7-1998

Project Report No. 60, Observed Per-Acre Volume Growth Trends, 28 Individual Observations, Unthinned Loblolly Pine Plantations East Texas

Andrew M. Burrow
Stephen F. Austin State University

OBSERVED
PER-ACRE VOLUME GROWTH TRENDS
28 INDIVIDUAL OBSERVATIONS

UNTHINNED LOBLOLLY PINE PLANTATIONS
EAST TEXAS

Andrew M. Burrow
Student Assistant

located at Arthur Temple College of Forestry
SFASU, Nacogdoches, TX, 75962

REPORT 60

From
the

East Texas Pine Plantation Research Project
Arthur Temple College of Forestry
SFASU
Nacogdoches, TX 75962

July ... 1998

Three Research Questions

What is the age of maximum mean annual increment - as measured by cubic feet total stem wood and bark per acre?

What is the influence of site index on the timing of maximum mean annual increment?

How are these observations useful to the forest manager?

The Data/The Analysis/The Plottings

Individual plot data from the East Texas Pine Plantation Research Project were available for analysis in this study. Each plot consists of two subplots. Each subplot is considered an observation. The analysis was limited to individual observations ages 24 years and older. All observations are unthinned.

For each observation, cubic feet total stem wood and bark per acre was calculated.

Based on these values, MAI (mean annual increment) was calculated.

The values (plus observed trees per acre) are depicted in graphs on the next 28 pages.

Conclusions

From examination of the 28 graphs, it appears that 10 have reached maximum MAI, 6 have not reached maximum MAI, and 12 remain elusive at this time.

It appears that while some observations may have not reached maximum MAI, maximum MAI may occur between 21-24 years.

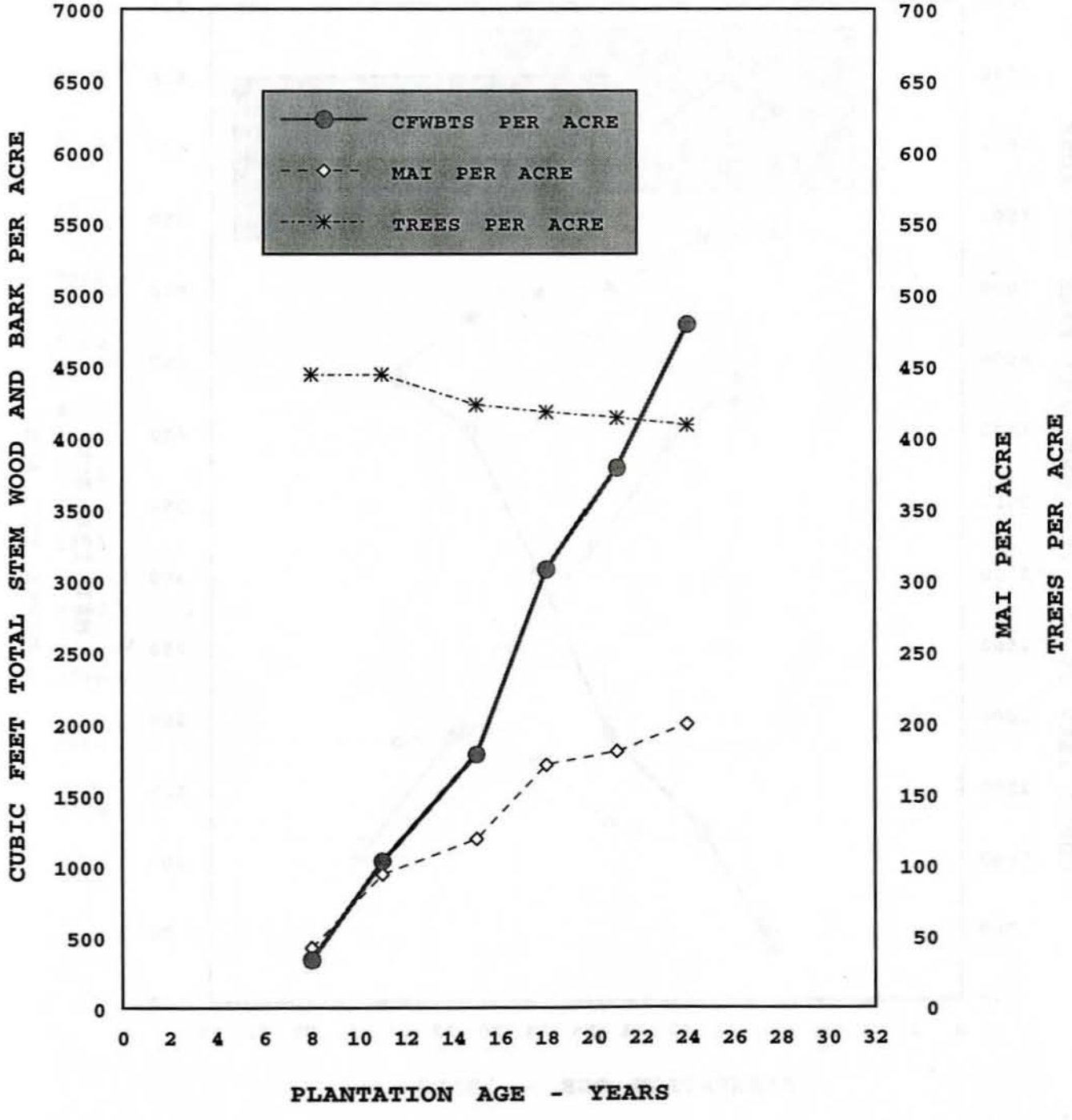
Site index appears to have no influence on the timing of maximum MAI.

And these observations are useful to the forest manager...The above range of maximum MAI values could be used as a possible harvest schedule, if short rotations with no thinnings are the management objective.

