



ProArbol™



Company background

We are a professional tree care company specialized in developing large scale risk assessment studies and Heritage tree preservation projects for government agencies. Our team is composed of professionals in the field of arboriculture with ample experience in urban forestry and a shared passion for the care of trees.

During the last eight years we have focused on the application of non invasive technologies to improve municipal risk assessment programs. Our team has completed the largest non invasive urban tree risk assessment study worldwide for the city of Montevideo, with over 2000 trees evaluated giving us a unique insight into this complex field.

Our goal is to share with other professionals, municipalities and organizations our experiences using these methods as a collective effort to improve the way we care for trees and contribute to keeping our parks and public spaces safe.

Executive background

CEO - B.Sc Andrés Vernengo Caulin

University of Maryland - College Park, MD

University of the Republic - Uruguay

Industry Associations:

- ISA (International Society of Arboriculture) - Committee Member
 - BMP Risk Assessment review committee
- A.U.A (Uruguayan Arboricultural Association) - Founder

Non profit work

- Heritage tree monitoring program - Uruguay
- Conservation program development for the largest park in the Montevideo metropolitan area.
- Latin American Arboricultural Institute - founding member

- Trees for schools - Program coordinator fostering the cooperation between the private sector with public schools.

Evaluating roots of urban trees

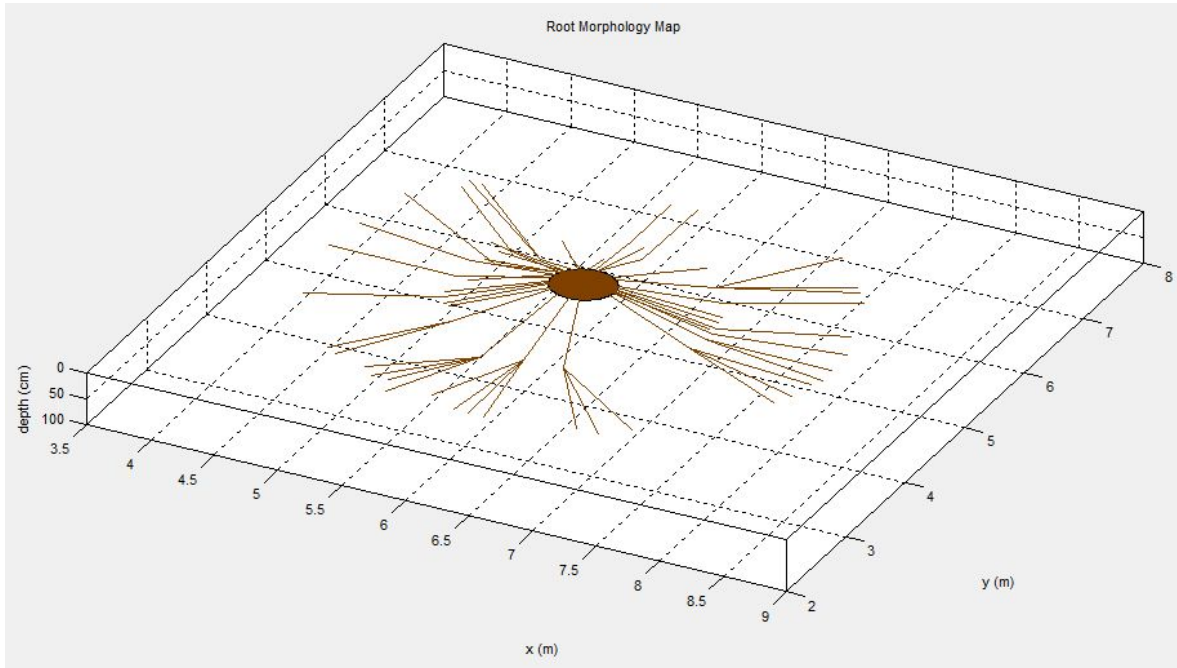
It is not uncommon for healthy looking trees to have an unbalanced root system and fail without giving us any warning sign. Sometimes trees come with root defects from nurseries, other times roots are deflected by compacted soil or rocks, there is also dieback due to diseases, salt damage, over watering, drought etc. It seems evident that arborists need better tools to help them spot these problems in order to make more accurate risk assessments decisions.

