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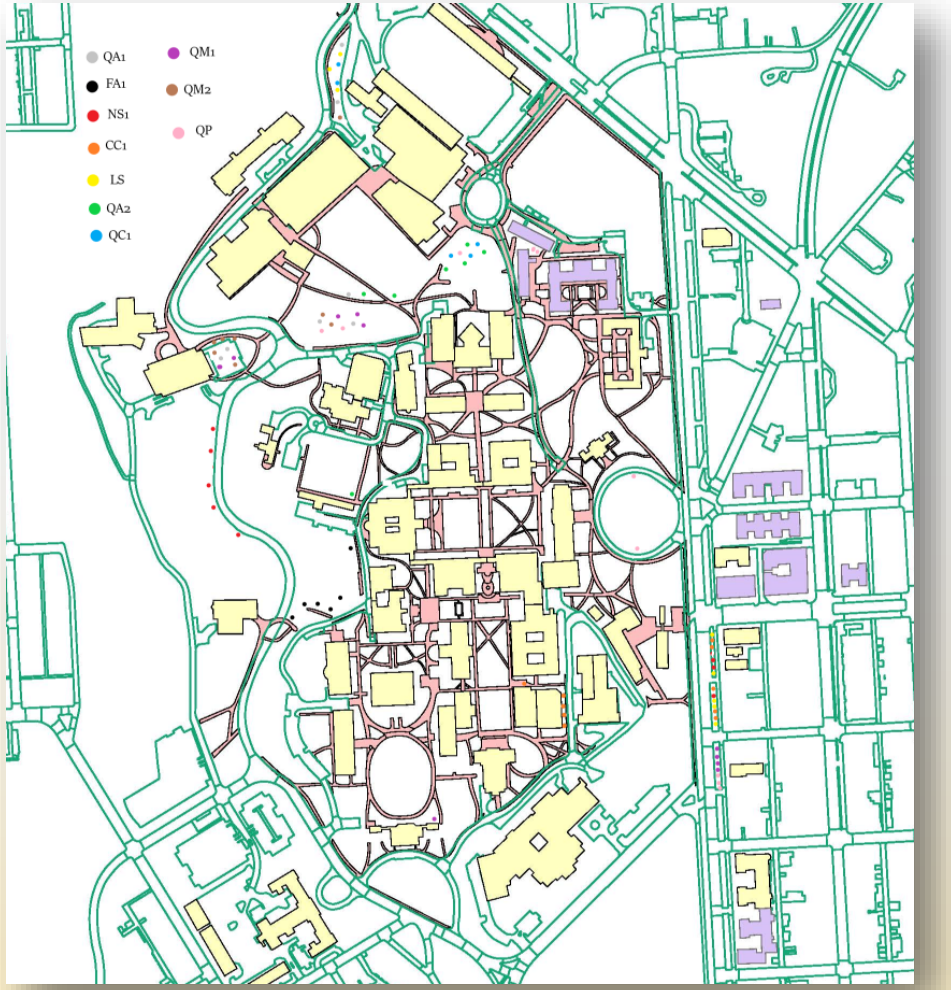
Good Things Come in Trees