OBSERVED CUBIC FEET TOTAL STEM
WOOD AND BARK PER ACRE
LOBLOLLY PINE ... ETPPRP

- PLOT 006/SUBPLOT 1 -

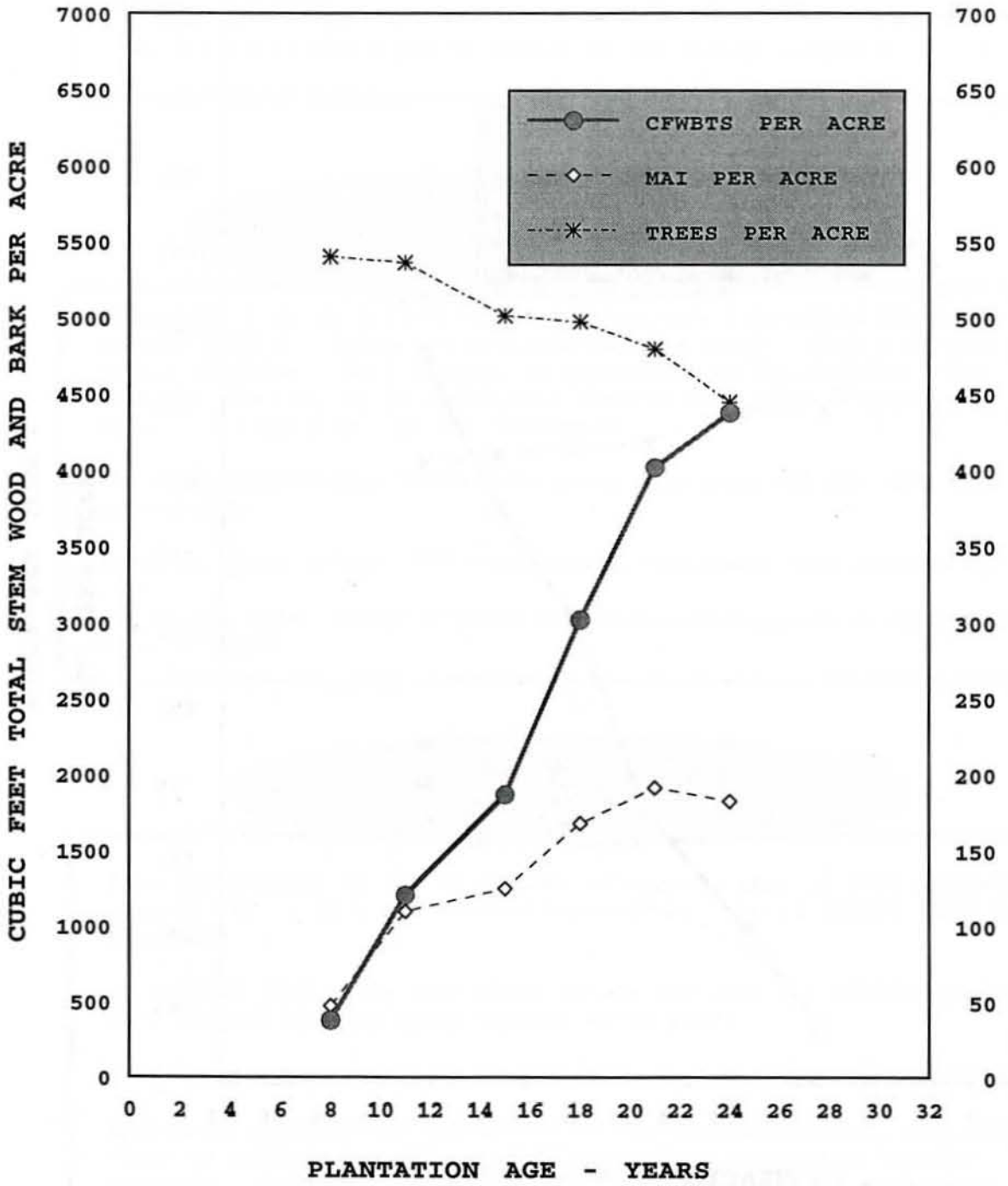
AGE = 24 YEARS, SITE INDEX = 72 FEET



OBSERVED CUBIC FEET TOTAL STEM
WOOD AND BARK PER ACRE
LOBLOLLY PINE ... ETPPRP

- PLOT 006/SUBPLOT 2 -

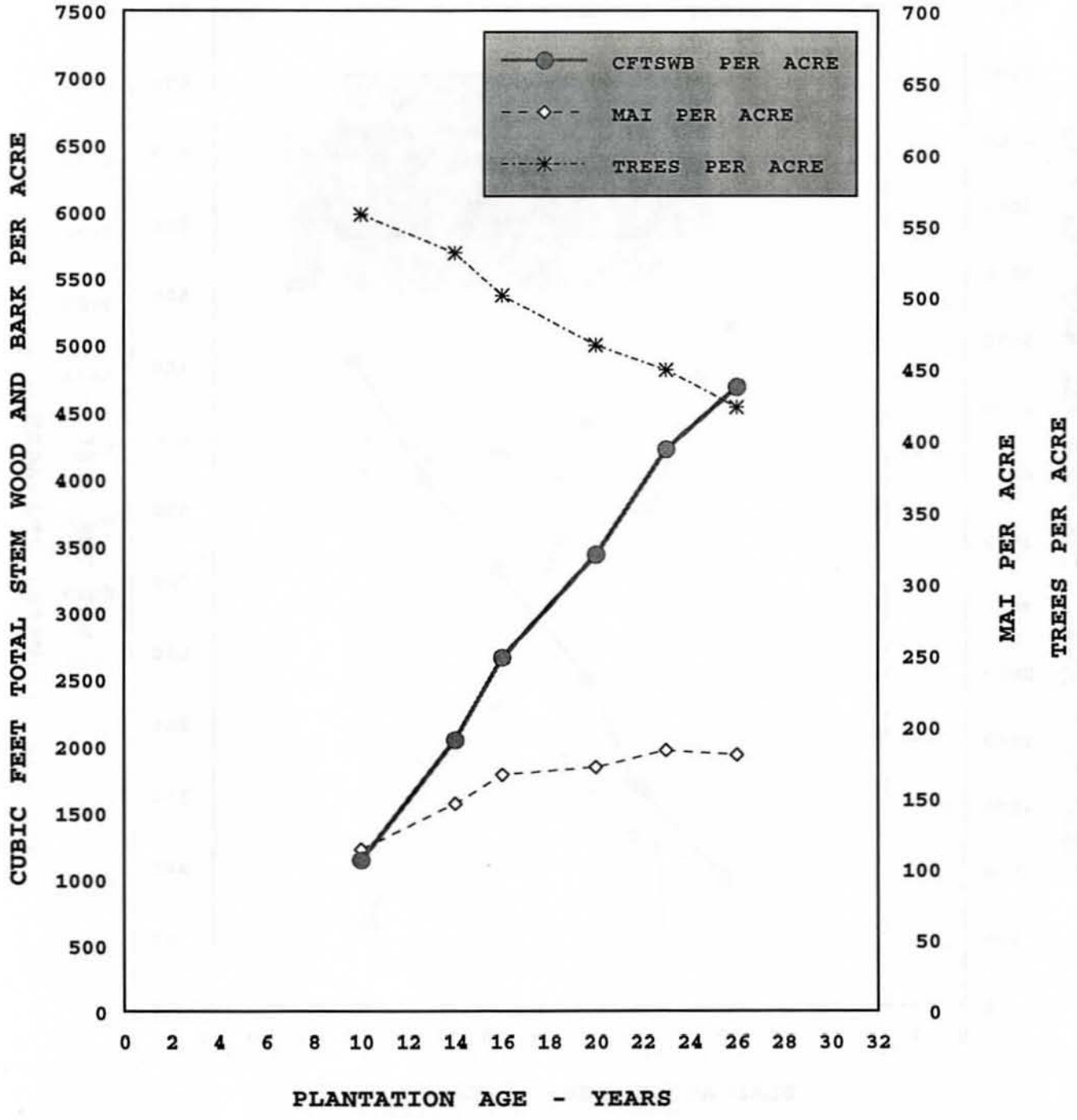
AGE = 24 YEARS, SITE INDEX = 67 FEET



OBSERVED CUBIC FEET TOTAL STEM
WOOD AND BARK PER ACRE
LOBLOLLY PINE ... ETPPRP

- PLOT 009/SUBPLOT 1 -

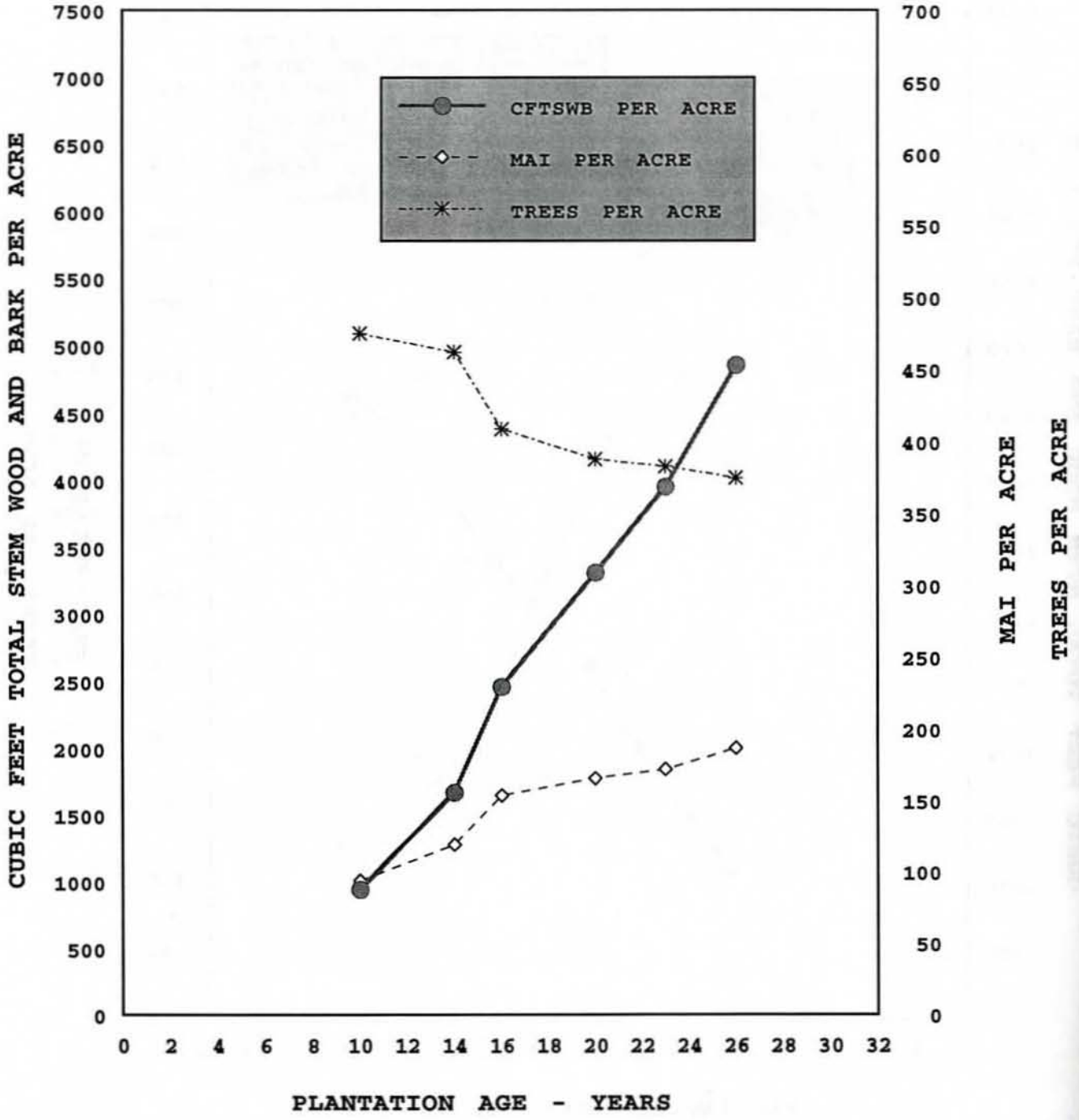
AGE = 26 YEARS, SITE INDEX = 76 FEET



OBSERVED CUBIC FEET TOTAL STEM
WOOD AND BARK PER ACRE
LOBLOLLY PINE ... ETPPRP

