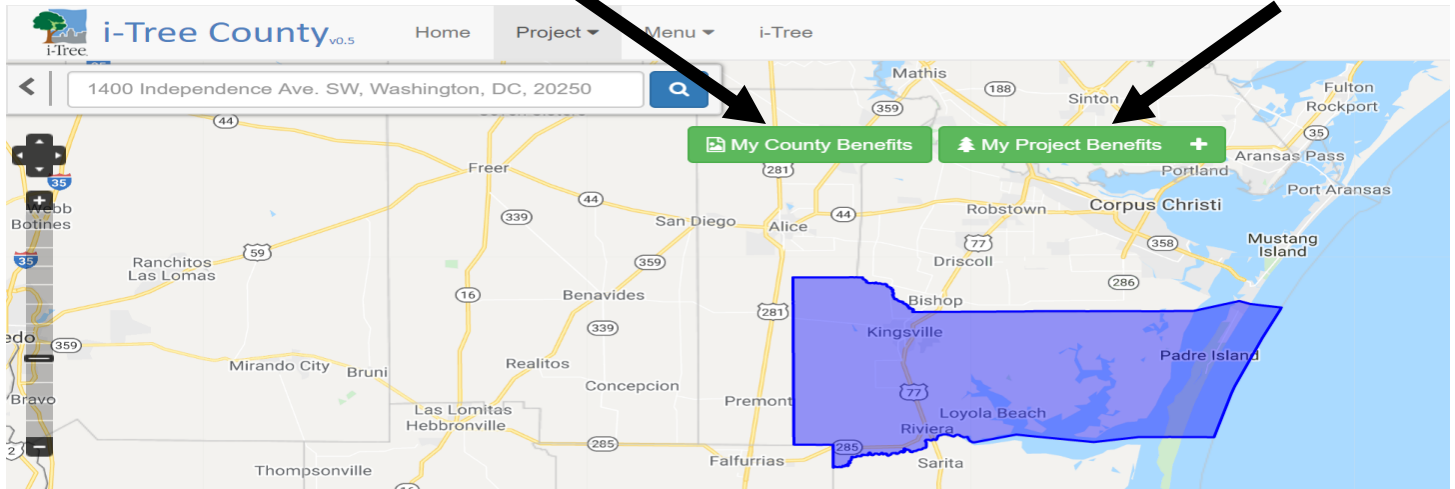
#### Base Maps

Google Streets

Use these tools to work with the map:



Click on MY COUNTY BENEFITS for full report. (see next page for My Project Benefits)



Kleberg county's trees provide the following benefits:



#### Annual Air Pollution Removal Benefits

1,685,496.8	lb/yr	Total Air Pollution Removal
33,326	\$/yr	
15,252.9	lb/yr	CO Removal
185	\$/yr	
71,155.9	lb/yr	NO <sub>2</sub> Removal
66	\$/yr	
1,141,995.6	lb/yr	O <sub>3</sub> Removal
4,278	\$/yr	
56,285.9	lb/yr	PM <sub>2.5</sub> Removal
6,815	\$/yr	
15,747.2	lb/yr	SO <sub>2</sub> Removal
6	\$/yr	
385,059.4	lb/yr	PM <sub>10</sub> Removal
21,976	\$/yr	

#### Annual Avoided Health Incidence Due To Improved Air Quality

0.00	Emergency Room Visits
0.00	Hospital Admissions
1.31	Acute Respiratory Symptoms
0.58	Asthma Exacerbation
0.00	Mortality
0.40	School Loss Days
0.00	Hospital Admissions, Respiratory
0.00	Hospital Admissions, Cardiovascular
0.00	Acute Myocardial Infarction
0.00	Chronic Bronchitis
0.00	Acute Bronchitis
0.01	Upper Respiratory Symptoms
0.01	Lower Respiratory Symptoms
0.05	Work Loss Days

#### Annual Automobile Emission Removal Benefits

70.0	Equivalent Reduction in Vehicles for CO Removal
5,093.8	Equivalent Reduction in Vehicles for NO <sub>2</sub> Removal
25,935.8	Equivalent Reduction in Vehicles for PM <sub>2.5</sub> Removal
85,308.0	Equivalent Reduction in Vehicles for SO <sub>2</sub> Removal