For the last eight years our company has pioneered the use of Tree Radar, a non invasive technology that can map and quantify the root system of trees as well as the decay in the trunk. We have been able, after over 4000 trees studied to develop models based on quantitative methods that can help us identify groups of trees with higher failure potential.

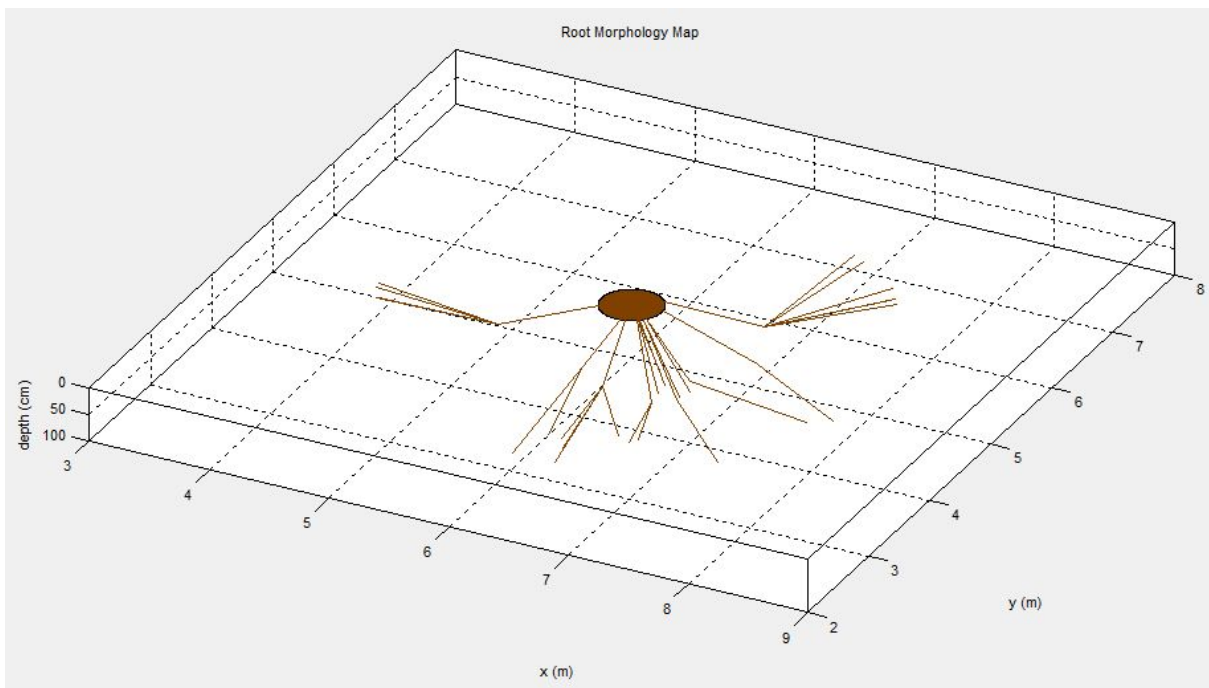
The technology used is completely harmless to the tree or the inspector, allowing for as many evaluations as needed without damaging the tree.



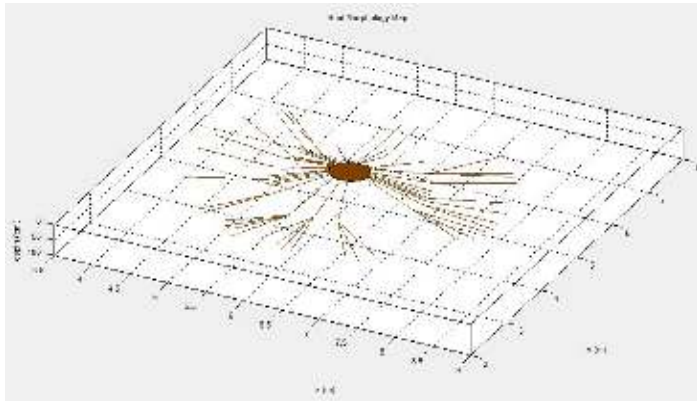
Morphology map produced by TreeWin Software showing a tree with good radial distribution of roots.