- PLOT 009/SUBPLOT 2 -

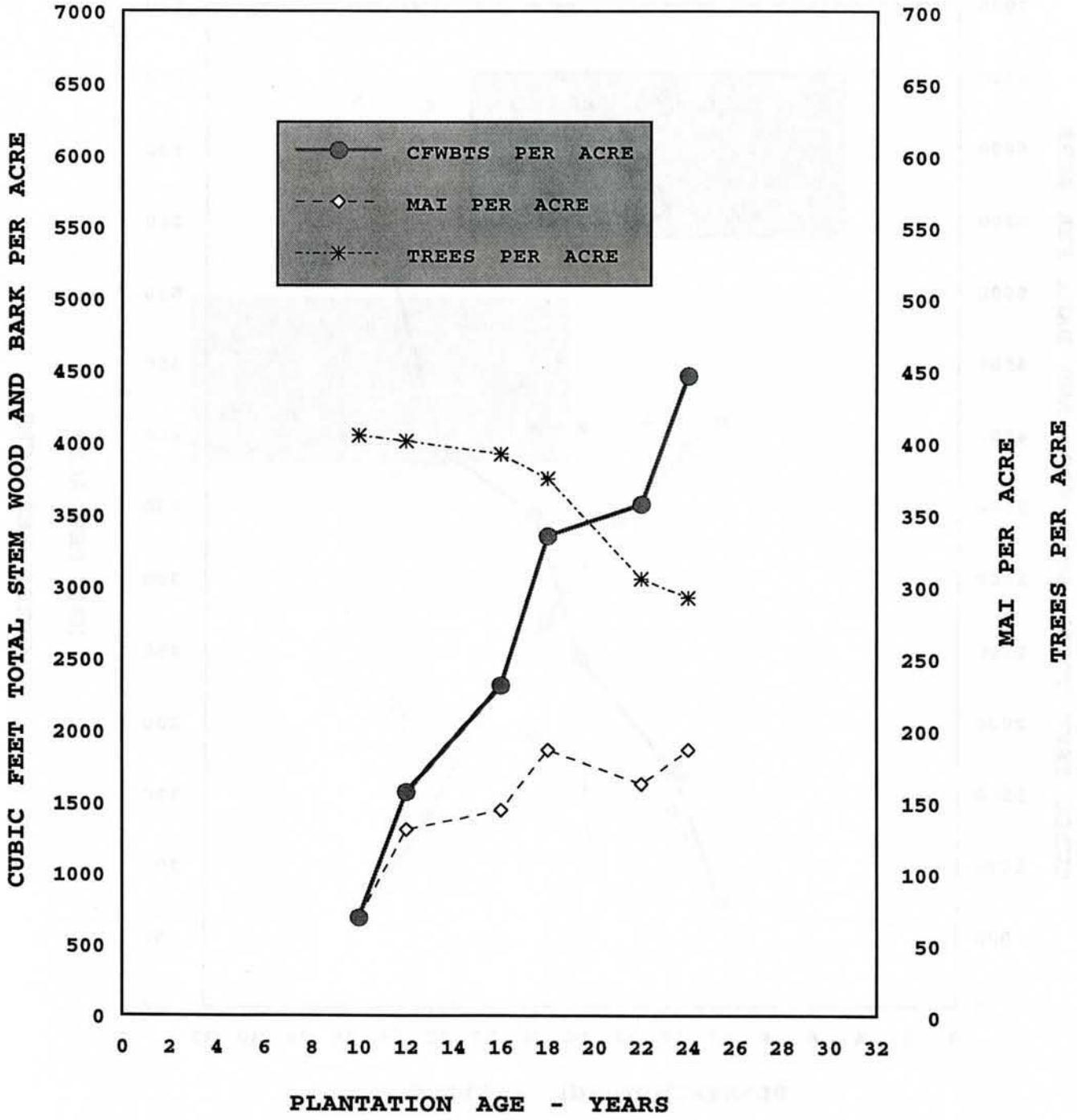
AGE = 26 YEARS, SITE INDEX = 73 FEET



OBSERVED CUBIC FEET TOTAL STEM
WOOD AND BARK PER ACRE
LOBLOLLY PINE ... ETPPRP

- PLOT 010/SUBPLOT 1 -

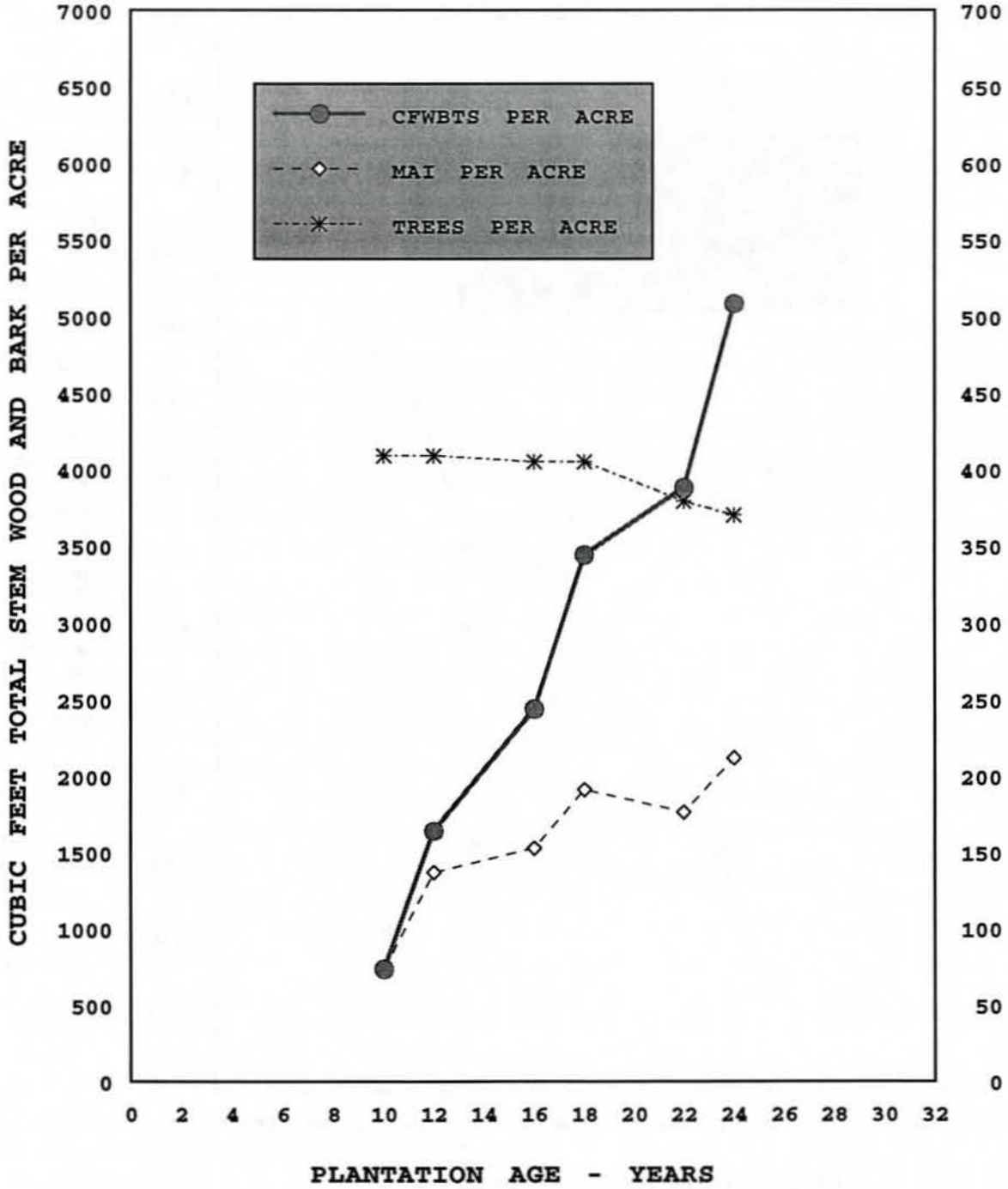
AGE = 24 YEARS, SITE INDEX = 77 FEET



OBSERVED CUBIC FEET TOTAL STEM
WOOD AND BARK PER ACRE
LOBLOLLY PINE ... ETPPRP

- PLOT 010/SUBPLOT 2 -

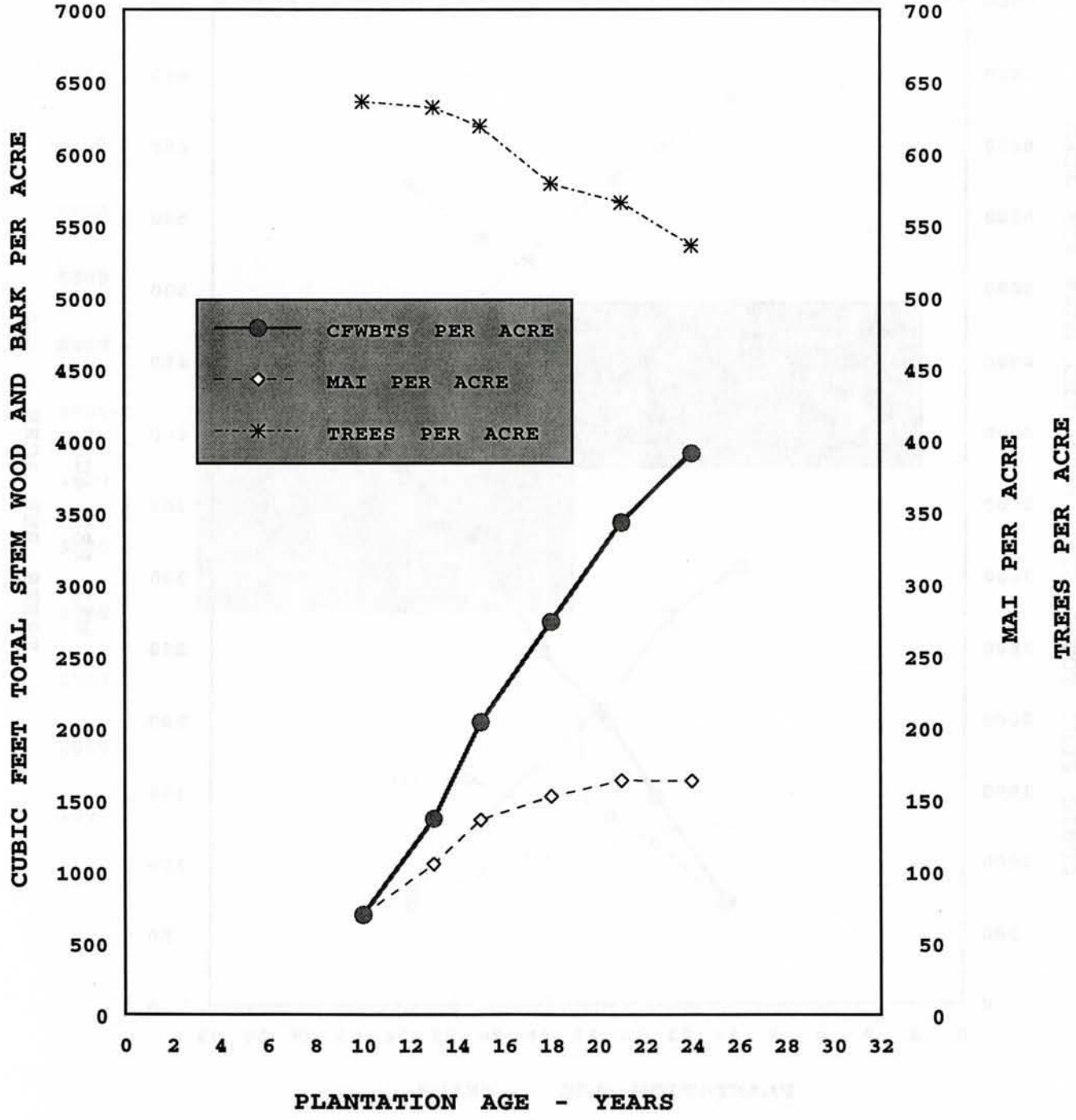
AGE = 24 YEARS, SITE INDEX = 76 FEET



OBSERVED CUBIC FEET TOTAL STEM
WOOD AND BARK PER ACRE
LOBLOLLY PINE ... ETPPRP

- PLOT 013/SUBPLOT 1 -

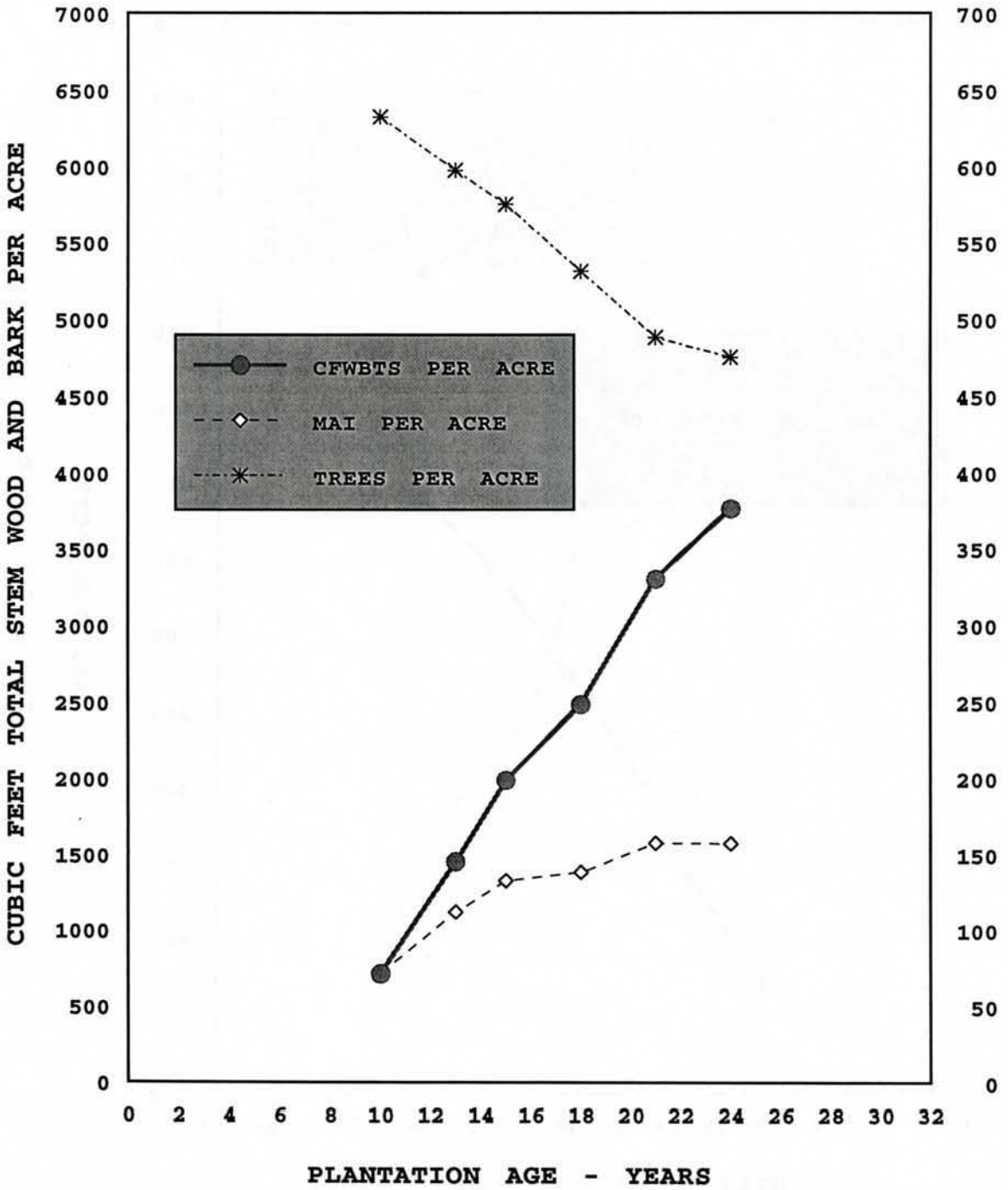