Reimagining Tree Inventory Management for Johns Hopkins Homewood Campus

Shelby Kline, JMT Technology Group

The Tree Inventory

- Trees
- Memorial Trees
- Champion Trees



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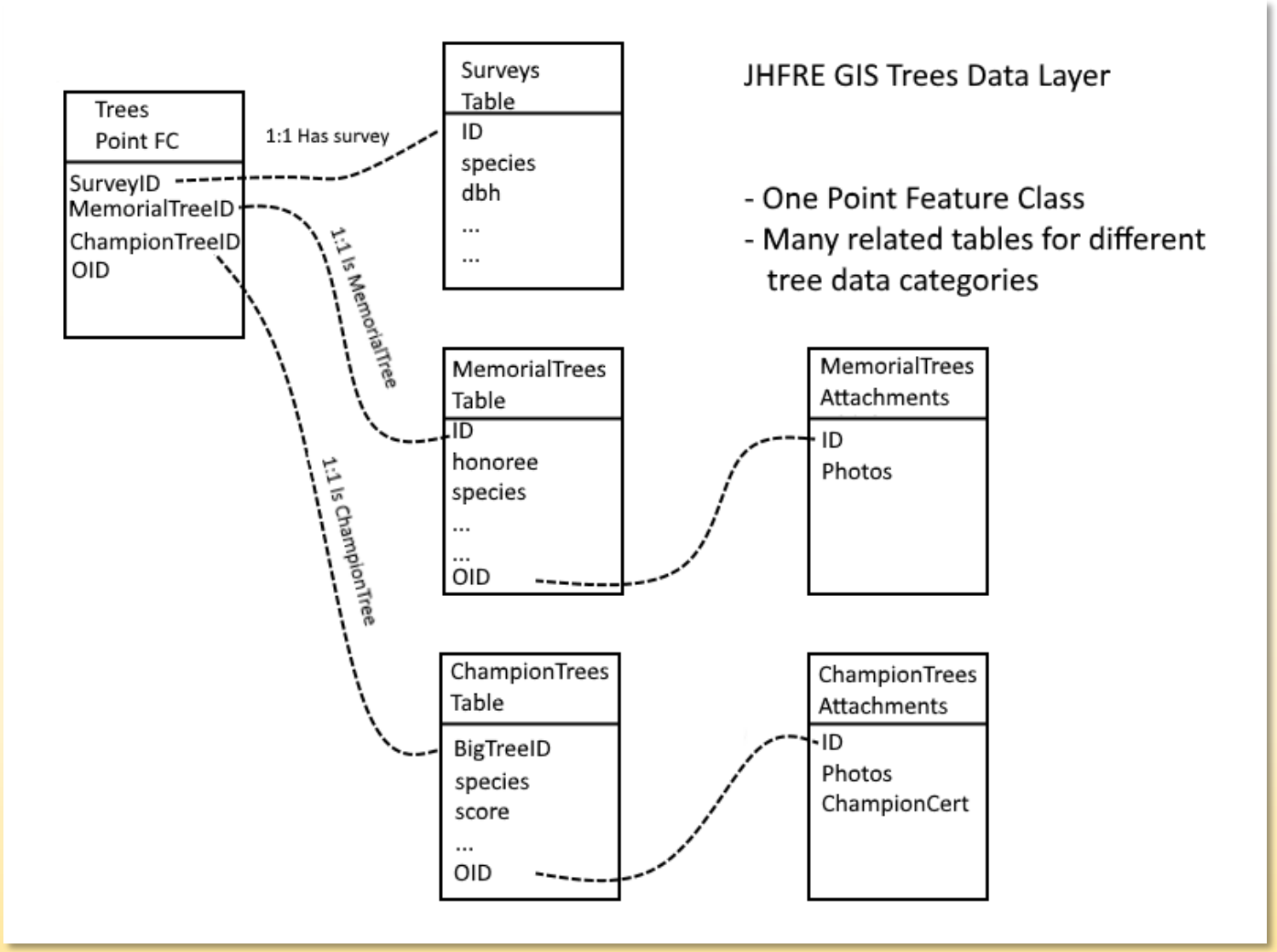
The Root of the Problem

- Not friendly to new GIS users
  - Multiple related tables
- Redundant
- Desktop-based



