

TREE INVENTORY AND CONDITION ASSESSMENT

For

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PUBLIC ALLIANCE

For Service At

CONSERVATORY METROPOLITAN
DISTRICT

SOUTH CONSERVATORY PKWY, AURORA



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WHY DID SAVATREE PERFORM A TREE INVENTORY AND CONDITION ASSESSMENT?

You are working with Rodney Bashaw at the Denver SavATree office and authorized this project on November 14, 2022. This inventory and condition assessment will inform Metropolitan District Board decisions regarding future tree care.

HOW DID SAVATREE CONDUCT THIS ASSESSMENT?

The Conservatory Metropolitan District tree inventory and condition assessment was entered as an ESRI ArcGIS project. The data collection criteria were set up and customized for the Conservatory Metropolitan District. Data collected for each tree includes tree:

- Number.
- Species, common name.
- Installation date.
- Trunk diameter, in inches.
- Multiple stems.
- Condition – excellent, good, fair, poor, or dead.
- Plant Health Care notes.
- General Tree Care notes.
- Field notes.

Data collection was performed during the dormant season, late February – early March. Tracks, as defined by the Conservatory Metropolitan District Map, DDD, E, G, I, J, and K were collected in late April while the trees were still mostly dormant (Appendix A, Map A).

SAVATREE SUMMARY

There are 1,666 trees inventoried. Austrian pines are the most numerous trees throughout the district tree canopy, comprising 20 percent of the tree population, followed by blue spruce at 13 percent.

Nearly 90 percent of the trees (1468) are in good to excellent condition, followed by fair at 153 trees.

WHAT IS CONTAINED IN SAVATREE'S INVENTORY AND CONDITION ASSESSMENT?

Reporting deliverables are:

- Written report.
- Web mapping application.
- Tabular data.

[ArcGIS web application](#)

A custom ArcGIS Web Application was developed for the Conservatory Metropolitan District and is posted to:

<https://arcg.is/1b9Tzy0>



Open the application and please find the Information Icon in the upper right side. Contained here are directions on how to interactively access data in the application.

A visual depiction of the map (Map B) is included in Appendix A.

WHAT DID SAVATREE FIND?

[Species diversity](#)

Tree genetic diversity is important to the sustainability of a tree population. A diverse population guards against catastrophic losses from pest outbreaks. Dr. Frank Santamour (former research geneticist at the US National Arboretum) is commonly credited with the 10 – 20 – 30 percent rule when it comes to tree populations. The 10 – 20 – 30 is commonly used by plant managers in the United States in working with tree populations.

This rule advises that a given tree population should have no more than:

- 10 percent of any one species
- 20 percent of any one genus, or
- 30 percent of any tree plant family.

The chart below on page 3 (Figure 1) shows the top 10 species comprising the Conservatory Metropolitan District landscape.

Exceptions found to the 10 – 20 – 30 rule include:

- Species > 10 percent
 - Austrian pine – 20 percent
 - Blue spruce – 13 percent
- Genera > 20 percent
 - Pinus (pine) – 23 percent
- Family > 30 percent
 - Pinaceae (pine and spruce family) – 36 percent

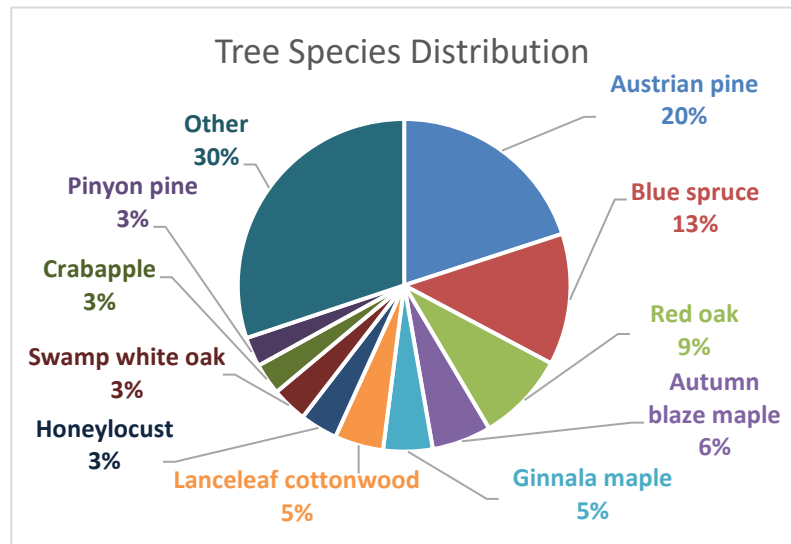


Figure 1: Tree Species Distribution

Tree sizes

Tree trunk diameters were measured at 4.5 feet above ground level known as diameter at breast height or DBH.

