

i-Tree Landscape Instructions

What is i-Tree?

i-Tree is a suite of software developed by the U.S. Forest Service to calculate environmental benefits of trees and other information.

What is i-Tree Landscape?

i-Tree Landscape is a browser-based program with which a user can gauge tree cover at different spatial scales and allow users to prioritize planting locations based on different criteria (such as finding where there is low canopy and high poverty).

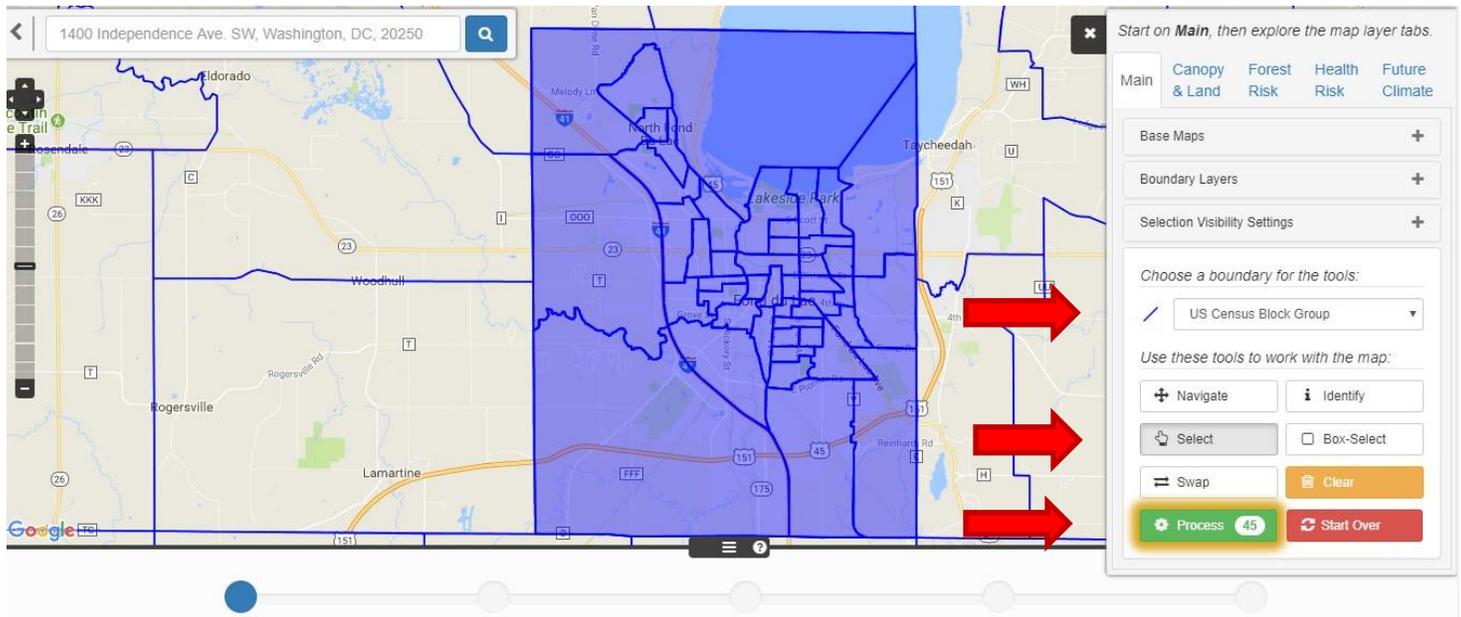
Let's Get Started

Step 1: Read the description of the program and click "Get Started"

Step 2: Type your desired location in the address box or use the zoom buttons on the left to navigate to your location of interest. TIP: change what you see on the map by exploring the map layer tabs.

Step 3: Choose your boundary layer* for your tree canopy. Then select your polygons of interest with the “Select” or “Box Select” buttons. Once your areas have been selected, press “Process”.

*Census block groups are currently the smallest unit of geography available for i-Tree Landscape analysis.



Step 4: Scroll down to see a general breakdown of the land within your selected areas. “Plantable Space” is any land that is not already forested and not impervious material (like a house or street). Click the inverted triangle to expand the table so you can see the canopy of each polygon.

		Area		Canopy		Impervious		Plantable Space	
		acre	%	acre	%	acre	%	acre	%
Selection Total:		31,309.8	100.00	1,630.4	6.24	5,346.8	20.48	19,130.1	73.26



Step 5: You have calculated the canopy breakdown of each selected polygon.