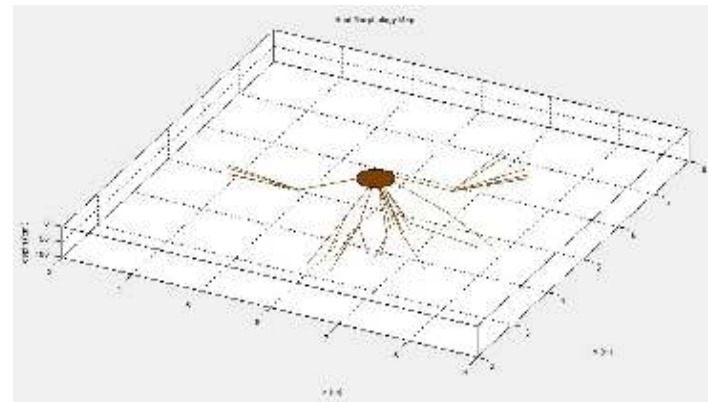
Example of a tree with insufficient root distribution.



Comparison of root systems - it is evident that the tree on the right has a much weaker root system than the one on the left.

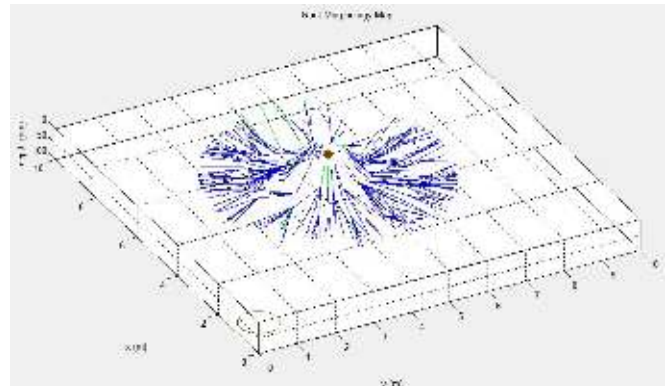
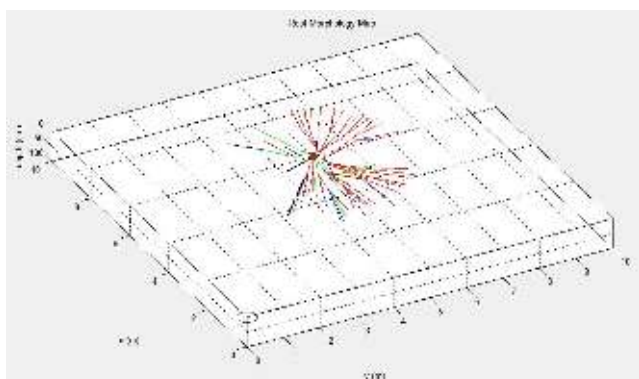
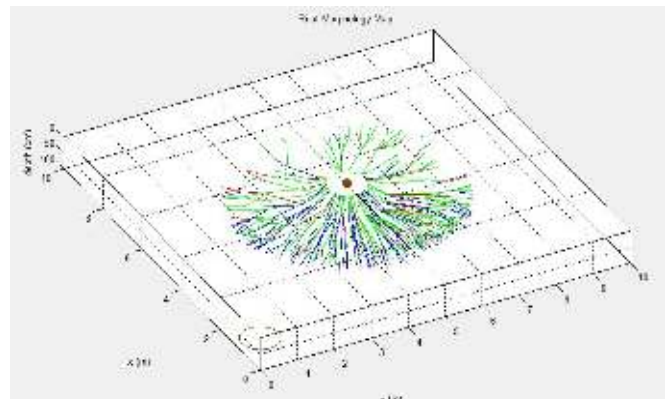
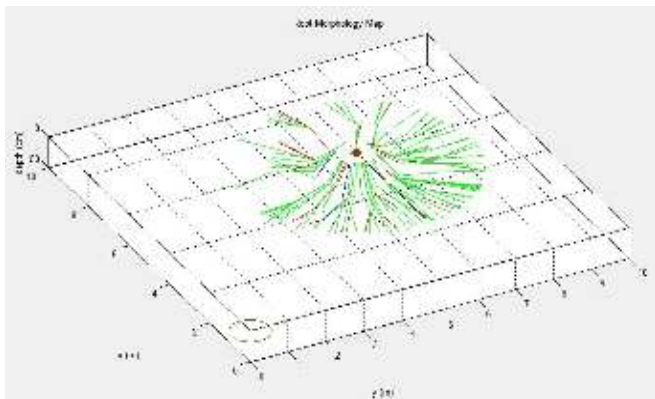