AGE = 24 YEARS, SITE INDEX = 66 FEET



OBSERVED CUBIC FEET TOTAL STEM
WOOD AND BARK PER ACRE
LOBLOLLY PINE ... ETPPRP

- PLOT 013/SUBPLOT 2 -

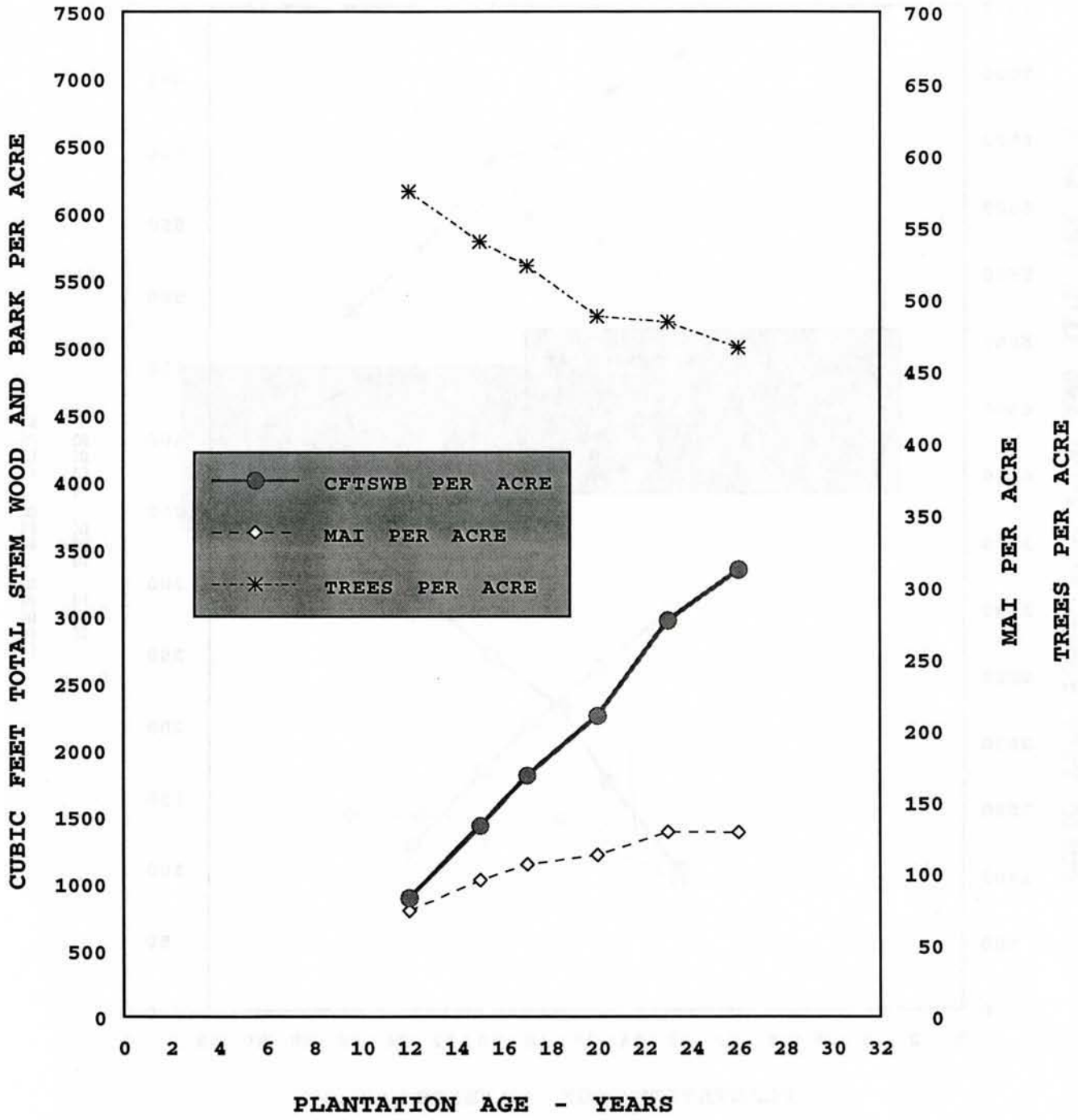
AGE = 24 YEARS, SITE INDEX = 66 FEET



OBSERVED CUBIC FEET TOTAL STEM
WOOD AND BARK PER ACRE
LOBLOLLY PINE ... ETPPRP

- PLOT 014/SUBPLOT 1 -

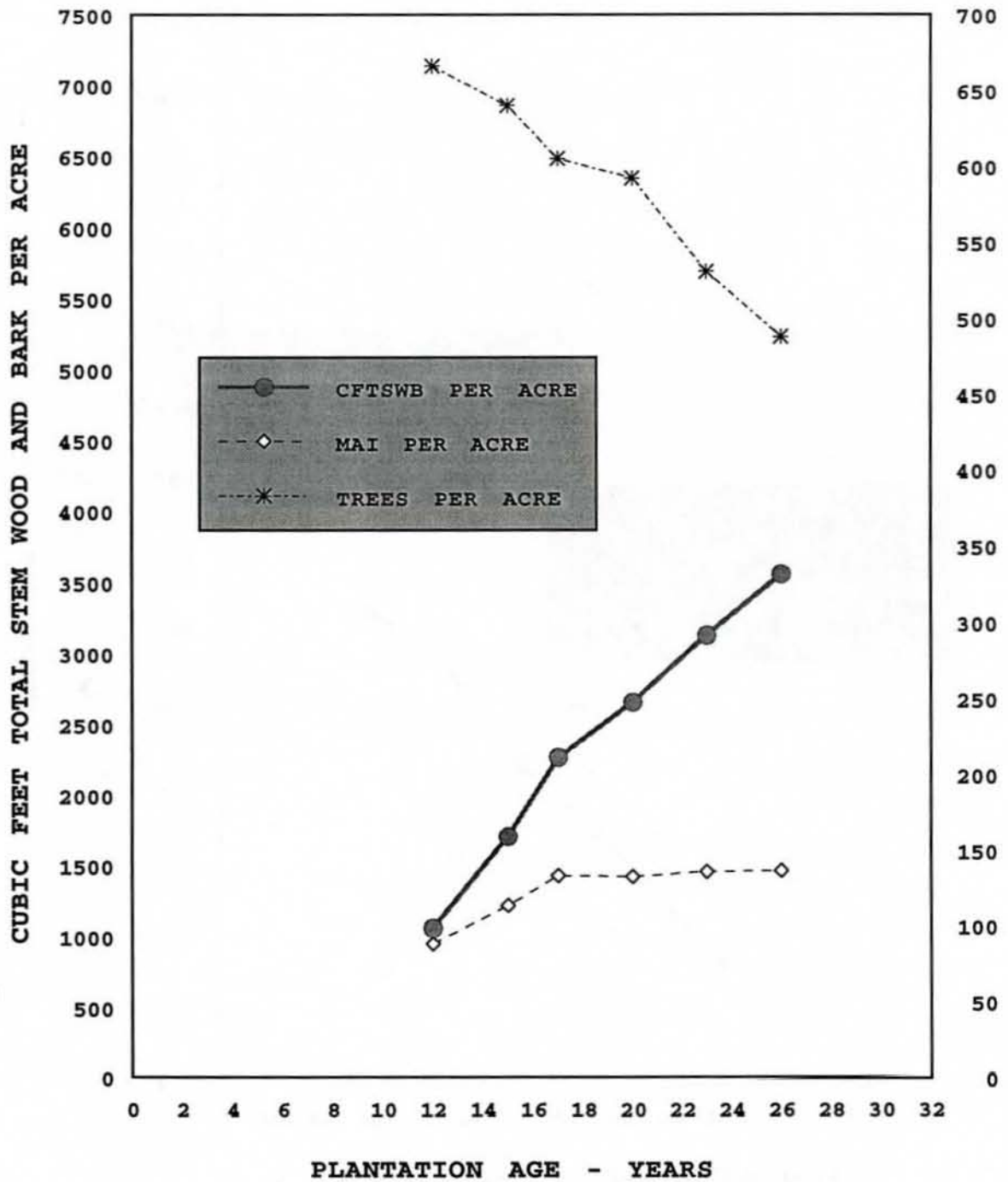
AGE = 26 YEARS, SITE INDEX = 64 FEET



OBSERVED CUBIC FEET TOTAL STEM
WOOD AND BARK PER ACRE
LOBLOLLY PINE ... ETPPRP

- PLOT 014/SUBPLOT 2 -

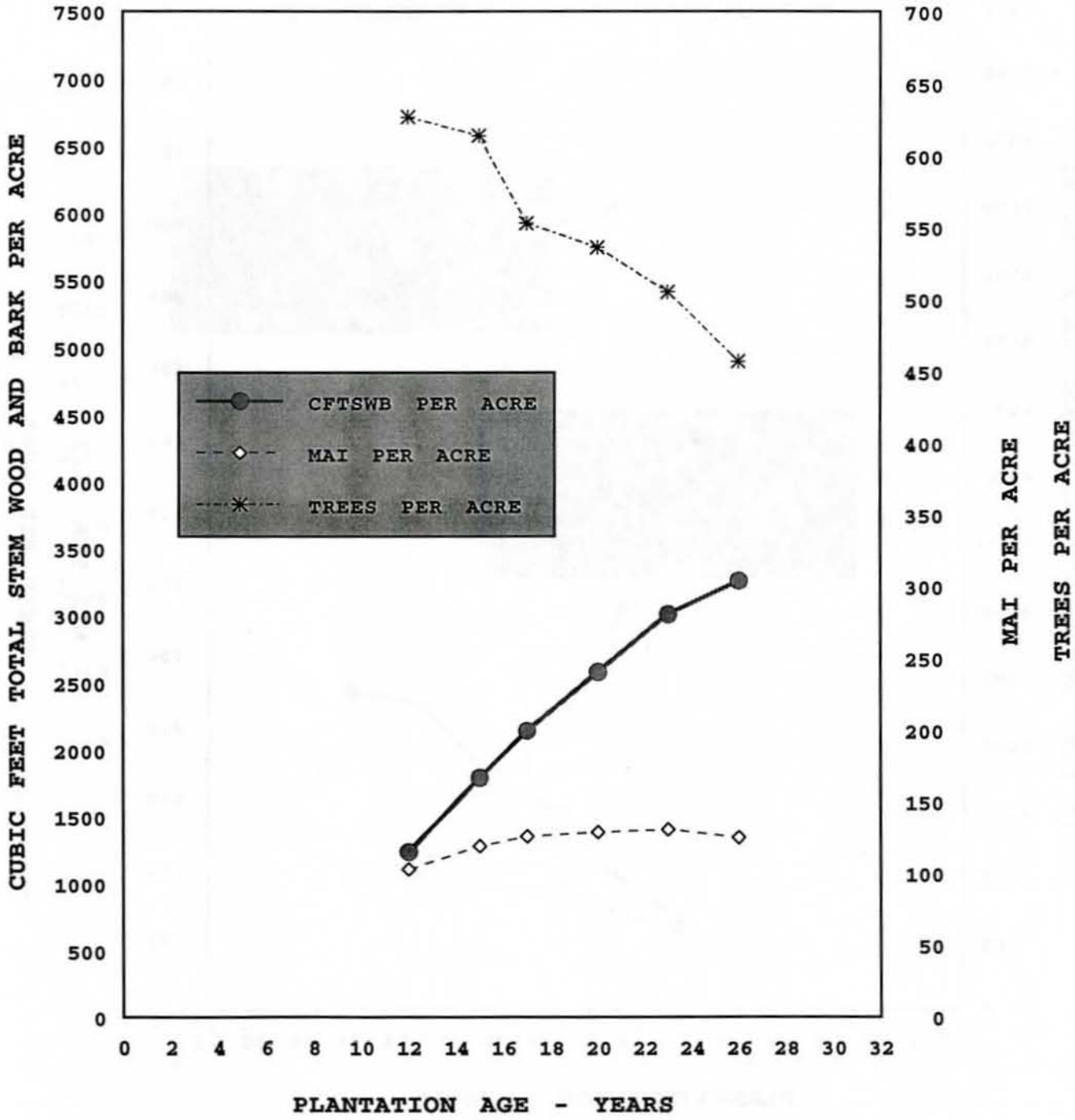
AGE = 26 YEARS, SITE INDEX = 59 FEET



OBSERVED CUBIC FEET TOTAL STEM