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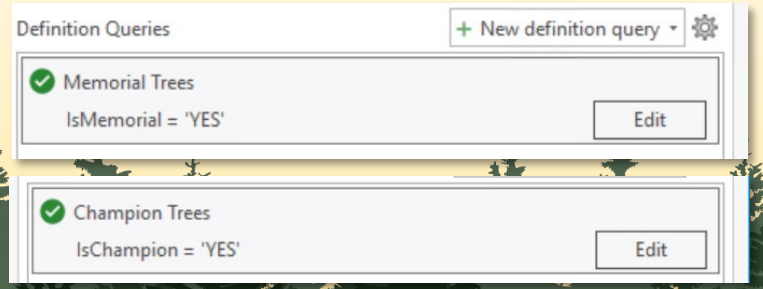
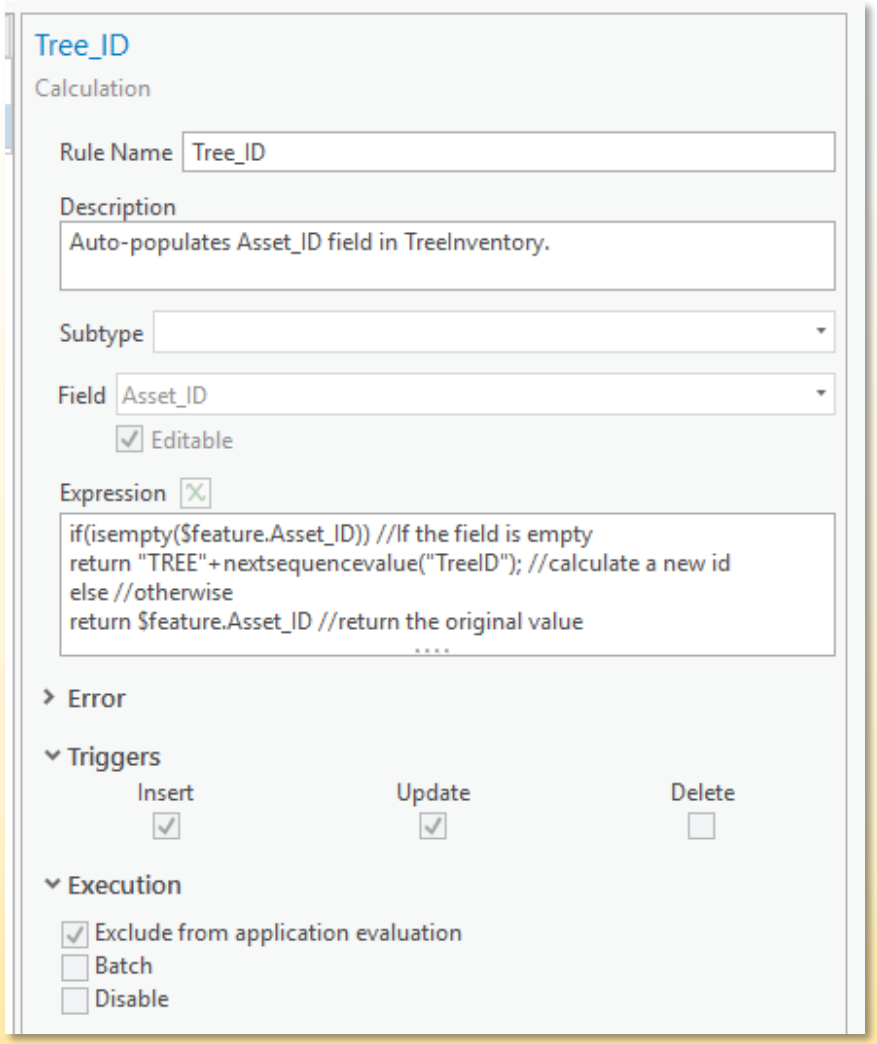
Simple feature class						Geometry		Point
Trees						Contains M Values		No
						Contains Z Values		Yes
Field name	**Data Type**	**Allow nulls**	**Default Value**	**Domain**	**Precision**	**Scale**	**Length**	**Details**
OBJECTID	Object ID							
Asset_ID	Text	Yes					20	Automatically populated when the user adds a tree. Formatted as "TREE" followed by a 6 digit number.
Owner	Test	Yes		TreeOwner			50	
ScientificCommonName	Text	Yes		TreeScientificCommonName			255	Scientific and Common names of the tree.
Condition	Text	Yes		TreeCondition			50	Tree health or condition.
Comments	Text	Yes					255	Details on the location, appearance, and health of the tree.
DBHInches	Float	Yes			3	2		Diameter at breast height (DBH) of the tree in inches.
IsChampion	Text	No	No	Yes_No				Set to Yes if the feature represents a Champion tree.
IsMemorial	Text	No	No	Yes_No				Set to Yes if the feature represents a Memorial tree.
MemPersonRemembered	Text	Yes						Person memorialized.
MemPlaque	Text	Yes		Yes_No				Memorial tree plaque.
MemDonor	Text	Yes						Memorial tree donor.
MemDate	Date	Yes						Date memorialized.
BigTreeID	Text	Yes					12	Champion Tree ID. Formatted as "BT-" followed by a four digit number.
CaptureMethod	Text	Yes		dCaptureMethod			100	
SurveyDate	Date	Yes						Date of last survey.
Inventory_QC	Text	Yes	No	Yes_No				Whether or not the feature has been QC'd.
Inventory_QCDate	Date	Yes						Date of last QC performed on the feature.
Shape	Geometry	Yes						