#### Carbon and Carbon Dioxide Benefits

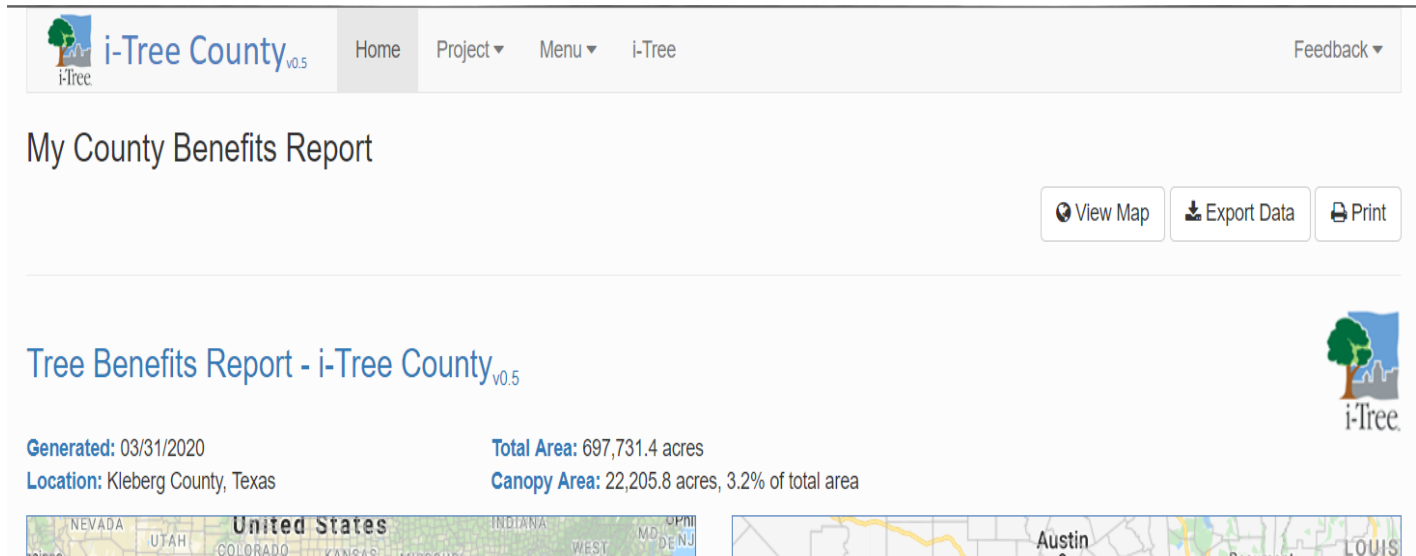
741,796.6	T	Total Carbon Storage
126,513,961	\$	
34,882.8	T/yr	Carbon Sequestration
5,949,279	\$/yr	
2,719,921.1	T	CO <sub>2</sub> Equivalent Storage
126,513,961	\$	
127,903.4	T/yr	CO <sub>2</sub> Sequestration
5,949,279	\$/yr	

#### Annual Hydrological Benefits

5,983.0	MG/yr	Transpiration
1,757.8	MG/yr	Rainfall Interception
7.4	MG/yr	Avoided Runoff
\$65,885	\$/yr	

Click on View Map to return to the map and toggles, etc.

To save the full report, click on Print and then SAVE as a PDF



i-Tree Academy VIDEO on **Landscape & County** (120min total). <https://bit.ly/2JfMGEC>