WOOD AND BARK PER ACRE
LOBLOLLY PINE ... ETPPRP

- PLOT 016/SUBPLOT 1 -

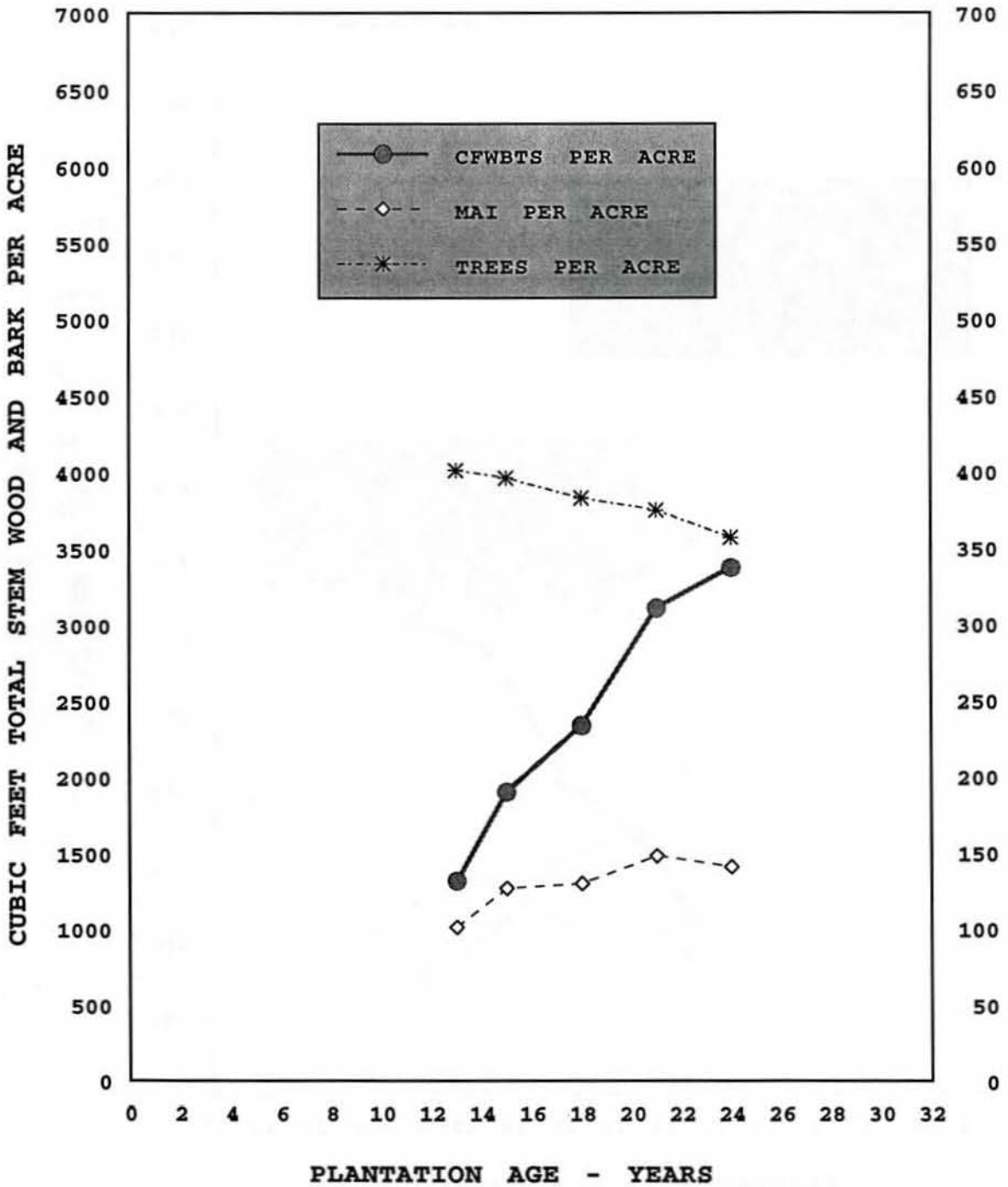
AGE = 26 YEARS, SITE INDEX = 64 FEET



OBSERVED CUBIC FEET TOTAL STEM
WOOD AND BARK PER ACRE
LOBLOLLY PINE ... ETPPRP

- PLOT 047/SUBPLOT 2 -

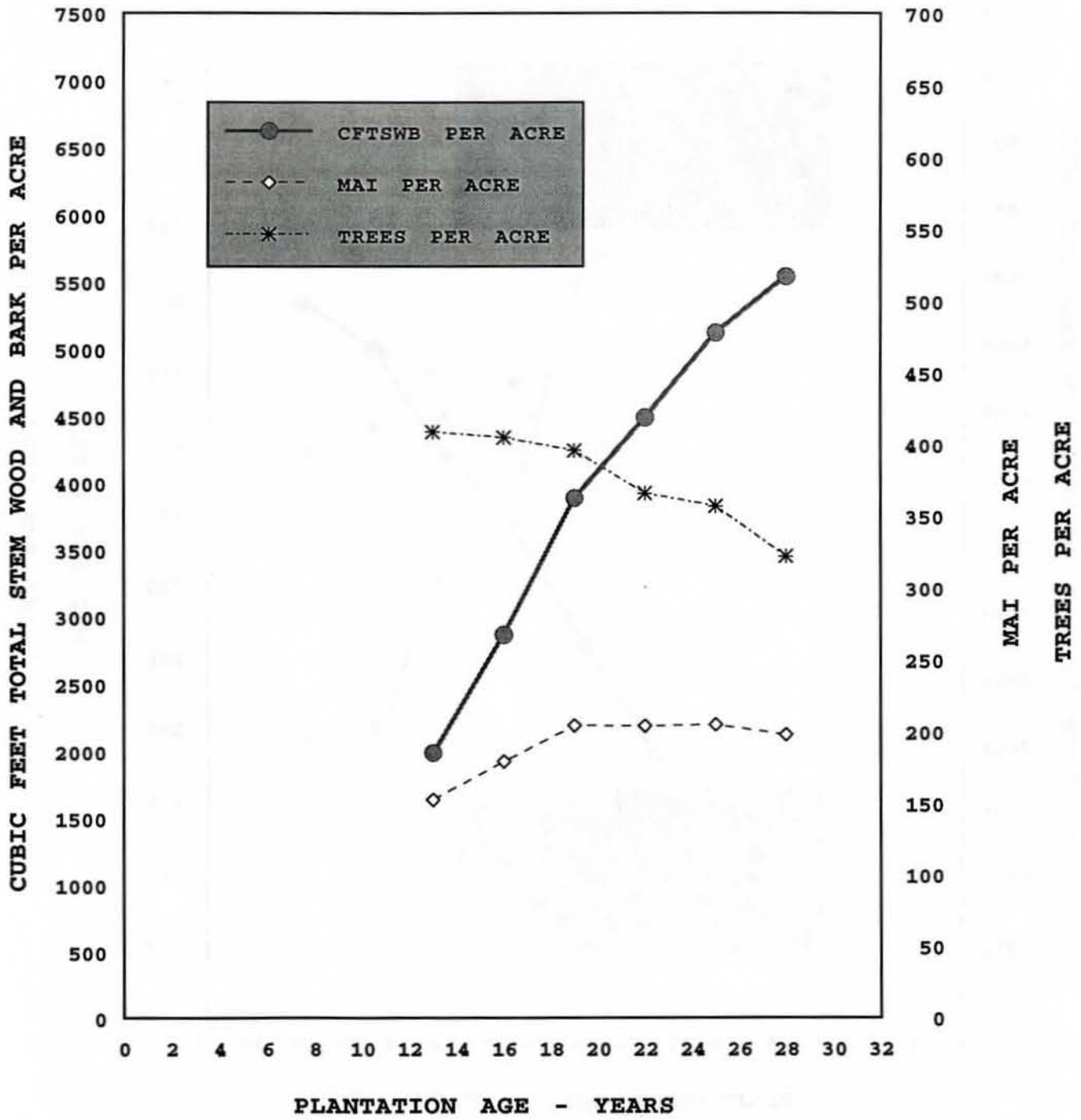
AGE = 24 YEARS, SITE INDEX = 65 FEET



OBSERVED CUBIC FEET TOTAL STEM
WOOD AND BARK PER ACRE
LOBLOLLY PINE ... ETPPRP

- PLOT 050/SUBPLOT 1 -

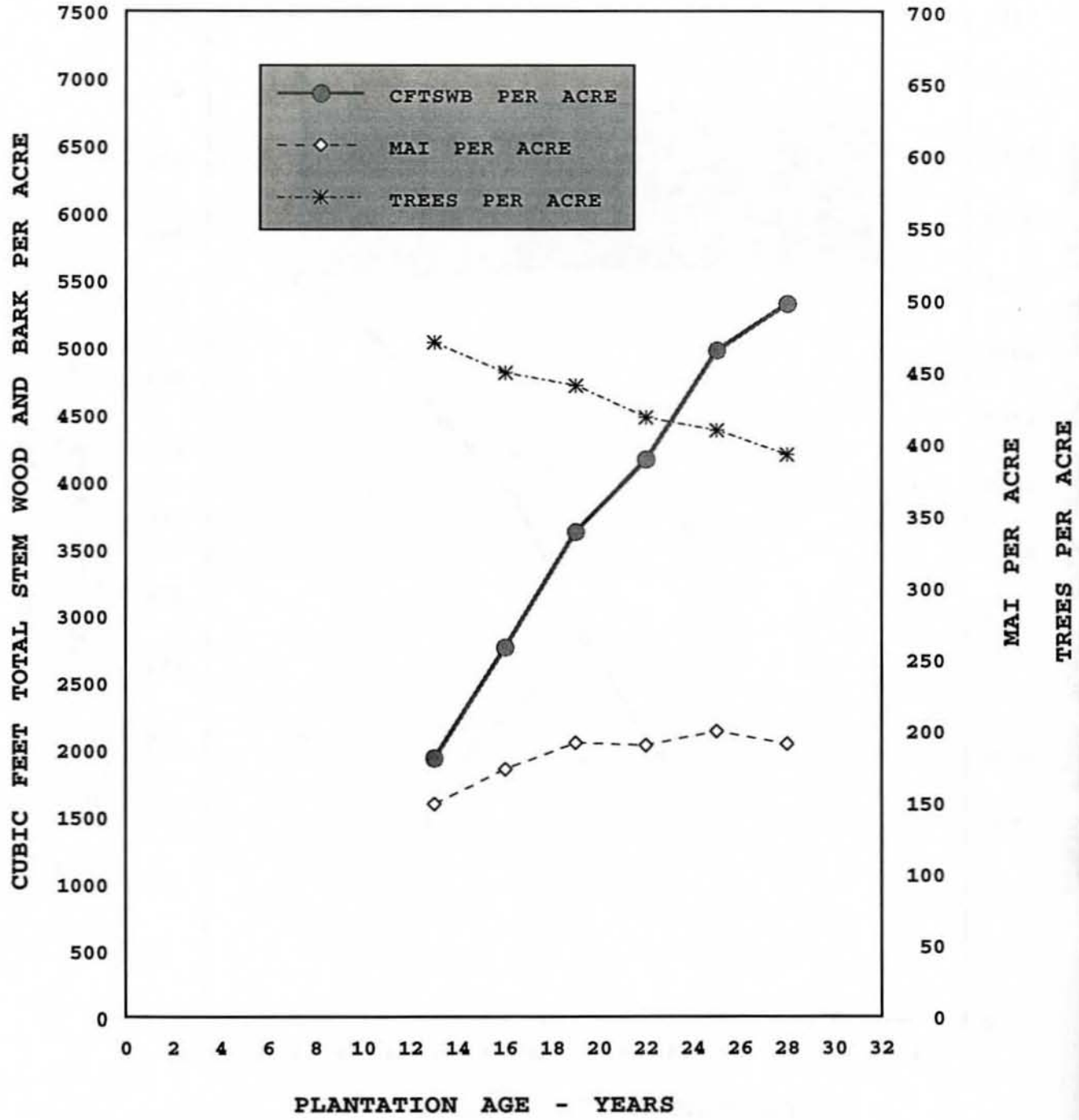
AGE = 28 YEARS, SITE INDEX = 73 FEET



OBSERVED CUBIC FEET TOTAL STEM
WOOD AND BARK PER ACRE
LOBLOLLY PINE ... ETPPRP