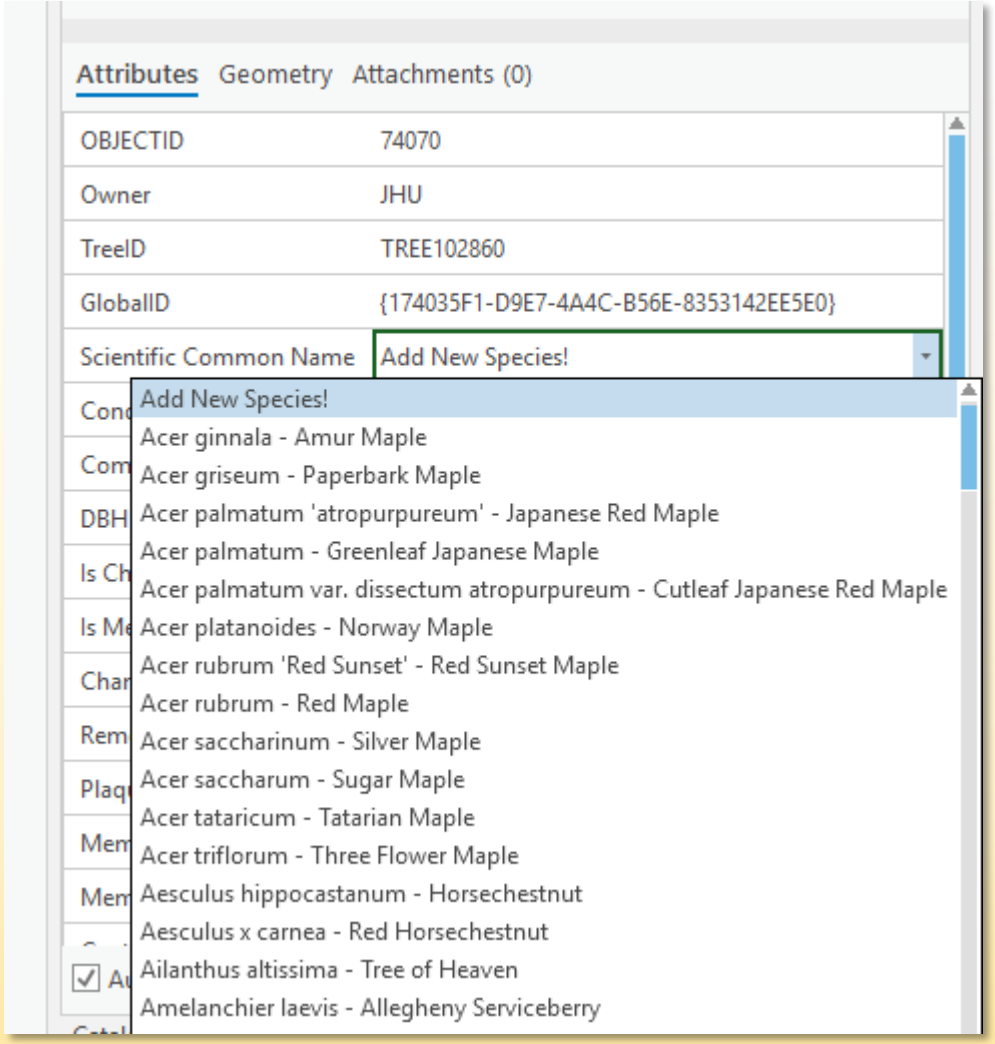
Sprucing It Up

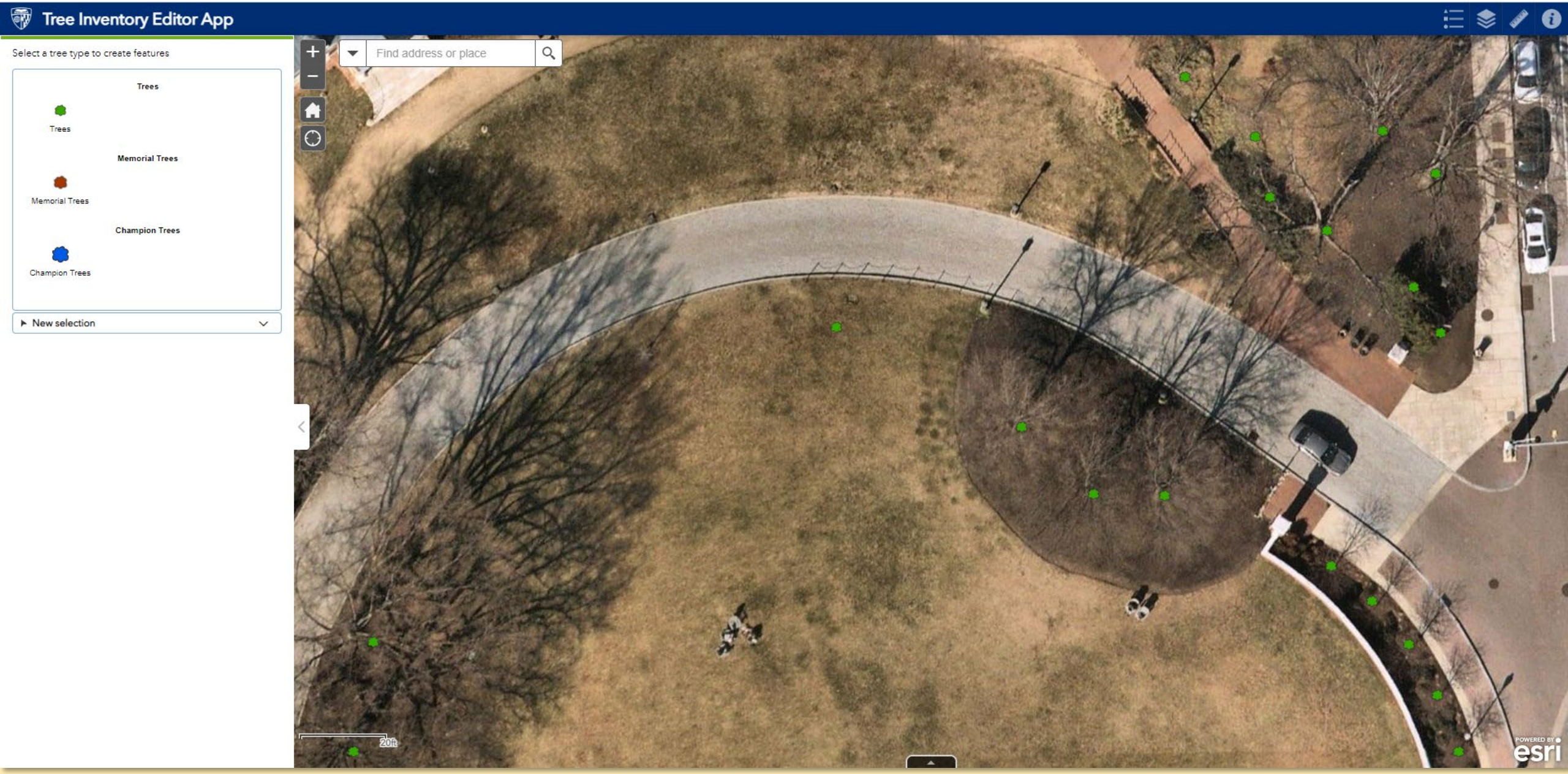
- 3 Definition Queries
  - One for each tree type
- Branch versioning
- Published editor version to Portal
- Groundskeeping Team edits in Web App