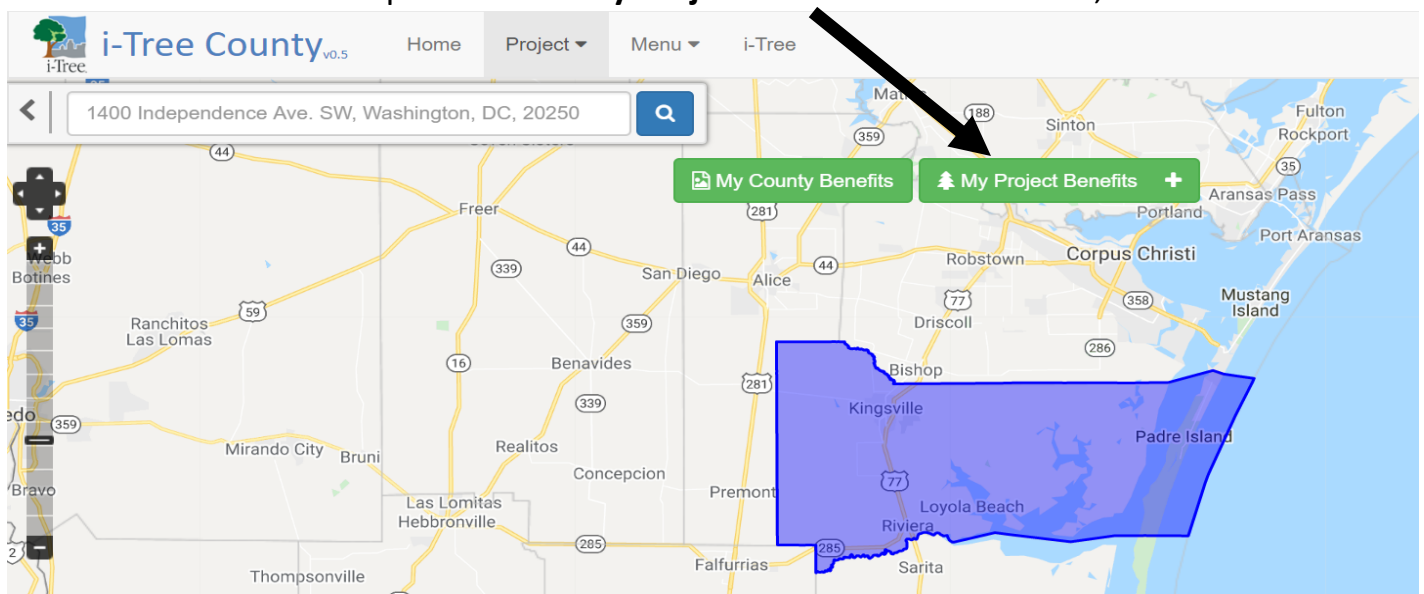
i-Tree **Landscape** runs starting at 15 min. to 1:29 end – so it is very long!

i-Tree **County** runs from 1:43 – 1:56.

**County** is easier to use than **Landscape**, so it is good practice before getting into Landscape.

*(Disregard the first 15 min. & the last 10 min. of the VIDEO, those portions are Academy leaders intro & assignments for those in the i-Tree Academy as enrolled participants)*

Listen to the explanation of **My Project Benefits** on the VIDEO, minutes: 1:52 – 1:55



Please watch these videos before next Wednesday.

i-Tree Landscape <https://vimeo.com/391548795> 3 min introduction to Landscape.

i-Tree Planting (calculator) <https://vimeo.com/392766760> 3 min introduction to Planting.



# Tree Benefits Report - i-Tree County v0.5

**Generated:** 03/31/2020

**Total Area:** 697,731.4 acres

**Canopy Area:** 22,205.8 acres, 3.2% of total area

**Location:** Kleberg County, Texas



Kleberg county's trees provide the following benefits:

## Annual Air Pollution Removal Benefits

1,685,496.8	<u>lb/yr (Pounds per year)</u>	Total Air Pollution Removal
33,326	<u>\$/yr (Dollars per year)</u>	
15,252.9	<u>lb/yr (Pounds per year)</u>	<u>CO (Carbon Monoxide) Removal</u>
185	<u>\$/yr (Dollars per year)</u>	
71,155.9	<u>lb/yr (Pounds per year)</u>	<u>NO<sub>2</sub> (Nitrogen Dioxide) Removal</u>
66	<u>\$/yr (Dollars per year)</u>	
1,141,995.6	<u>lb/yr (Pounds per year)</u>	<u>O<sub>3</sub> (Ozone) Removal</u>
4,278	<u>\$/yr (Dollars per year)</u>	
56,285.9	<u>lb/yr (Pounds per year)</u>	<u>PM<sub>2.5</sub> (Particulate Matter 2.5) Removal</u>
6,815	<u>\$/yr (Dollars per year)</u>	
15,747.2	<u>lb/yr (Pounds per year)</u>	<u>SO<sub>2</sub> (Sulfur Dioxide) Removal</u>
6	<u>\$/yr (Dollars per year)</u>	
385,059.4	<u>lb/yr (Pounds per year)</u>	<u>PM<sub>10*</sub> (Particulate Matter) Removal</u>
21,976	<u>\$/yr (Dollars per year)</u>	