Root count: 8 roots / meter



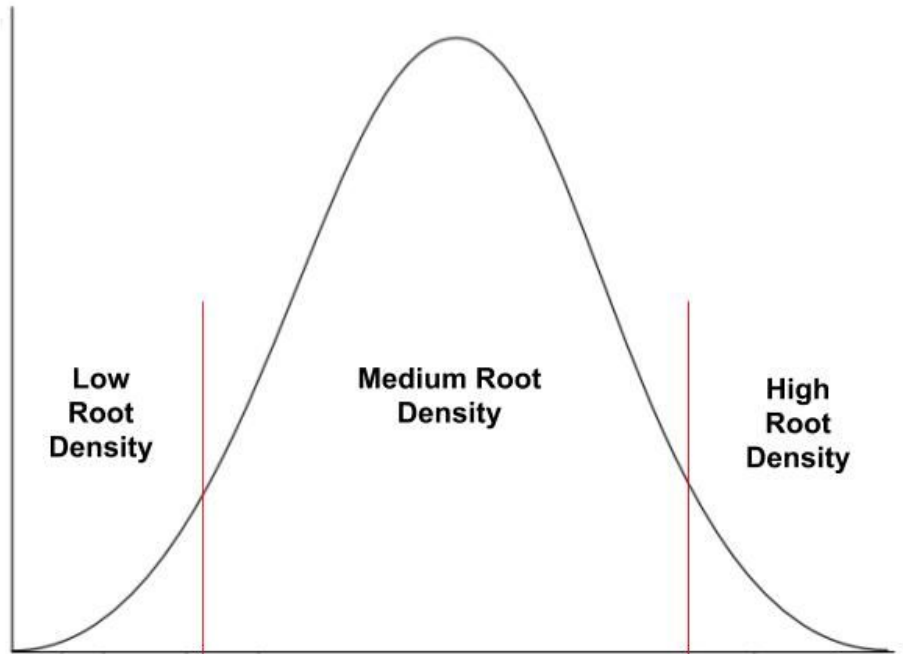
Root count: 2 roots / meter

Notice that for each tree scanned a root count is generated, this allowed us to develop average values and root density thresholds for the most common tree species of Montevideo that became a reference for future evaluations.