- PLOT 050/SUBPLOT 2 -

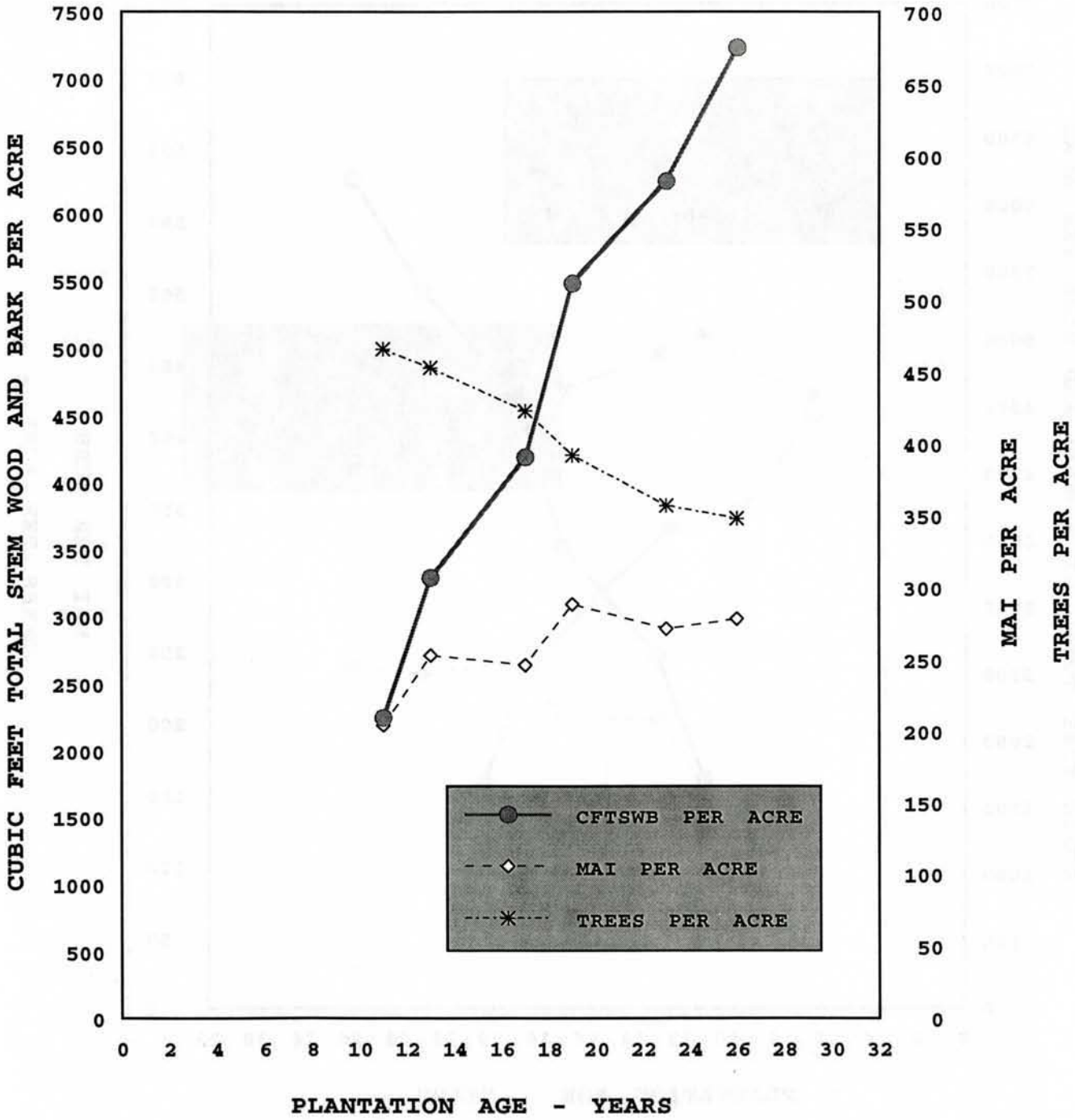
AGE = 28 YEARS, SITE INDEX = 69 FEET



OBSERVED CUBIC FEET TOTAL STEM
WOOD AND BARK PER ACRE
LOBLOLLY PINE ... ETPPRP

- PLOT 075/SUBPLOT 1 -

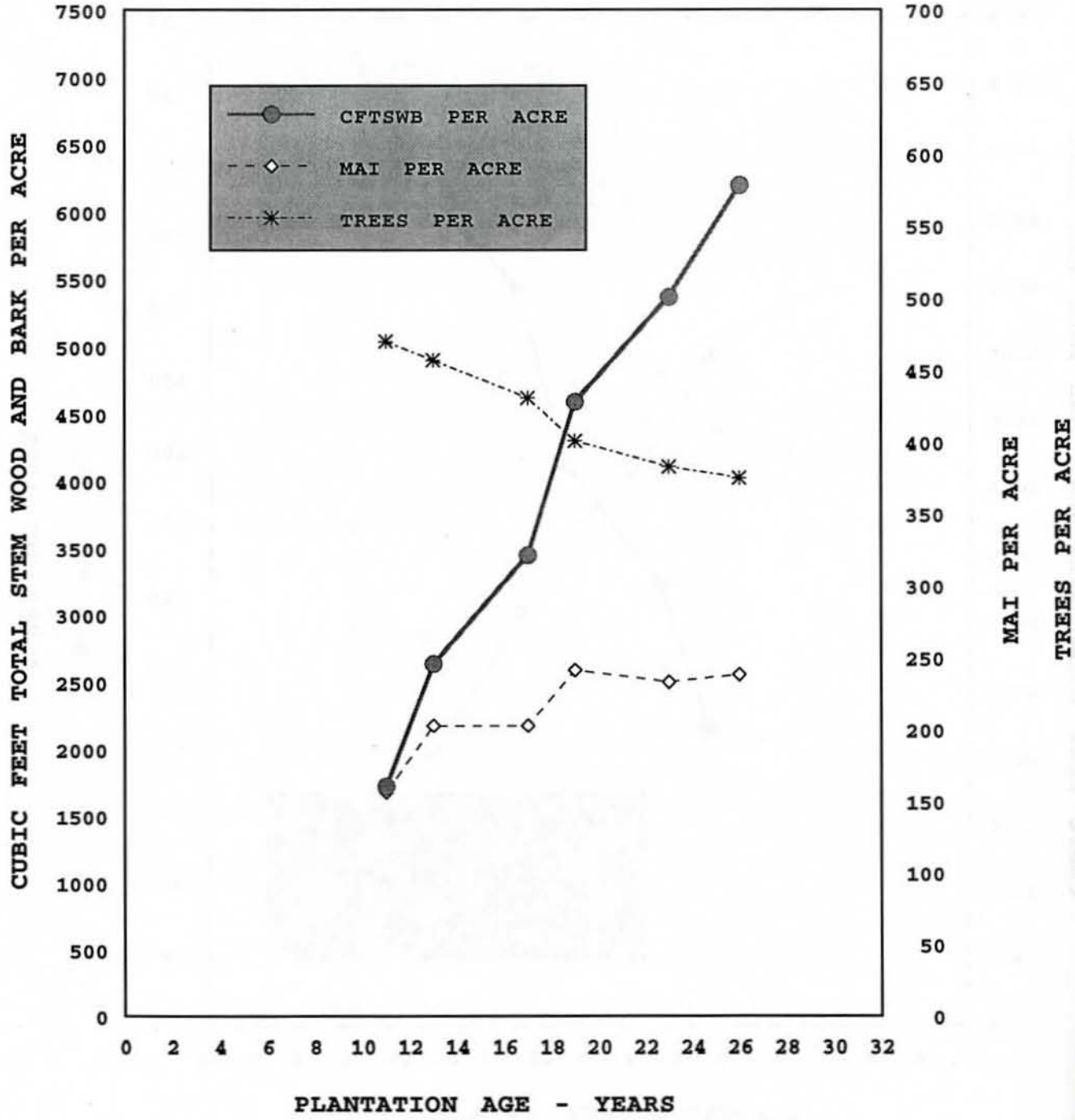
AGE = 26 YEARS, SITE INDEX = 83 FEET



OBSERVED CUBIC FEET TOTAL STEM
WOOD AND BARK PER ACRE
LOBLOLLY PINE ... ETPPRP

- PLOT 075/SUBPLOT 2 -

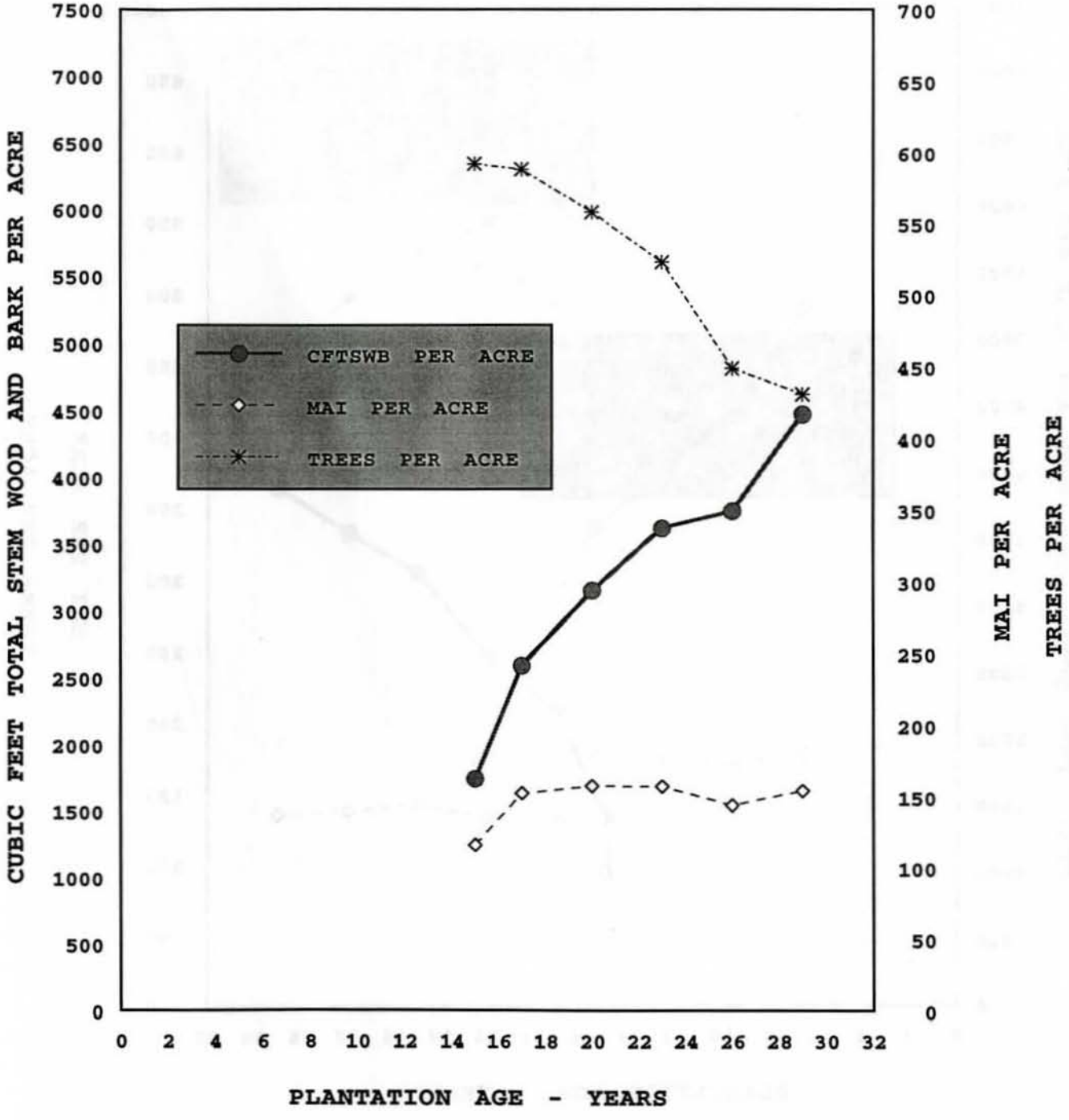
AGE = 26 YEARS, SITE INDEX = 78 FEET



OBSERVED CUBIC FEET TOTAL STEM
WOOD AND BARK PER ACRE
LOBLOLLY PINE ... ETPPRP

- PLOT 104/SUBPLOT 1 -

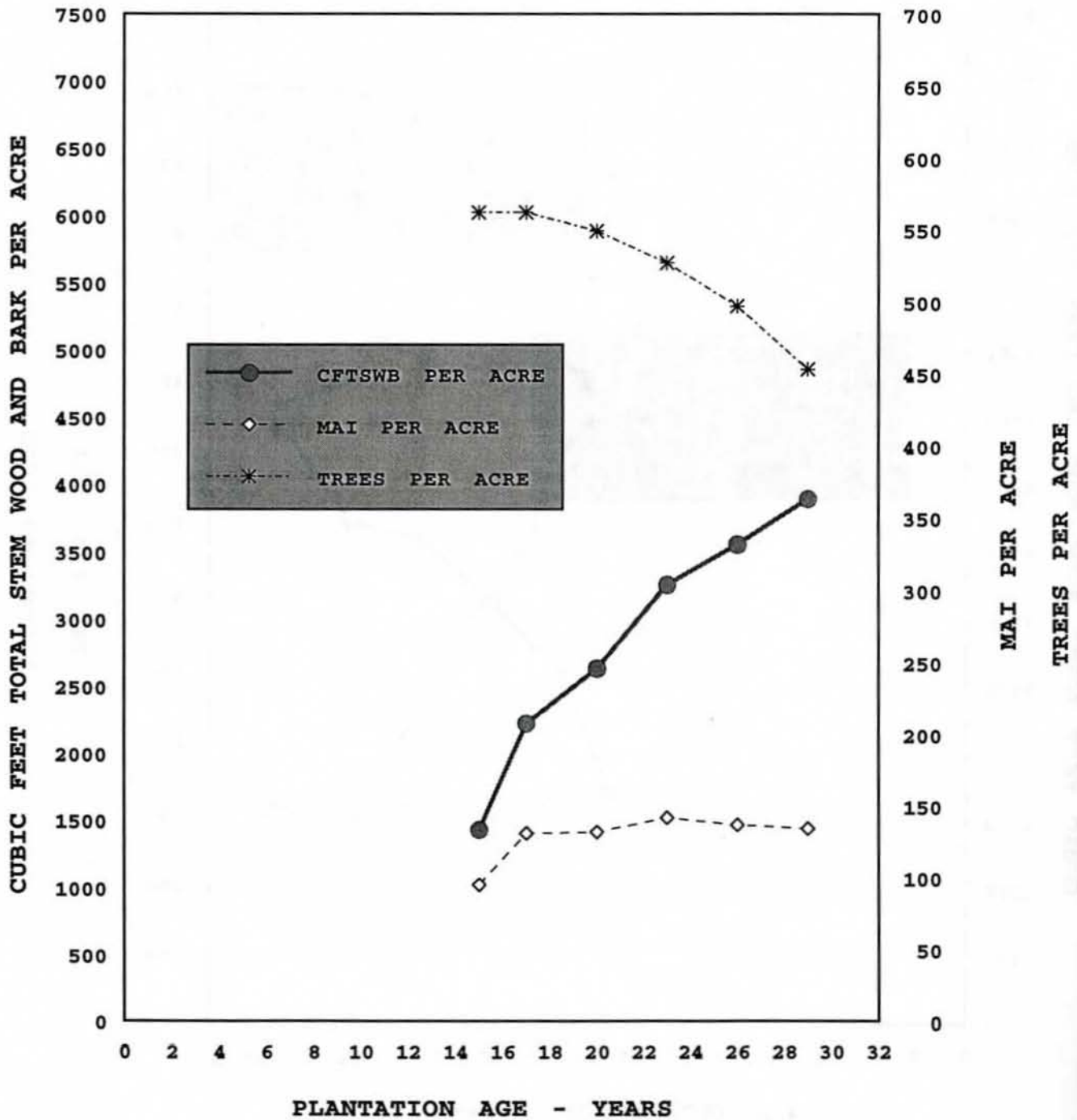