## Annual Avoided Health Incidence Due To Improved Air Quality

0.00	Emergency Room Visits
0.00	Hospital Admissions
1.31	Acute Respiratory Symptoms
0.58	Asthma Exacerbation
0.00	Mortality
0.40	School Loss Days
0.00	Hospital Admissions, Respiratory
0.00	Hospital Admissions, Cardiovascular



## Annual Avoided Health Incidence Due To Improved Air Quality

0.00	Acute Myocardial Infarction
0.00	Chronic Bronchitis
0.00	Acute Bronchitis
0.01	Upper Respiratory Symptoms
0.01	Lower Respiratory Symptoms
0.05	Work Loss Days

## Annual Automobile Emission Removal Benefits

70.0	Equivalent Reduction in Vehicles for <u>CO (Carbon Monoxide)</u> Removal
5,093.8	Equivalent Reduction in Vehicles for <u>NO<sub>2</sub> (Nitrogen Dioxide)</u> Removal
25,935.8	Equivalent Reduction in Vehicles for <u>PM<sub>2.5</sub> (Particulate Matter)</u> Removal
85,308.0	Equivalent Reduction in Vehicles for <u>SO<sub>2</sub> (Sulfur Dioxide)</u> Removal

### Annual Hydrological Benefits

5,963.0	<u>MG (Millions of Gallons)/yr (Year)</u>	Transpiration
1,757.8	<u>MG (Millions of Gallons)/yr (Year)</u>	Rainfall Interception
7.4	<u>MG (Millions of Gallons)/yr (Year)</u>	Avoided Runoff
\$65,985	<u>\$/yr (Dollars per year)</u>	

### Carbon and Carbon Dioxide Benefits

741,796.6	<u>T (Tons)</u>	Total Carbon Storage
126,513,961	<u>\$ (Dollars)</u>	
34,882.8	<u>T/yr (Tons per year)</u>	Carbon Sequestration
5,949,279	<u>\$/yr (Dollars per year)</u>	
2,719,921.1	<u>T (Tons)</u>	<u>CO<sub>2</sub> (Carbon Dioxide) Equivalent Storage</u>
126,513,961	<u>\$ (Dollars)</u>	
127,903.4	<u>T/yr (Tons per year)</u>	<u>CO<sub>2</sub> (Carbon Dioxide) Sequestration</u>
5,949,279	<u>\$/yr (Dollars per year)</u>	



AMERICAN FORESTS

- [www.fs.fed.us](http://www.fs.fed.us)
- [www.davey.com](http://www.davey.com)
- [www.arborday.org](http://www.arborday.org)
- [www.urban-forestry.com](http://www.urban-forestry.com)
- [www.isa-arbor.com](http://www.isa-arbor.com)
- [www.caseytrees.org](http://www.caseytrees.org)
- [www.americanforests.org](http://www.americanforests.org)

