

# A Birds Eye View: The Benefits of Trees for a Mid-Sized University

Sierra Felty, Elise Simmons, Eloni Hull, Dr. Christine Small  
Department of Biology, Radford University, Virginia

## Value of Campus Trees

- Trees provide essential ecosystem and societal benefits such as habitats for wildlife, CO<sub>2</sub> storage, energy savings, and improved air quality.
- Goal 1: Calculate economic and environmental benefits to prioritize tree species during construction planning.
- Goal 2: Identify and nominate national and state champion trees, the biggest of their species.
- Raise awareness and highlight the importance of campus trees to the campus community.



Figure 1: Magnolia located just outside the Alumni Garden with a circumference of 6.6 feet.

## Tree Measures and Benefits

- Tree height, trunk circumference, canopy width and proximity to buildings were measured to determine economic benefits of each tree in our study area.
- The i-Tree Benefit Calculator was used to determine lifetime CO<sub>2</sub> storage, reduced stormwater runoff, removal, and energy savings for each tree.
- Using the National and Virginia Big Tree program, we compared each tree to national or state top three champions.

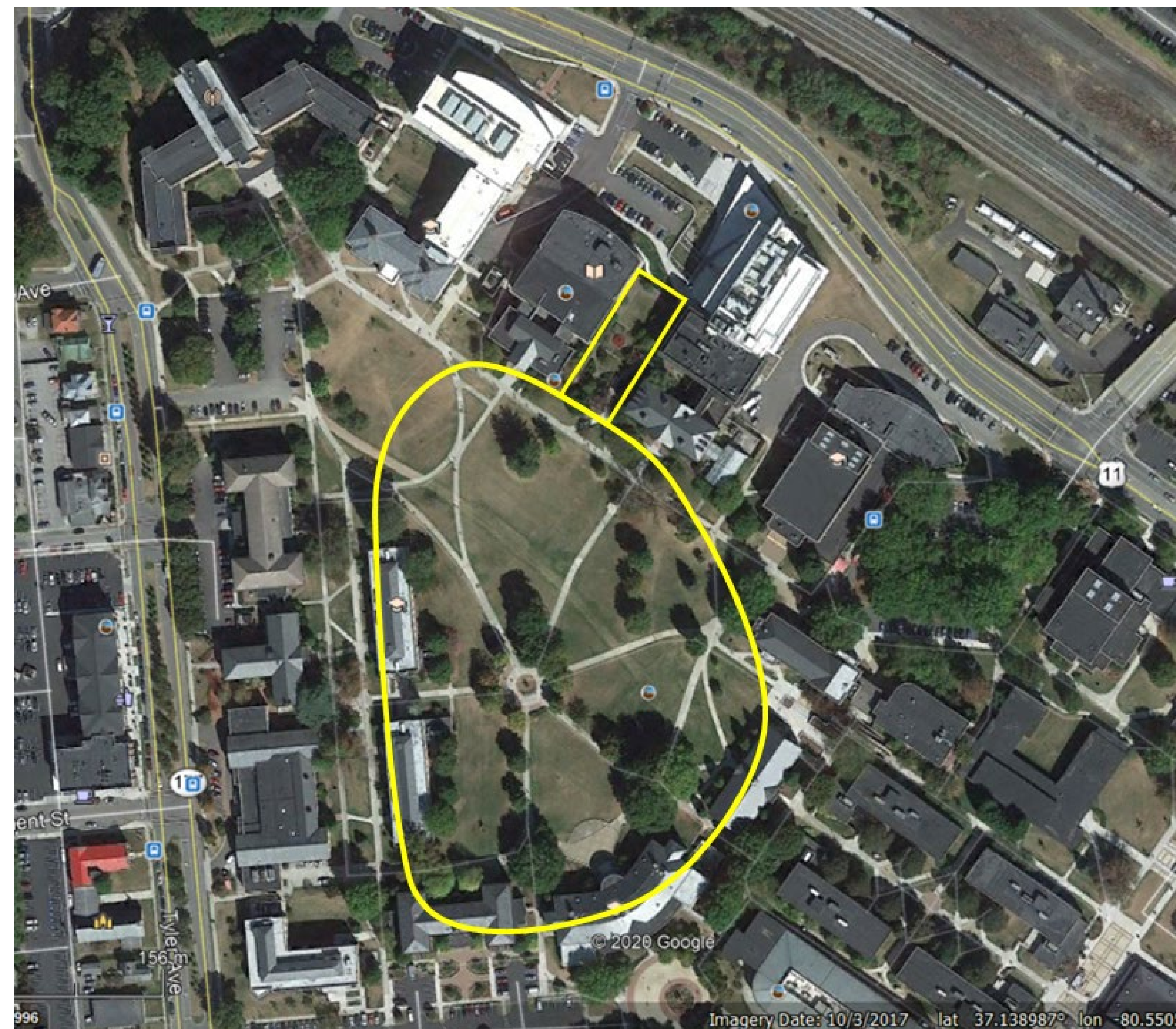


Figure 2: Aerial view of the Alumni Garden and Central Campus at Radford University, in southwest Virginia, where data was collected.

## Tree Analysis

- Over 60 trees were measured this semester, 6 of which are potential state champions (Table 1).
- When comparing data collected from both areas of interest, central campus had much larger trees, nearly double the size of those in the Alumni Garden.
- Osage orange, located within central campus, was the largest tree measured this semester with a circumference of 18.25 ft and a height of 55 ft.



Figure 3: The only Osage Orange on the Radford University campus. During its lifetime, it has stored 138,925 lbs of CO<sub>2</sub>, an ecosystem service valued at \$3,231.

## Future Goals

- Complete trunk circumference measurements of trees across campus, complete benefit calculations, and identify and identify potential state champions from the Alumni Garden and central campus.
- Assist in certification of Radford University as a designated Tree Campus USA, in cooperation with President Hemphill and the Office of Sustainability. This will be an exciting step towards national recognition and will raise awareness and support of our campus trees.

Table 1: Comparison of average tree circumference (distance around each tree trunk) and size of the largest trees in the Alumni Garden and Central Campus at Radford University.

	Number of Trees	Average Tree Size (ft)	Largest Tree (ft)	Largest Tree Species
Alumni Garden	12	3.4	6.6	Saucer Magnolia
Central Campus	48	6.0	18.3	Osage Orange

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## References

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