Remove	Type	ID	Swap	Highlight	Area		Canopy		Impervious		Plantable Space	
					acre	%	acre	%	acre	%	acre	%
✖	Block Group	550390401002	⇄	☐	253.5	0.81	16.1	10.25	60.5	38.44	80.6	51.22
✖	Block Group	550390408003	⇄	☐	79.7	0.25	6.9	8.68	36.9	46.34	35.8	44.93
✖	Block Group	550390405003	⇄	☐	65.9	0.21	3.0	4.54	39.5	59.93	23.7	35.95
✖	Block Group	550390408005	⇄	☐	79.8	0.25	6.7	8.44	37.4	46.83	35.4	44.40
✖	Block Group	550390413004	⇄	☐	130.3	0.42	9.9	7.65	57.8	44.66	61.7	47.68
✖	Block Group	550390413001	⇄	☐	7,032.6	22.46	111.1	3.59	414.3	13.38	2,574.9	83.13
✖	Block Group	550390402002	⇄	☐	84.1	0.27	6.5	7.68	44.8	53.28	32.7	38.86
✖	Block Group	550390408001	⇄	☐	54.4	0.17	4.0	7.34	29.5	54.23	20.9	38.46
✖	Block Group	550390410003	⇄	☐	164.4	0.53	13.0	7.89	63.3	38.49	88.1	53.56
✖	Block Group	550390407005	⇄	☐	7,081.7	22.62	493.2	7.06	639.2	9.15	5,849.6	83.71
✖	Block Group	550390411002	⇄	☐	1,880.2	6.01	204.6	10.96	144.0	7.72	1,517.0	81.28
✖	Block Group	550390403001	⇄	☐	395.0	1.26	10.7	2.71	240.2	60.94	143.5	36.41
✖	Block Group	550390409004	⇄	☐	98.8	0.32	7.4	7.45	43.3	43.80	48.2	48.72
✖	Block Group	550390404002	⇄	☐	86.6	0.28	7.9	9.11	39.9	46.04	38.8	44.83
✖	Block Group	550390411004	⇄	☐	782.3	2.50	30.1	3.86	171.3	21.97	578.8	74.23

Step 6: When finished exploring the canopy breakdown, select “Next”.

Remove	Type	ID	Swap	Highlight	Area		Canopy		Impervious		Plantable Space	
					acre	%	acre	%	acre	%	acre	%
▼	Selection Total:				31,309.8	100.00	1,630.4	6.24	5,346.8	20.48	19,130.1	73.26



Step 7: You have no calculated environmental benefits of the forest canopy within your area of interest. Select different tabs to see different sets of benefits (you can select Carbon, Air Pollution Removal and Hydrology). You can again click the inverted arrow to see the benefits broken down by each polygon. When you are finished, click “Next”.

Remove	Type	ID	Swap	Highlight	\$	Short Ton	\$/yr	Myr	\$	Short Ton	\$/yr	Myr
Selection Total:					7,578,112.0	52,993.8	212,005.0	1,482.6	7,578,821.0	194,179.4	212,025.0	5,432.4

Step 8: In this section, you can set priorities for tree planting locations. What this entails is selecting different sets of information to guide your planting decisions. For example, you can seek areas that have high population density, low tree canopy and high levels of ozone pollution. First, select a color scheme. Next, you can click a “Common Scenario” to produce a commonly sought set of information (like high density, low canopy, high planting space availability).

How To Prioritize Tree Planting

To map optimal areas to plant trees, create a **"Priority Planting Index"** scenario from user-specified, weighted criteria (under Custom Scenarios) or use one of the Common Scenarios (above). Scenarios are based upon the **Land Cover** dataset selected (above) - HiRes, 2011, 2001.

The three **Common Scenarios** are:

- Population:** (default) an index weighted towards areas of *relatively high population density*, low tree cover per capita, and high available planting space.
- Minorities:** an index weighted towards areas of *relatively high minority population density*, low tree cover per capita, and high available planting space.
- Poverty:** an index weighted towards areas of *relatively high proportion of population below the poverty line*, low tree cover per capita, and high available planting space.

To create a **Custom Scenario**:

- Select from one or more criteria (the blue boxes under Custom Scenarios) by using the **+ Add Criteria** button and their drop-down.
 - For each criteria, set an **Importance** (from 0 to 100). The sum of the all weights must equal 100.
 - Optional: to distribute weights equally among the selected criteria, click the **Equalize** button.



Step 9: Instead of a common search, you can customize the scenario. In the example below, high ozone was selected as a layer of information to help prioritize planting location. Each time the scenario changes, click “Update Map Display” for the map to reflect your changes.

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The three **Common Scenarios** are:

- **Population:** (default) an index weighted towards areas of *relatively high population density*, low tree cover per capita, and high available planting space.
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- **Poverty:** an index weighted towards areas of *relatively high proportion of population below the poverty line*, low tree cover per capita, and high available planting space.

To create a **Custom Scenario**:

1. Select from one or more criteria (the blue boxes under Custom Scenarios) by using the **+ Add Criteria** button and their drop-down.
 - For each criteria, set an **Importance** (from 0 to 100). The sum of the all weights must equal 100.
 - Optional: to distribute weights equally among the selected criteria, click the **Equalize** button.
2. Click **Update Map Display** to see the results on map (above) and legend (below).
3. Each Custom Scenario can be stored by clicking **Store Scenario**. These saved scenarios can be included in your report when you **Generate Results**.