A number of trees are multi-stem, consisting of more than one trunk. The largest stem is included at full size and the others at one-half their size. For example, a tree with the following stem measurements 10, 6, and 4 inches would have a calculated DBH of 15 inches.

Tree condition

Tree condition considers health, structural integrity, and form. Trees were rated excellent, good, fair, poor, and dead as is shown in Figure 2.

Excellent – A vigorous tree in near perfect health, with little to no dieback. Tree structure is ideal and without defect. The form (shape) is true to species.

Good – The vigor is normal for the tree species with minor twig dieback. Defects are minor and easily corrected. The canopy may have minor asymmetry which could be due to pruning for clearance.

Fair – The vigor is normal or reduced. There is an accumulation of dead branches. Defects are present in the canopy that may or may not be correctable. There may be an active pest infestation. The canopy has been reduced or is asymmetrical.



Poor – The tree is in decline and likely will not recover. Foliage quality and color is poor. Dead or missing branches comprise over 50 percent of the tree canopy. There may be serious structural deficiencies in the tree.

Dead – Little to no indication of life.

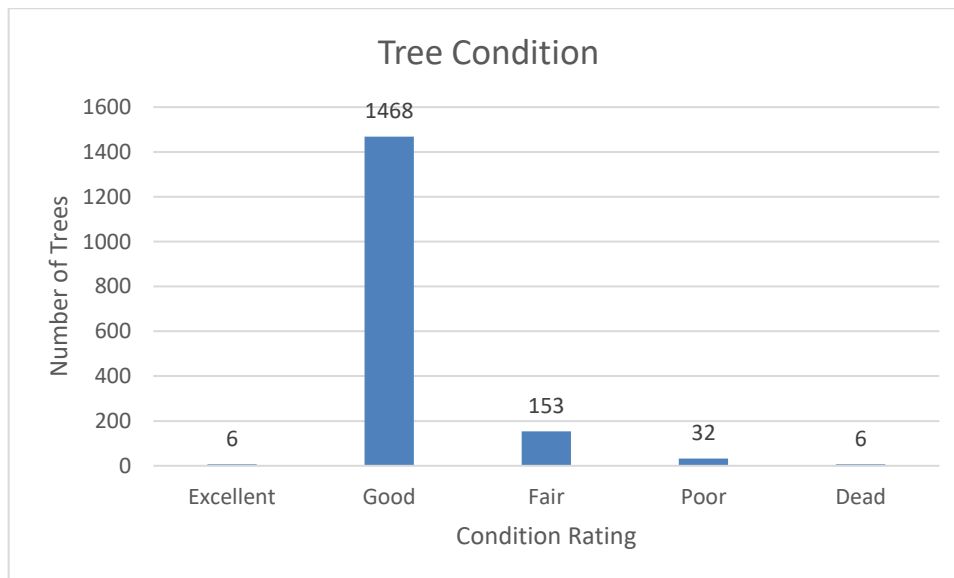


Figure 2: Tree Condition

WHAT DOES SAVATREE RECOMMEND BASED ON OUR FINDINGS?

Tree diversity

Overall, the Conservatory Metropolitan District has a diverse tree population. In future planting, select trees that are not part of the pine family (Pinaceae), as they already represent 35 percent of the tree population.

A list of trees well suited to Colorado's Front-Range may be found [here](#). Note, this list is dated and slated for updating soon.

Plant health care

Most of the trees found within the Conservatory Metropolitan District appear to be in good health with minimal pest outbreaks. It is evident the community has put more resources into the care of their trees in recent years.



Four Pinyon pine trees were found to have needle scale, which if left untreated could compromise the remaining health of the trees. Their tree numbers are 385, 593, 611, and 612.

