

AccuPAR Used in Study of Tree Shade in Ocala, Gainesville

AccuPAR has been a useful instrument for determining information about canopy architecture and density for quite some time. Though its use has been primarily in test plots and forest or rangeland, it has recently proved useful in another application: determining how shade trees affect your need for an air conditioner. An article from the July 8, 2000 edition of Florida's Gainesville Sun explained how research there determined that thicker tree canopies in Gainesville led to lower consumer power usage per capita than in Ocala. The study was performed by Dr. Ryan Jensen, now an associate professor at Indiana State University, for his doctoral dissertation.

Ocala and Gainesville were chosen because of their similar geographical location and because they are the two biggest cities in north central Florida. Using the AccuPAR and remote sensing imagery, the leaf area index of the canopies for both cities were measured. The results showed an overall LAI for Gainesville of 4.61, while Ocala's was almost half of that-2.13. This was surprising to some, since Ocala has been designated a "Tree City USA" for over 10 years in a row, and has a 28- page tree ordinance, with hundreds of detailed provisions.

Jensen attributes Gainesville's higher LAI to stricter zoning rules with regard to tree removal. According to the article, residential homeowners in Gainesville need a permit before they can remove a tree with a trunk more than 30 inches in diameter. However, in Ocala, singlefamily homes on less than three acres of land don't need a permit to remove trees. The tree experts in Gainesville, however, were not surprised:

"The results come as no surprise to city of Gainesville Arborist Meg Niederhofer, who enforces tree regulations. One 50-year-old live

oak, she said, citing a factoid from the American Forestry Association, has the cooling capacity of five heavy-duty air conditioners running full time. And Gainesville residents have fought long and hard to maintain laws that protect those older, bigger trees. City surveys show the amount of land in Gainesville covered by trees jumped from 47 percent in 1984 to 60 percent in 1994, Niederhofer said. 'We're all nuts about trees here,' she said. City commissioners 'didn't put on a city arborist out of the goodness of their hearts,' she said. 'They got tired of citizens complaining so often about bulldozed trees.'

According to Ocala city officials, other factors might be at play as well. In the article they state that "Gainesville obviously has far more apartments because of the large student population. Those dwellings tend to need less power to cool down than single-family homes." Regardless of the various factors that contribute to the lower energy costs, the fact remains that more trees generally mean more shade, and cooler environments. And, though Ocala planning Director Bill Hunt was disturbed by the findings, his position on the matter was encouraging. "Anything that can inspire people to plant more trees - that's a very good thing."

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