At-tree-bute Rules and Domains







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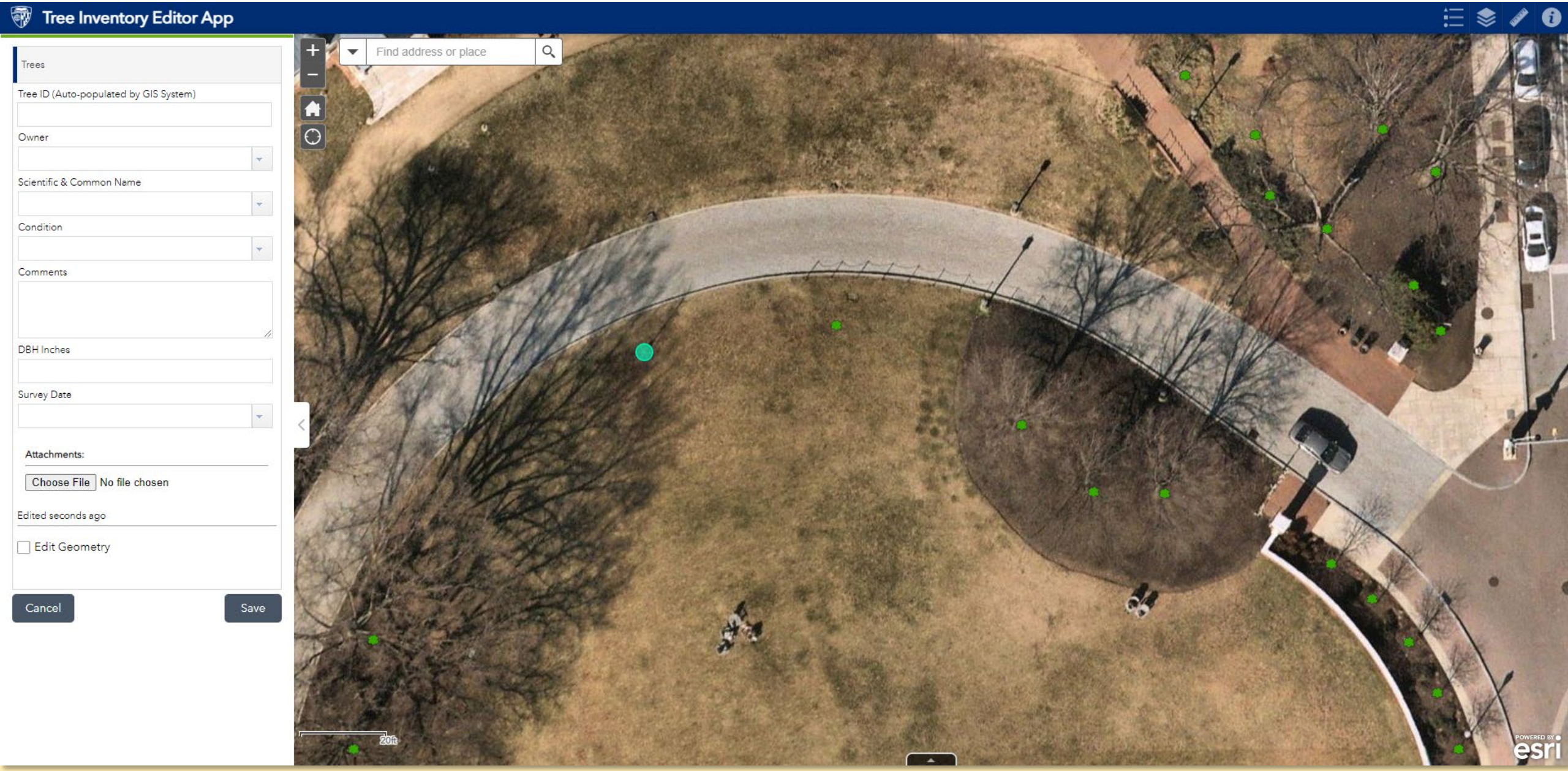