AGE = 29 YEARS, SITE INDEX = 74 FEET



OBSERVED CUBIC FEET TOTAL STEM
WOOD AND BARK PER ACRE
LOBLOLLY PINE ... ETPPRP

- PLOT 104/SUBPLOT 2 -

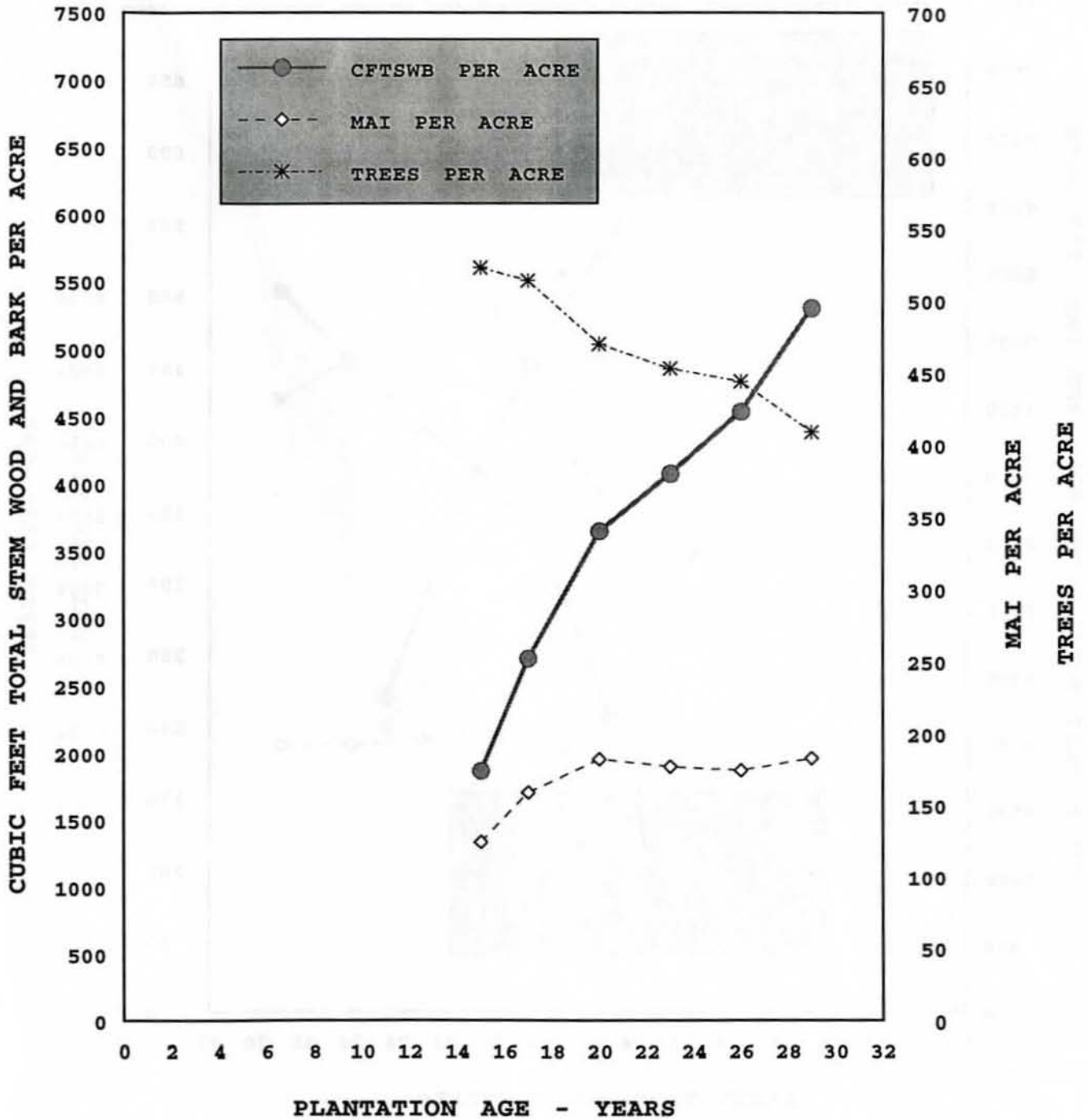
AGE = 29 YEARS, SITE INDEX = 68 FEET



OBSERVED CUBIC FEET TOTAL STEM
WOOD AND BARK PER ACRE
LOBLOLLY PINE ... ETPPRP

- PLOT 105/SUBPLOT 1 -

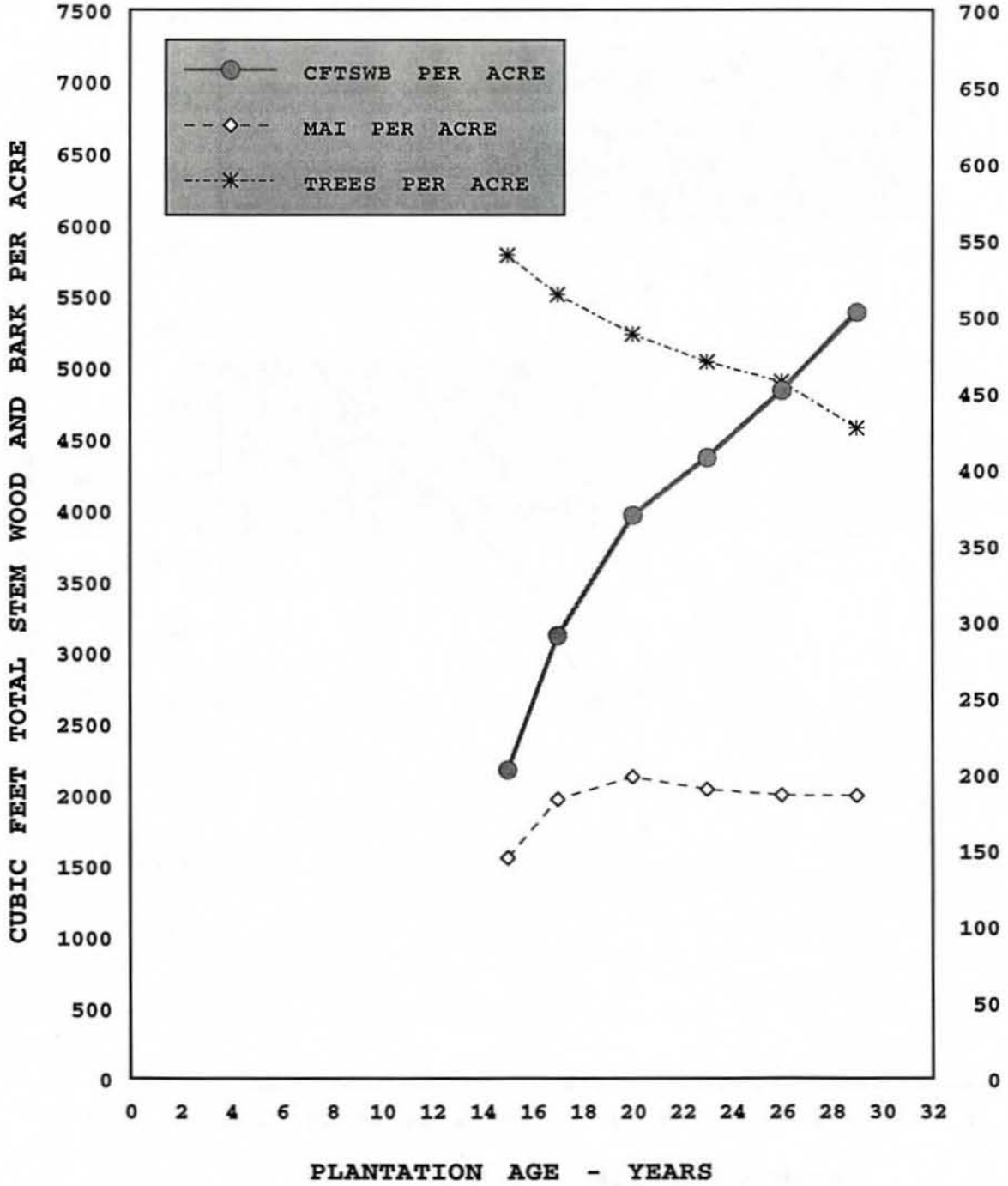
AGE = 29 YEARS, SITE INDEX = 72 FEET



OBSERVED CUBIC FEET TOTAL STEM
WOOD AND BARK PER ACRE
LOBLOLLY PINE ... ETPPRP

- PLOT 105/SUBPLOT 2 -

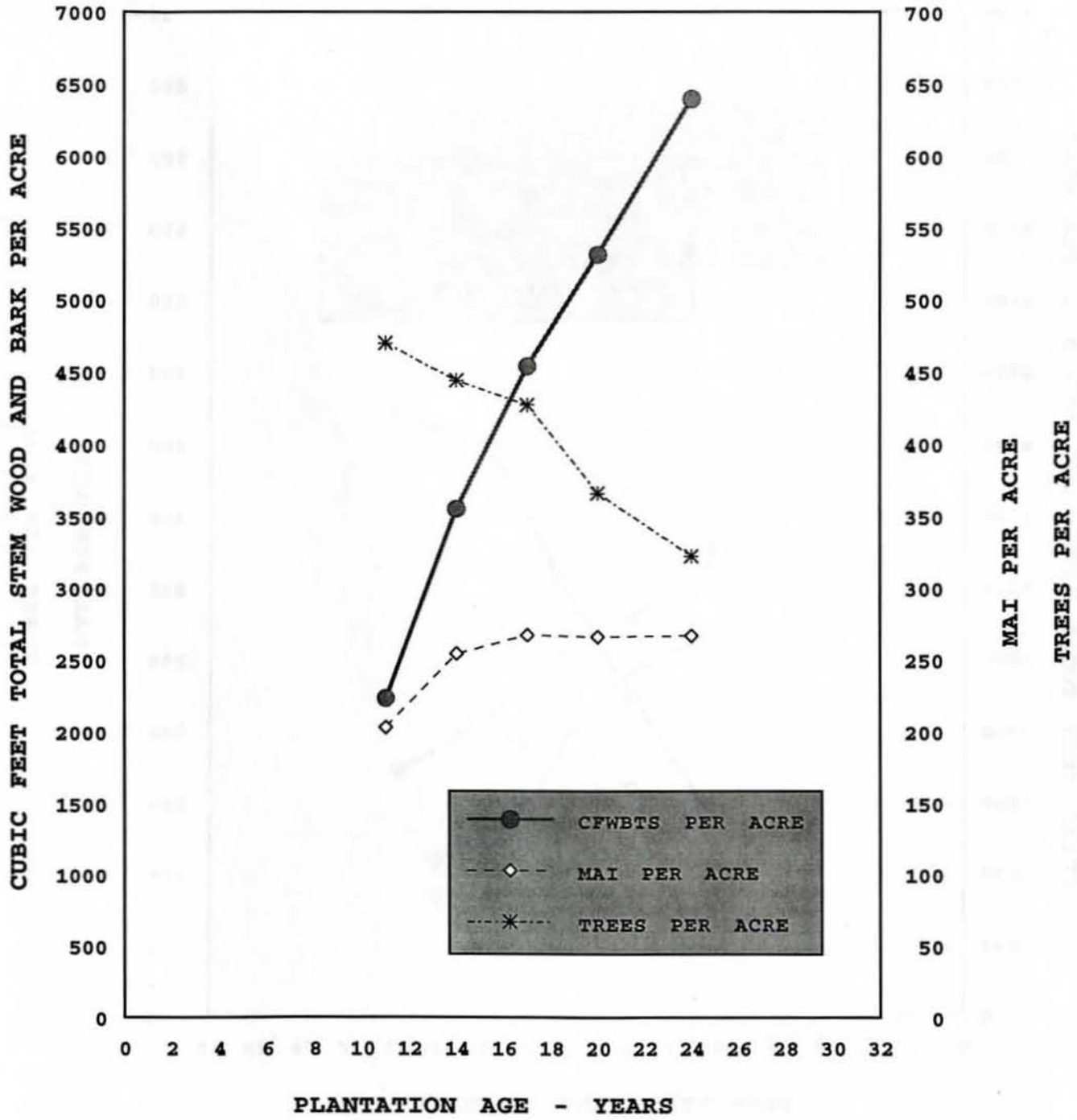
AGE = 29 YEARS, SITE INDEX = 71 FEET



OBSERVED CUBIC FEET TOTAL STEM