Installation date

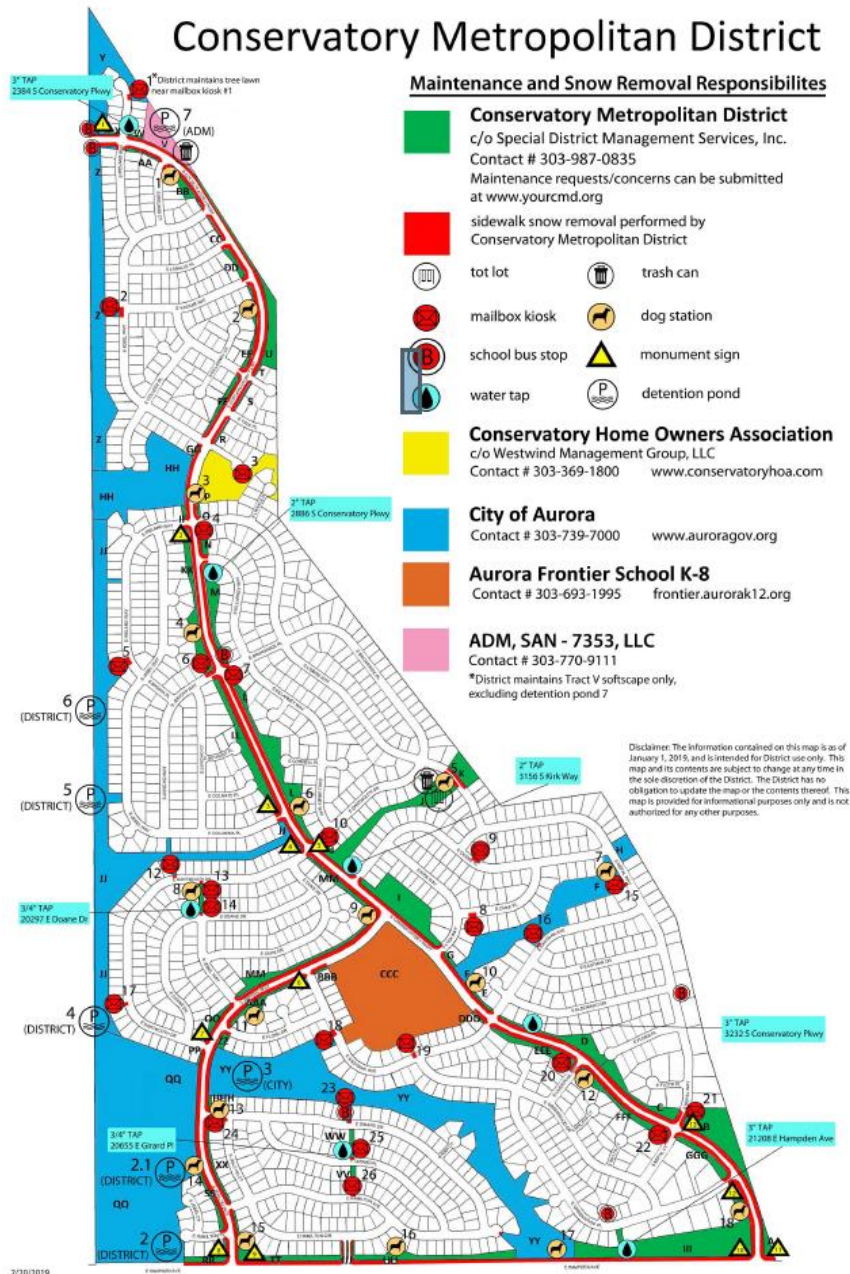
Trees with guy wires were noted as being planted in 2019 – 2021. Trees with guy wires and tree-watering bags were noted as being planted in 2022. Trees with just paper trunk wraps were also noted.

Removal dates were not collected. However, SavATree would be able to update this information for you including any installations dates on a periodic basis. The fee would be based on a time and materials basis.

Tree care

Notations are made for trees with an accumulation of dead branches where pruning could be beneficial for tree health.

APPENDIX A: CONSERVATORY METROPOLITAN DISTRICT MAPS





This map and web application is posted to: <https://arcg.is/1b9Tzy0>