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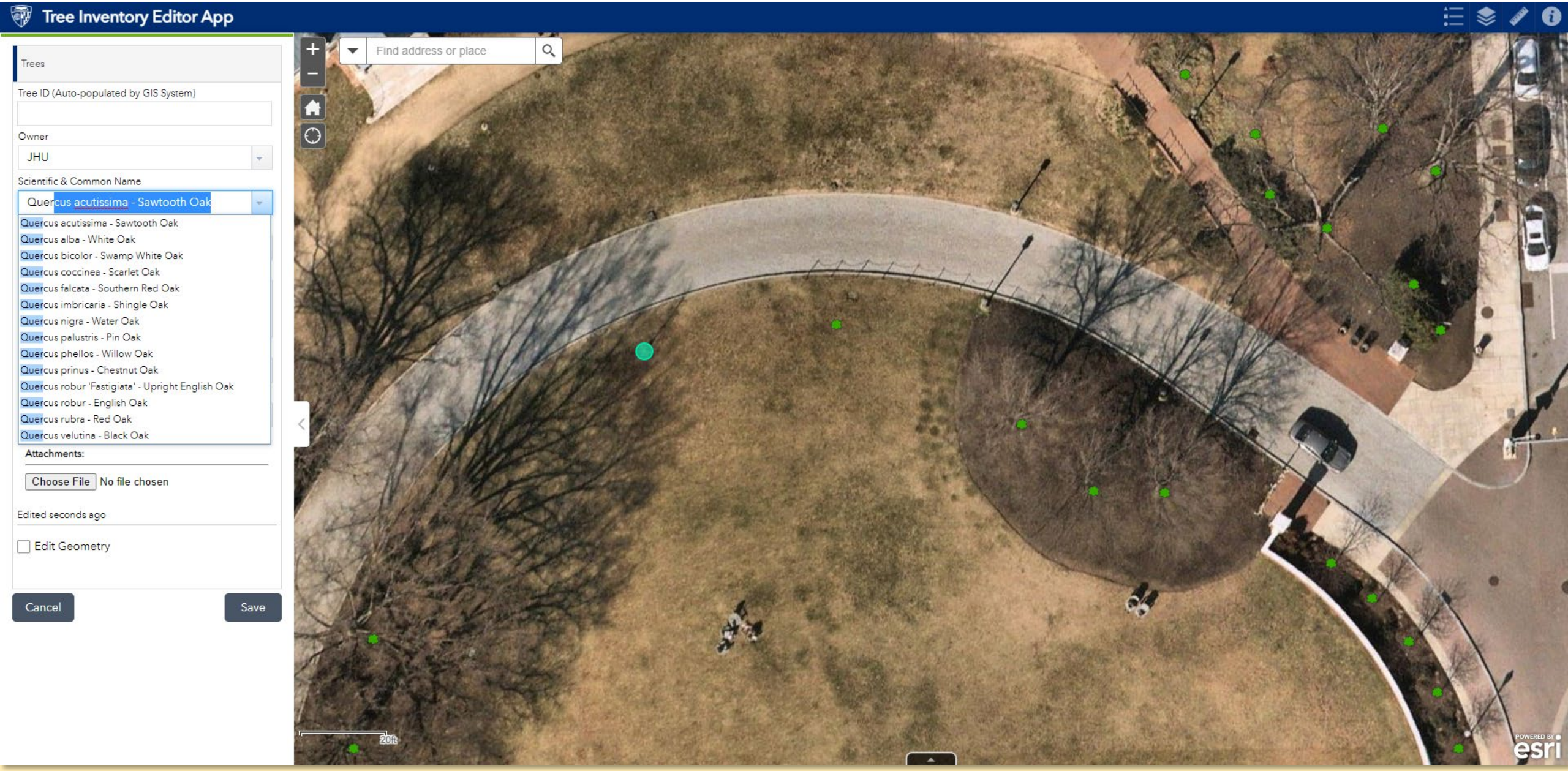
Tree Inventory Editor App
Trees
Tree ID (Auto-populated by GIS System)
Owner
JHU
Scientific & Common Name
Quercus acutissima - Sawtooth Oak
Quercus acutissima - Sawtooth Oak
Quercus alba - White Oak
Quercus bicolor - Swamp White Oak
Quercus coccinea - Scarlet Oak
Quercus falcata - Southern Red Oak
Quercus imbricaria - Shingle Oak
Quercus nigra - Water Oak
Quercus palustris - Pin Oak
Quercus phellos - Willow Oak
Quercus prinus - Chestnut Oak
Quercus robur 'Fastigiata' - Upright English Oak
Quercus robur - English Oak
Quercus rubra - Red Oak
Quercus velutina - Black Oak
Attachments:
Choose File
No file chosen
Edited seconds ago
Edit Geometry
Cancel
Save
Find address or place
20ft
POWERED BY esri