Custom Scenario

I want to prioritize for areas that have a...

Current Prioritization Scenario Legend

Stored Planting Prioritization Scenarios

Step 10: The map reflects the updated scenario, showing areas of Fond du Lac (in red) where there is a balance of low tree canopy, high population density and high ozone levels.



Step 11: Click “Next” to move on to create reports.

Use these tools to work with the map:

- Navigate
- Identify
- Select
- Box-Select
- Swap
- Clear
- Process 45
- Start Over

Planting Prioritization +

Generate Results

Find Locations Explore Location Data See Tree Benefits Prioritize Tree Planting

Land Cover: HiRes, 2011, 2001

Common Scenarios: Population, Minorities, Poverty

Next →

How To Prioritize Tree Planting

To map optimal areas to plant trees, create a "Priority Planting Index" scenario from user-specified, weighted criteria (under Custom Scenarios) or use one of the Common Scenarios (above). Scenarios are based upon the **Land Cover** dataset selected (above) - HiRes, 2011, 2001.

The three **Common Scenarios** are:

- Population:** (default) an index weighted towards areas of *relatively high population density*, low tree cover per capita, and high available planting space.

Custom Scenario

I want to prioritize for areas that have a...

High The average O3 (ppb) value for all days in 2008.

Importance (weight): 100 %

Step 12: Navigate through and fill out information for the report generator. If you want to use a common report structure, click “Executive Summary”, “Everything” or one of the options within “Pre-Formatted Reports”.

Find Locations Explore Location Data See Tree Benefits Prioritize Tree Planting Generate Results

Back Executive Summary Everything Pre-Formatted Reports Export Data Done

To create a report, start by entering a title to describe it. Then visit each section to add individual report elements, such as tables, charts, or maps. Repeatedly use the **Add** button as many times as desired, to enter multiple report elements within a section. Once everything is configured, click **Done** to see the report.

For more information, see the [Help](#) page.

Report Title

Sub-title

Location Information

Report element	Display as	Show only total?
Area	Table	<input type="checkbox"/>
Dataset	Unit	



Step 13: If you want to customize the report, scroll down to the different sections (Location Information, Tree Benefits, Planting Prioritization). When in a section, select “Combined” if you want data related to a certain dataset (e.g. “Canopy and Impervious”). Select “Individual” if you are just interested in one piece of information rather than it lumped together (e.g. only interested in the acreage of tree canopy). You then select your information of choice under “Report element”. When those and other criteria are selected, choose “Add”.

Location Information

Show only total? Field type for element list

Combined
 Individual

Report element: Canopy & Impervious

Display as: Table Dataset: HiRes 2011 2001 Unit: Metric English

+ Add

Description (Optional text may be entered here for each report element, or edited later via the button in the table below.)

Configuration of Report Elements Remove All

Remove	Title	Display as	Unit	Dataset	Description	Total Only	Ordering
<input checked="" type="checkbox"/>	Canopy & Impervious	Bar chart	English	2011	<input type="button" value="Edit"/>	N/A	1 <input type="button" value="↕"/>
<input checked="" type="checkbox"/>	Canopy & Impervious	Table	English	2011	<input type="button" value="Edit"/>	true	2 <input type="button" value="↕"/>

Step 14: Then scroll back up to the top and select “Done” to produce a report.

Find Locations Explore Location Data See Tree Benefits Prioritize Tree Planting Generate Results

To create a report, start by entering a title to describe it. Then visit each section to add individual report elements, such as tables, charts, or maps. Repeatedly use the **Add** button as many times as desired, to enter multiple report elements within a section. Once everything is configured, click **Done** to see the report.

For more information, see the [Help](#) page.

Report Title

Sub-title

Location Information

Report element: Area Display as: Table Show only total?

Dataset: Unit:



Step 15: Copy and paste the report into a spreadsheet or word document.

Location Information

Canopy & Impervious (High Resolution UTC)

	Area		Canopy		Impervious		Plantable Space	
	acre	%	acre	%	acre	%	acre	%
Selection Total:	31,309.8	100.00	1,630.4	6.24	5,346.8	20.48	19,130.1	73.26

Tree Benefits

Air Pollutants (High Resolution UTC)

	CO		NO ₂		O ₃		PM _{2.5}		SO ₂		PM ₁₀₊	
	\$/yr	lb/yr	\$/yr	lb/yr	\$/yr	lb/yr	\$/yr	lb/yr	\$/yr	lb/yr	\$/yr	lb/yr
Selection Total:	207.0	515.4	967.0	10,738.3	43,900.0	56,089.9	88,156.0	2,754.0	56.0	1,796.8	15,170.0	8,748.2

Hydrology Quantity (High Resolution UTC)

	Transpiration (MG/yr)	Rainfall Interception (MG/yr)	Avoided Runoff (MG/yr)	Avoided Runoff (\$/yr)
Selection Total:	206.7	112.2	14.2	127,124.0