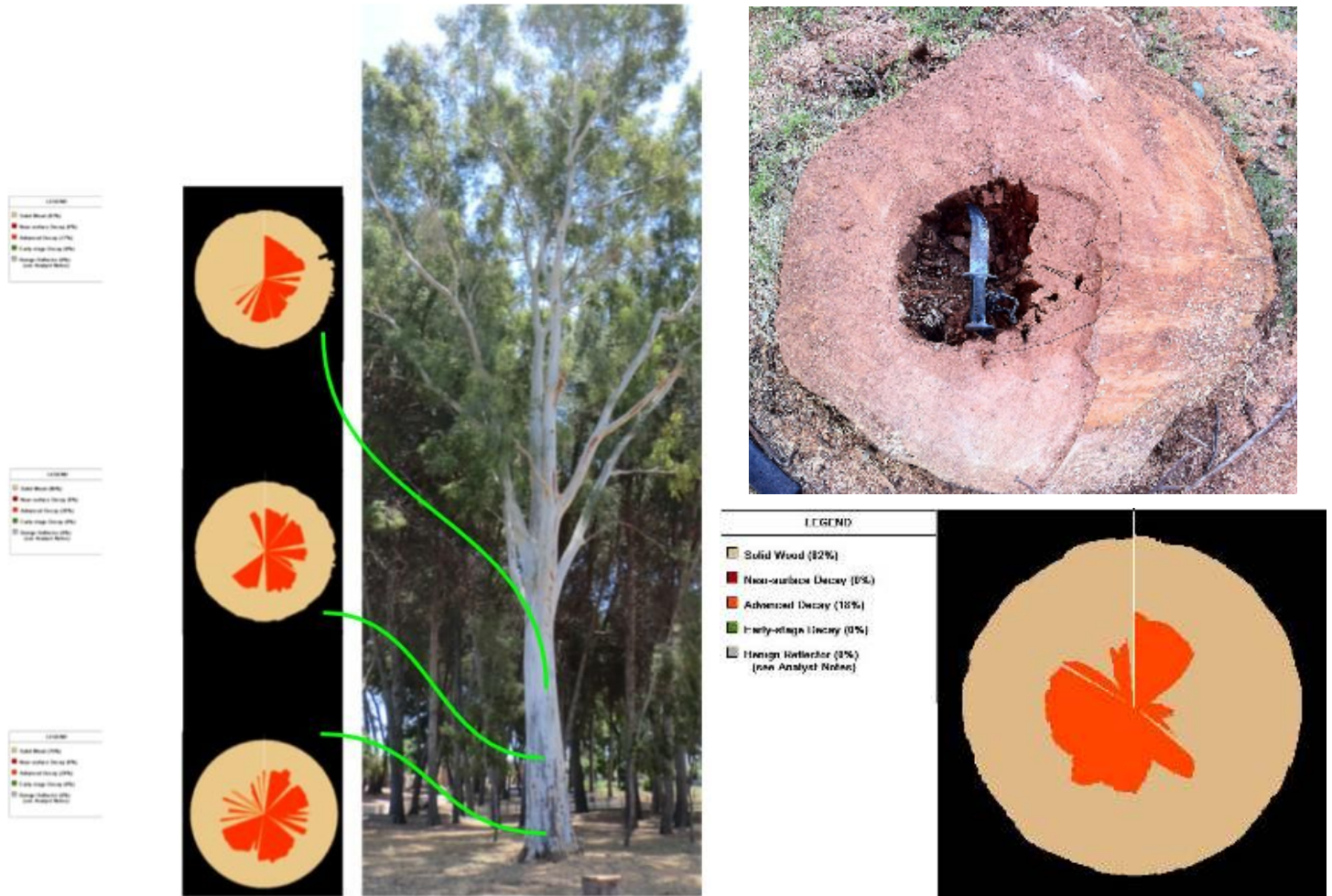
After all scans have been completed, root density data is processed and trees are divided in three categories: Low, Medium and High root density.

Trees that were identified as having low root density values or uneven distribution of roots were marked for further inspection or extraction, depending on the severity of each case.



Using the same equipment it is also possible to study the condition of the trunk at multiple elevations.

We can see in orange the amount and morphology of the compromised wood in the section studied.



0 m elevation

0,5 m elevation

1,0 m elevation



Other Applications

Preserving our most valuable trees

Heritage trees are the gems of urban forests, they not only provide the highest ecological services to our communities by sequestering the most amount of carbon but also influence the behaviour of the trees that surround them. Regular monitoring and maintenance of these trees is key to their preservation.



Performing annual root and trunk evaluations help spot trees that might be under stress allowing for mitigation treatments to be applied even before visual symptoms of decline become evident.

We are proud supporters of a number of Heritage Tree Programs in Latin America, including projects in Uruguay, Argentina, Brazil and more recently Peru.