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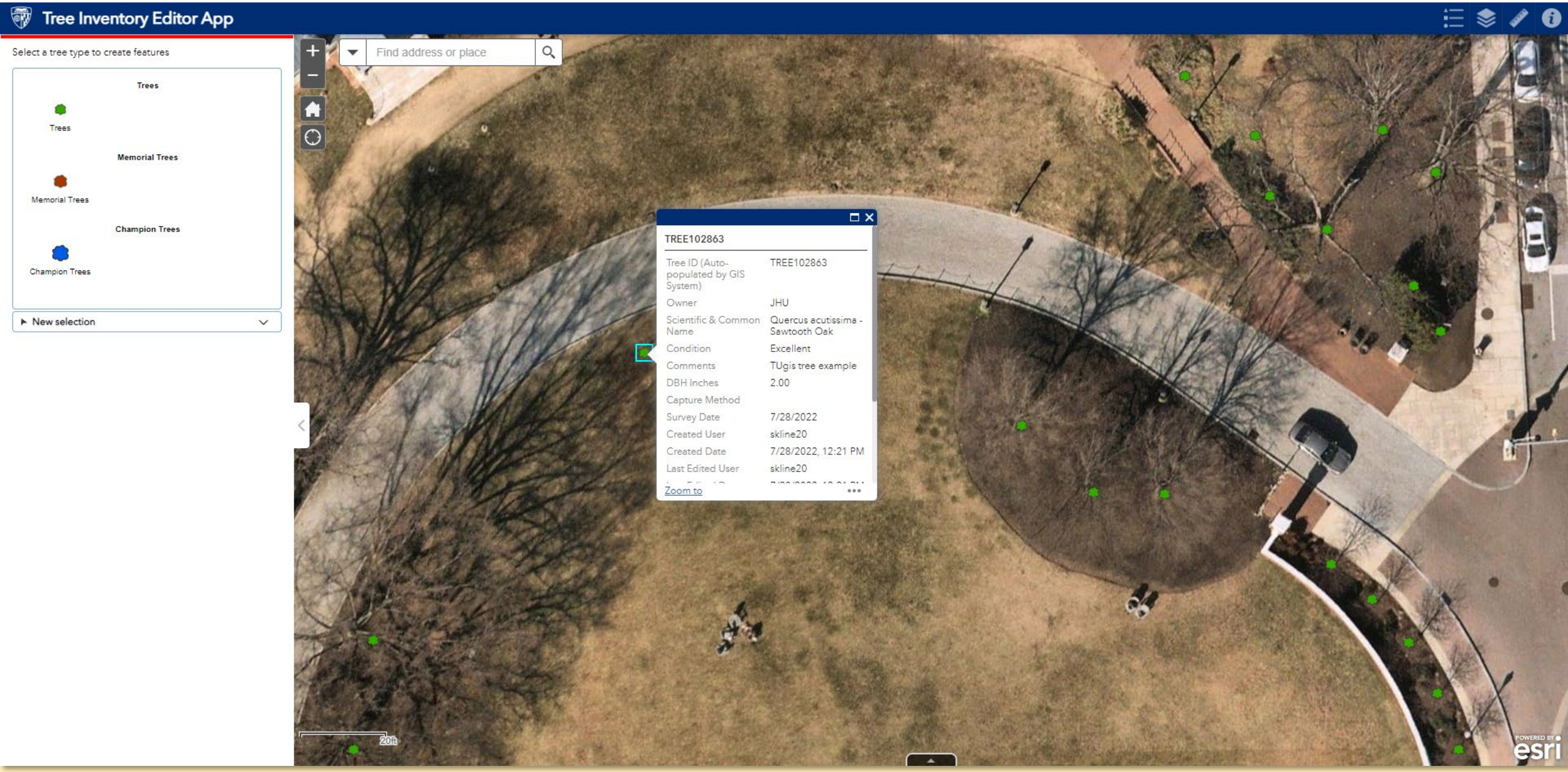

