

Warayu Boonchai, Lieutenant 2009: Influence of Crown Cover on Precision Values of Global Positioning System. Master of Science (Forest Resource Management), Major Field: Forest Resource Management, Department of Forest Management. Thesis Advisor: Mr. Weeraphart Khunrattanasiri, Dr.rer.nat. 47 pages.

The Influence study of crown cover on precision values of Global Positioning System (GPS) at Forestry Student Field Station in Lampang aimed to study firstly the relationship of crown cover density on the precision value derived from dual frequency GPS receiver and secondly to investigate the factors which act on the GPS satellite signal in different crown cover. Leaf Area Index (LAI) was chosen to describe the tree coverage in the forest area. Two horizontal control points of Royal Thai Survey Department were used to translate the high precise position value of seven control points in the study area. The statistical acceptance criteria for baseline computation was set as follow; Position Dilution Of Precision (PDOP) less than 6, Ratio value more than 1.5, Reference variance between 1 to 10 and Root Mean Square (RMS) less than 0.03 meters.

The results of the study showed that one station with 0.867 LAI and a coverless station researched the statistical acceptance criteria to compute baseline both static and fast static. The rest five stations did not pass the criteria. It can strongly concluded that LAI higher than 0.87 causes the position precision when GPS is used in the forest.

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Thesis Advisor's signature

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