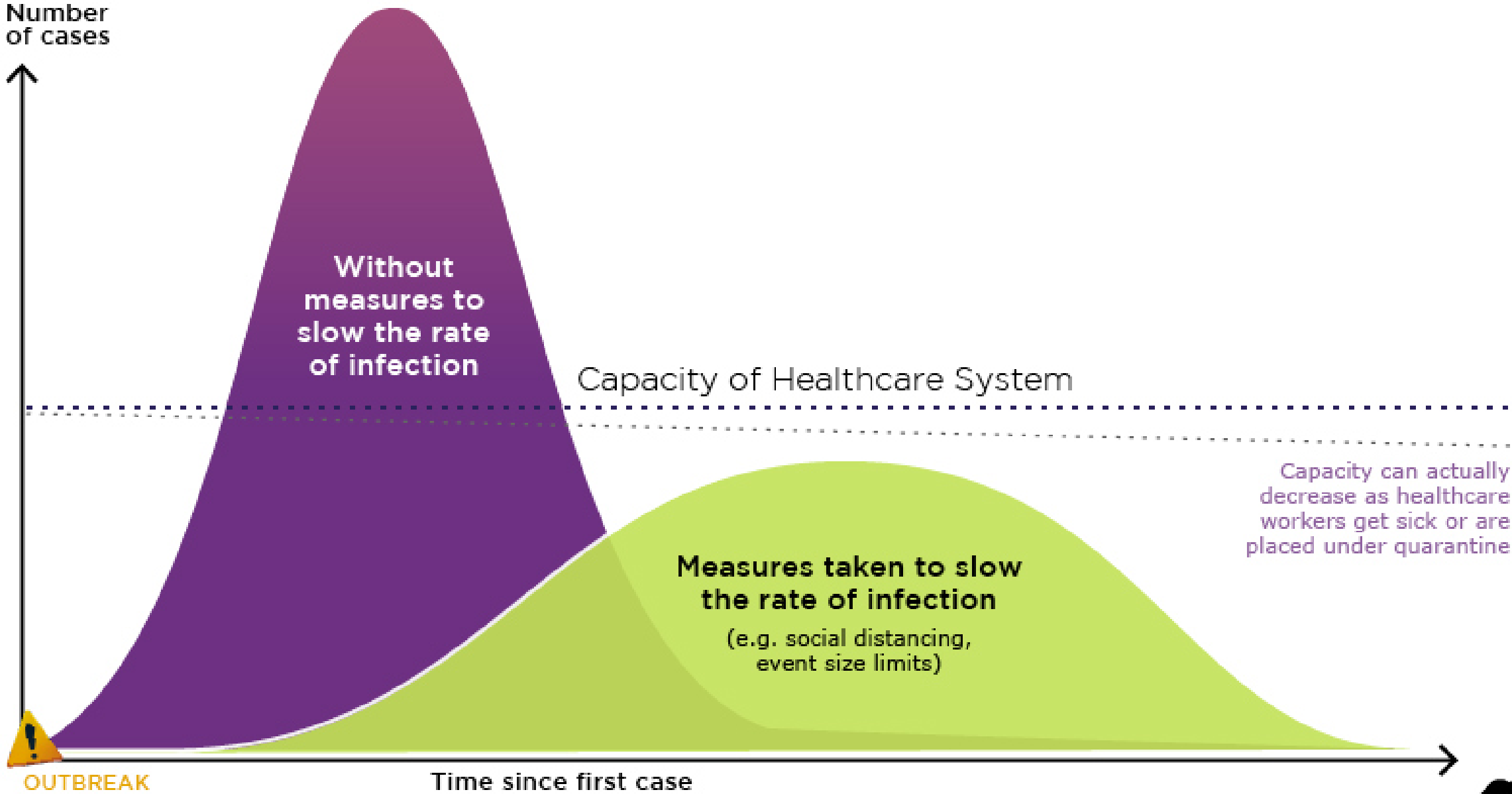
*Use of this tool indicates acceptance of the End-User License Agreement (EULA), which can be found at:  
[https://www.itreetools.org/resources/content/iTree\\_End\\_Users\\_License\\_Agreement.pdf](https://www.itreetools.org/resources/content/iTree_End_Users_License_Agreement.pdf)*