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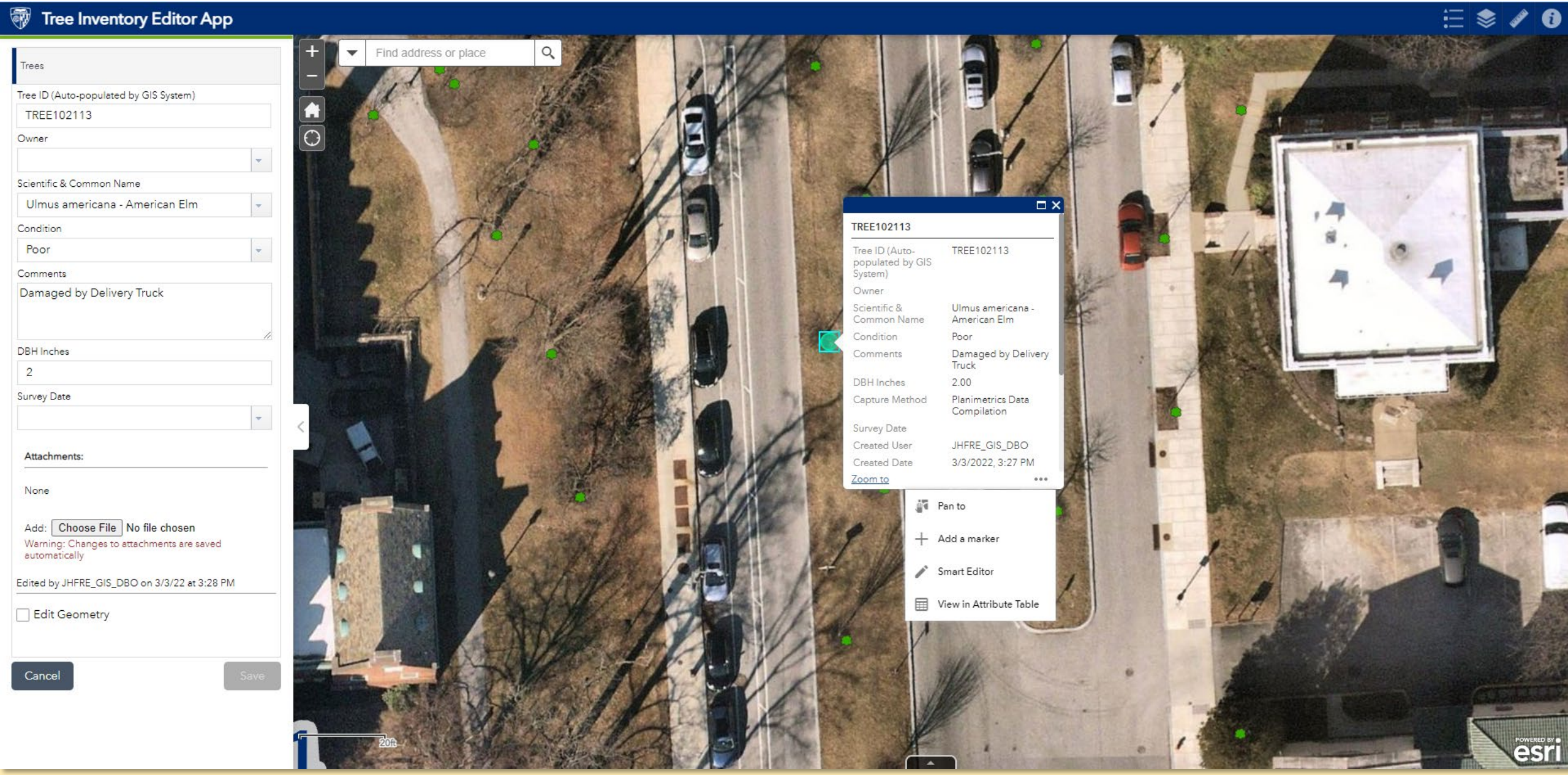
Tree Inventory Editor App
Trees
Tree ID (Auto-populated by GIS System)
TREE102113
Owner
Scientific & Common Name
Ulmus americana - American Elm
Condition
Poor
Comments
Damaged by Delivery Truck
DBH Inches
2
Survey Date
Attachments:
None
Add: Choose File No file chosen
Warning: Changes to attachments are saved automatically
Edited by JHFRE_GIS_DBO on 3/3/22 at 3:28 PM
Edit Geometry
Cancel
Save
Find address or place
TREE102113
Tree ID (Auto-populated by GIS System) TREE102113
Owner
Scientific & Common Name Ulmus americana - American Elm
Condition Poor
Comments Damaged by Delivery Truck
DBH Inches 2.00
Capture Method Planimetrics Data Compilation
Survey Date
Created User JHFRE_GIS_DBO
Created Date 3/3/2022, 3:27 PM
Zoom to
Pan to
Add a marker
Smart Editor
View in Attribute Table
20ft
POWERED BY esri

Pitfalls

Attributes | Geometry | Attachments (0)

OBJECTID	74070
Owner	JHU
TreeID	TREE102860
GlobalID	{174035F1-D9E7-4A4C-B56E-8353142EE5E0}
Scientific Common Name	Add New Species!
Condition	<Null>
Comments	Quercus montana - chesnut oak
DBH Inches	1

Extensive confusion between the chestnut oak (*Quercus montana*) and the swamp chestnut oak (*Quercus michauxii*) has occurred, and some botanists have considered them to be the same species in the past.

The name ***Quercus prinus*** was long used by many botanists and foresters for either the chestnut oak or the swamp chestnut oak, with the former otherwise called *Q. montana* or the latter otherwise called *Q. michauxii*. The application of the name *Q. montana* to the chestnut oak is now accepted, since *Q. prinus* is of uncertain position, unassignable to either species.[7][8][9][10]

Sources: Flora of North America, Wikipedia

Questions?

Thank you!

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