

# Estimating aboveground carbon stocks from remotely sensed data and the TEAM network inventory data

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## ABSTRACT

This study calculated and compared aboveground carbon stocks of trees in three sample sites in La Selva and Braulio Carrillo National Park in Costa Rica with diameter at breast height of 10 cm and greater using the TEAM Network forest inventory data. High spatial resolution aerial photography and HyMap hyperspectral imagery were integrated with the field data to compare discrepancies between a comprehensive forest inventory and tree crowns that are visible from airborne platforms. Total aboveground biomass using high-resolution aerial photography with ground validation data grossly underestimated carbon stocks. The results from this study demonstrate the substantial spatial variability of forests even within local scales. It further illustrates the importance of old-growth trees since they account for a large proportion of aboveground biomass. Finally, it demonstrates certain limitations of using airborne photography and imagery in terms of what is visible to those sensors.

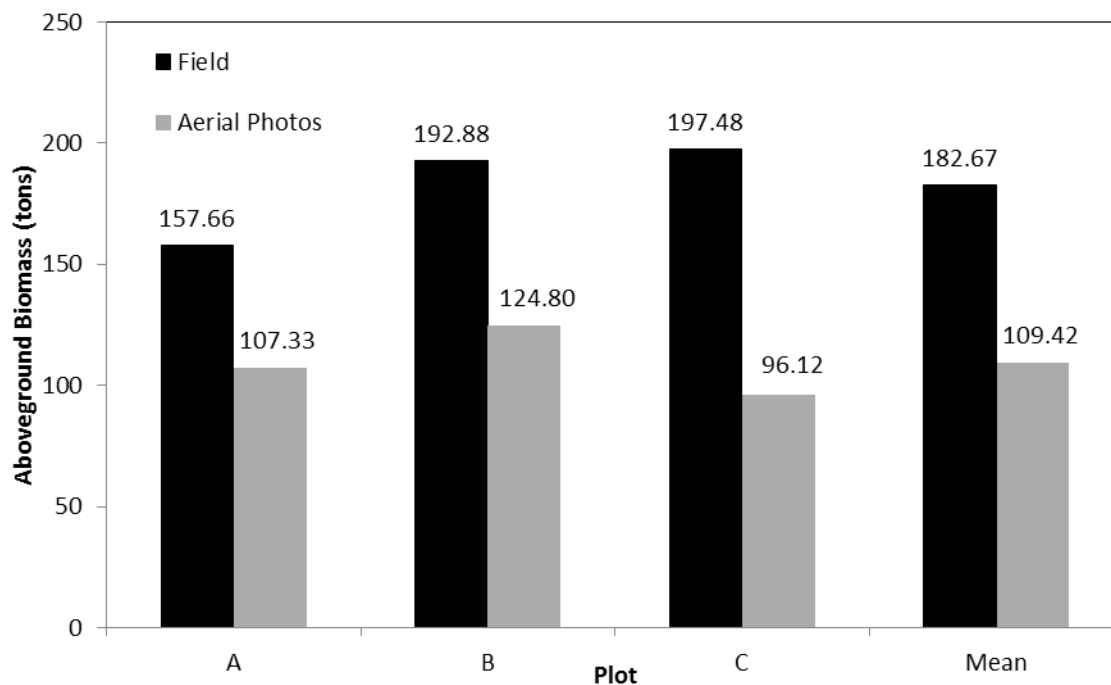


Figure 1. Graph showing the comparison between total aboveground biomass estimates per hectare for plots A, B, and C, and the mean of all three plots. (Data obtained from Molina & Hurtado, 2013).