# CESL 3301 – Community Forestry

- (1) Objectives for the rest of the class
- (2) Expectations and assignments



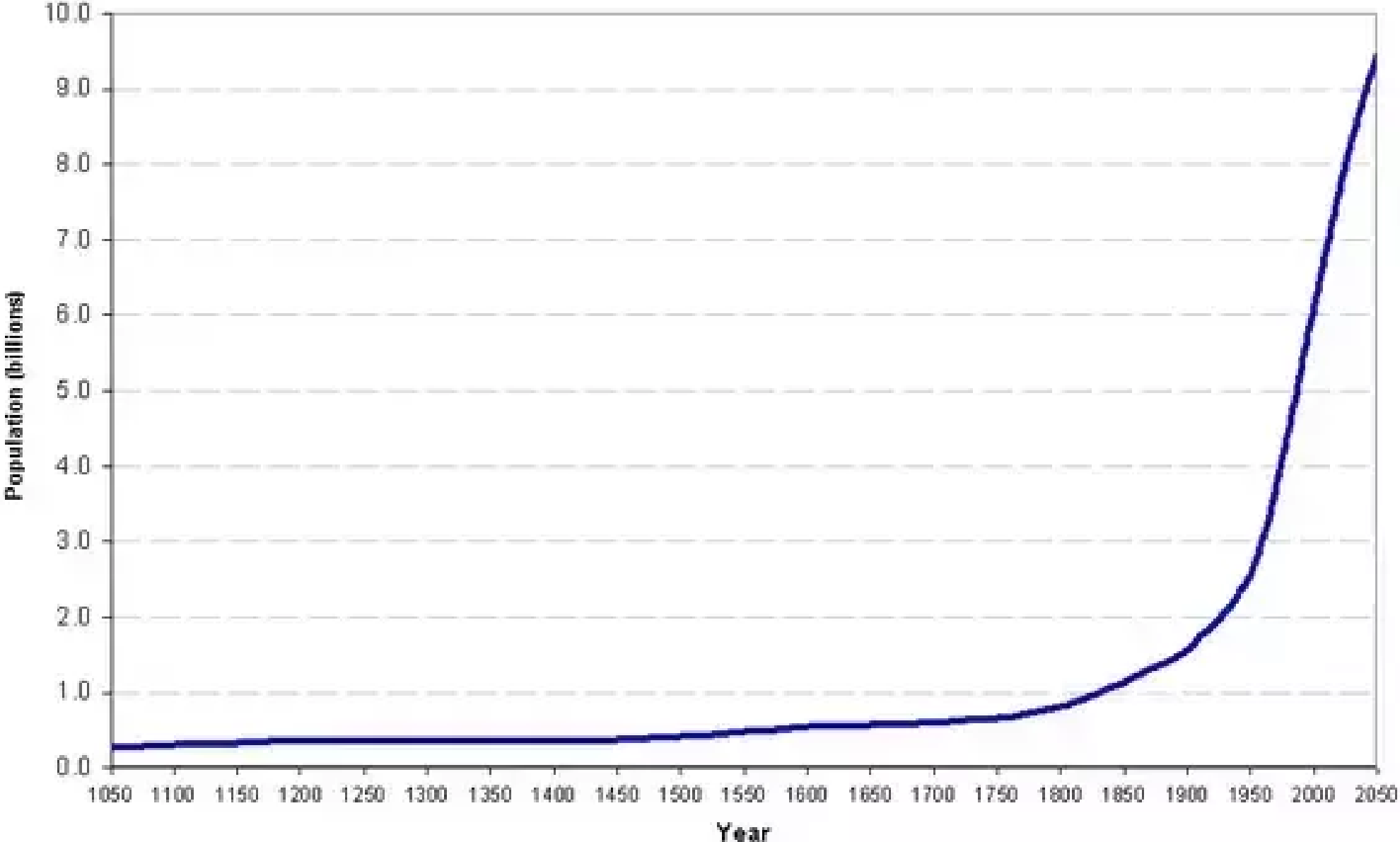
# Flattening the COVID-19 Case Curve



Source: Adapted from Drew Harris, CDC



World Population and Growth Rate



# Your objectives for the course

1. Students will apply basic concepts of biology and physiology of plants to understand the concepts of ecosystem services, especially of trees in urban environments.
2. Students will gain a better understanding of the tradeoff of different ecosystem services of trees in urban and rural areas.
3. Through group work, independent projects, and experiential learning with community partners, students will deepen skills of effective public engagement, scientific communication, and scientific literacy.
4. Students of this class will apply these skills in a solutions-oriented approach -- informed by science and public engagement, in a community-based project, to begin to recognize the intersection of professional skills, social responsibility, and engaged scholarship.

# Your (long term) objectives for the course

- Increase communication and public engagement skill
- Increase confidence in scientific and technical skills
- Increase understanding and confidence in communication and public engagement goals, opportunities, and mechanisms
- Develop and integrate public engagement techniques in your work
- Build network of colleagues conducting and building capacity for community engaged scholarship



# What you'll do this week

- Stay at home as best as possible
- Regroup
- Establish avenues for communication with instructor and others.
- Learn and practice techniques (pacing, tree height) for measuring trees in your neighborhood/shelter in place
- Learn to use MyTree, and explain this to at least one other friend, neighbor, etc.
- Present your + neighbor tree benefits to the class
- Continue to write in your journal

# What you'll do this semester

- Stay at home as best as possible
- Learn techniques how to communicate and engage using digital media
- Develop a landscape plan by learning to use iTree Landscape (next week)
- Communicate your plan, expected benefits, etc. in a short analytical paper (due Mid April)
- Communicate your findings through an op-ed, infographic, short video, or any other new methods of science communication and public engagement (due end of semester)
- Reflect on, report about, and evaluate your learning via journaling and survey instruments
- Meet with Dr. Racelis via zoom for final check-in exam