WOOD AND BARK PER ACRE
LOBLOLLY PINE ... ETPPRP

- PLOT 145/SUBPLOT 1 -

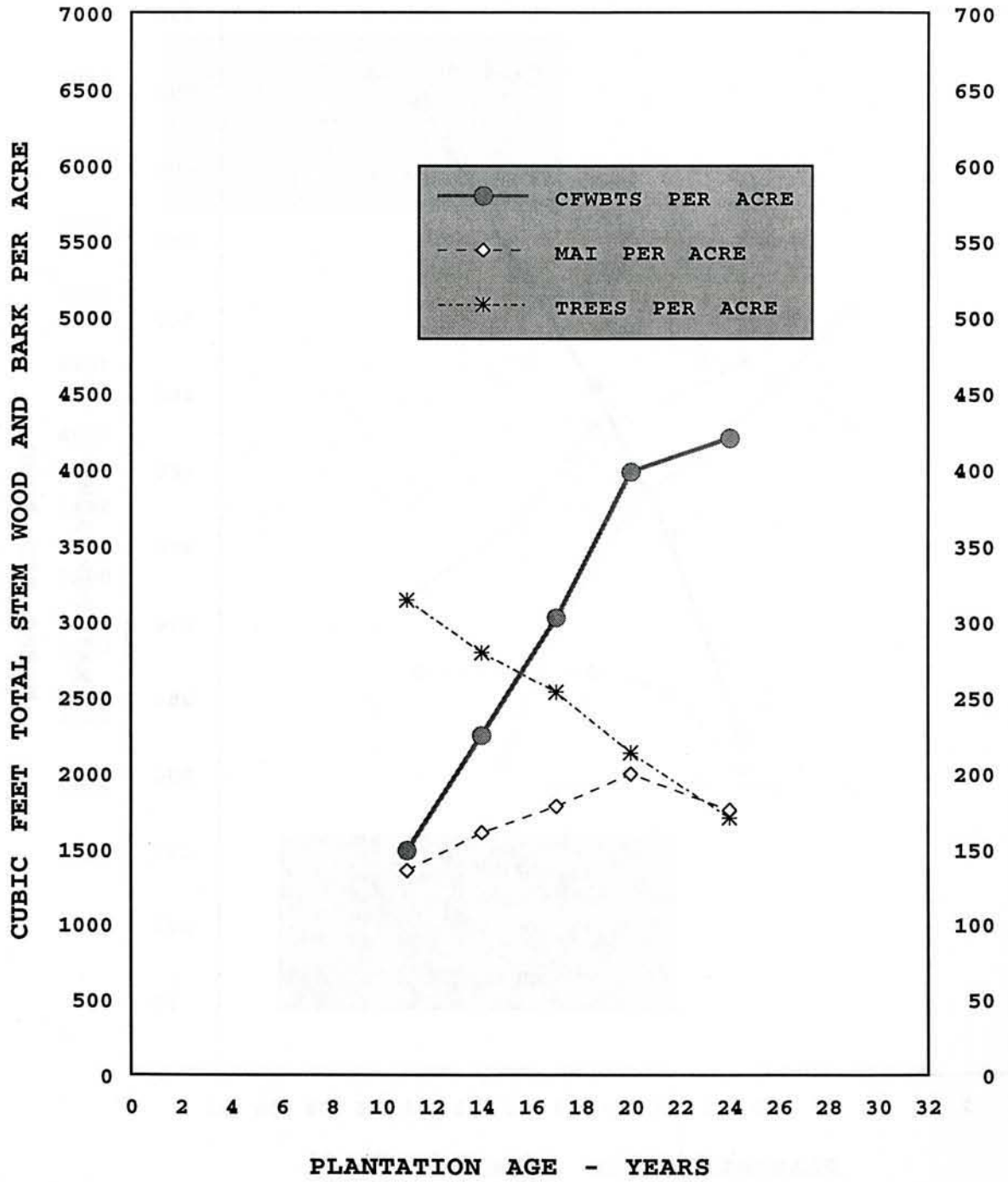
AGE = 24 YEARS, SITE INDEX = 89 FEET



OBSERVED CUBIC FEET TOTAL STEM
WOOD AND BARK PER ACRE
LOBLOLLY PINE ... ETPPRP

- PLOT 145/SUBPLOT 2 -

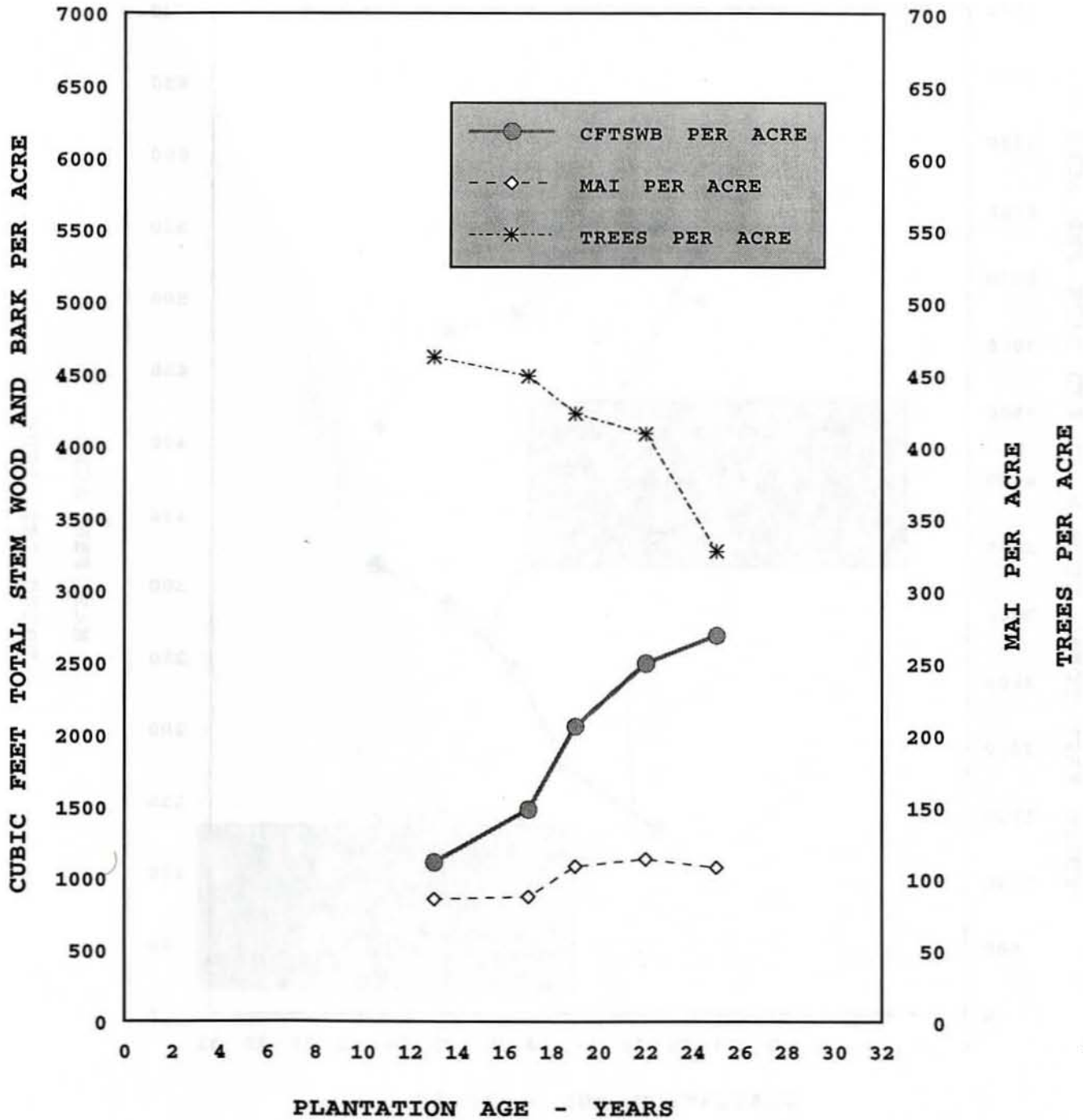
AGE = 24 YEARS, SITE INDEX = 86 FEET



OBSERVED CUBIC FEET TOTAL STEM
WOOD AND BARK PER ACRE
LOBLOLLY PINE ... ETPPRP

- PLOT 185/SUBPLOT 1 -

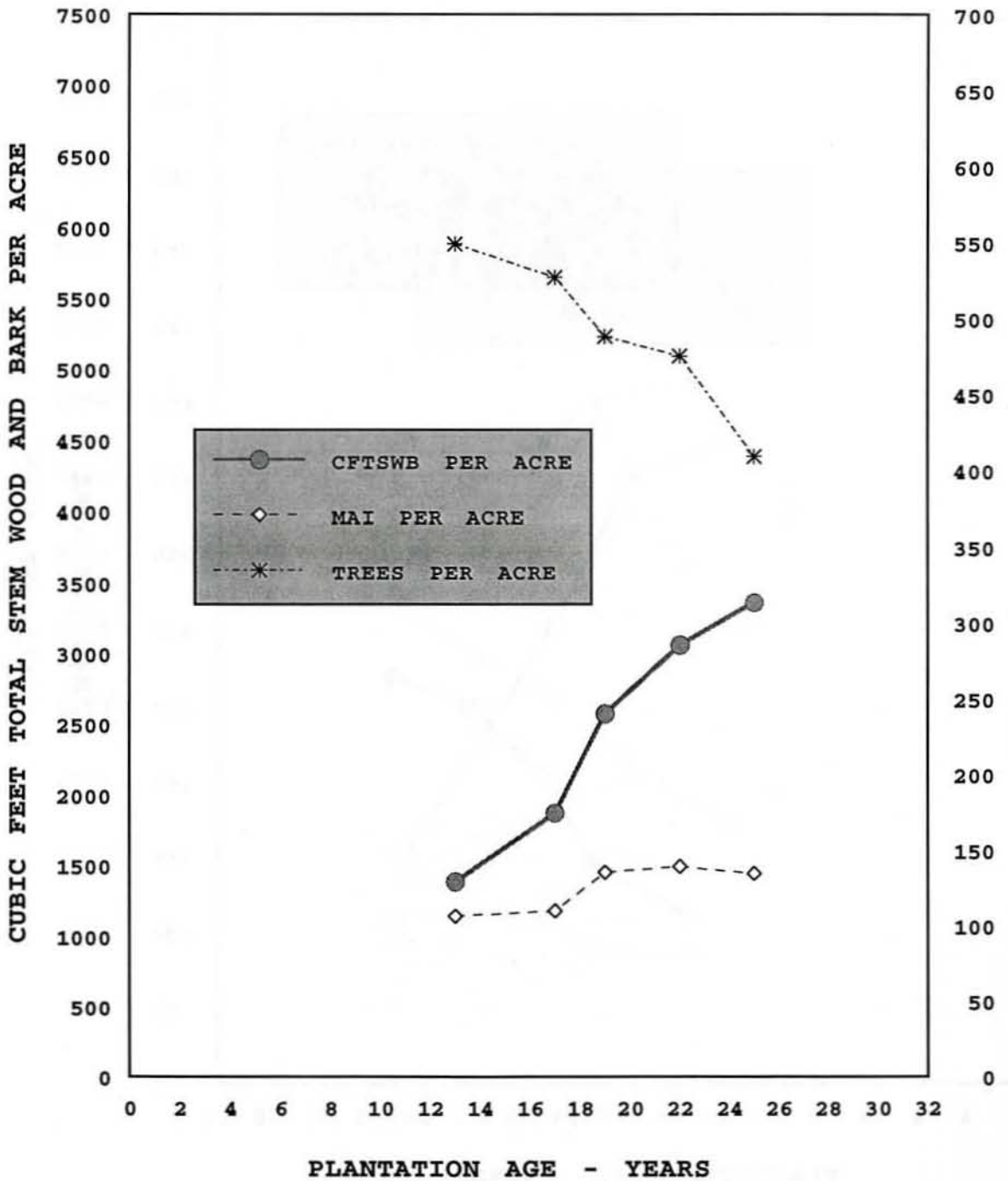
AGE = 25 YEARS, SITE INDEX = 64 FEET



OBSERVED CUBIC FEET TOTAL STEM
WOOD AND BARK PER ACRE
LOBLOLLY PINE ... ETPPRP

- PLOT 185/SUBPLOT 2 -

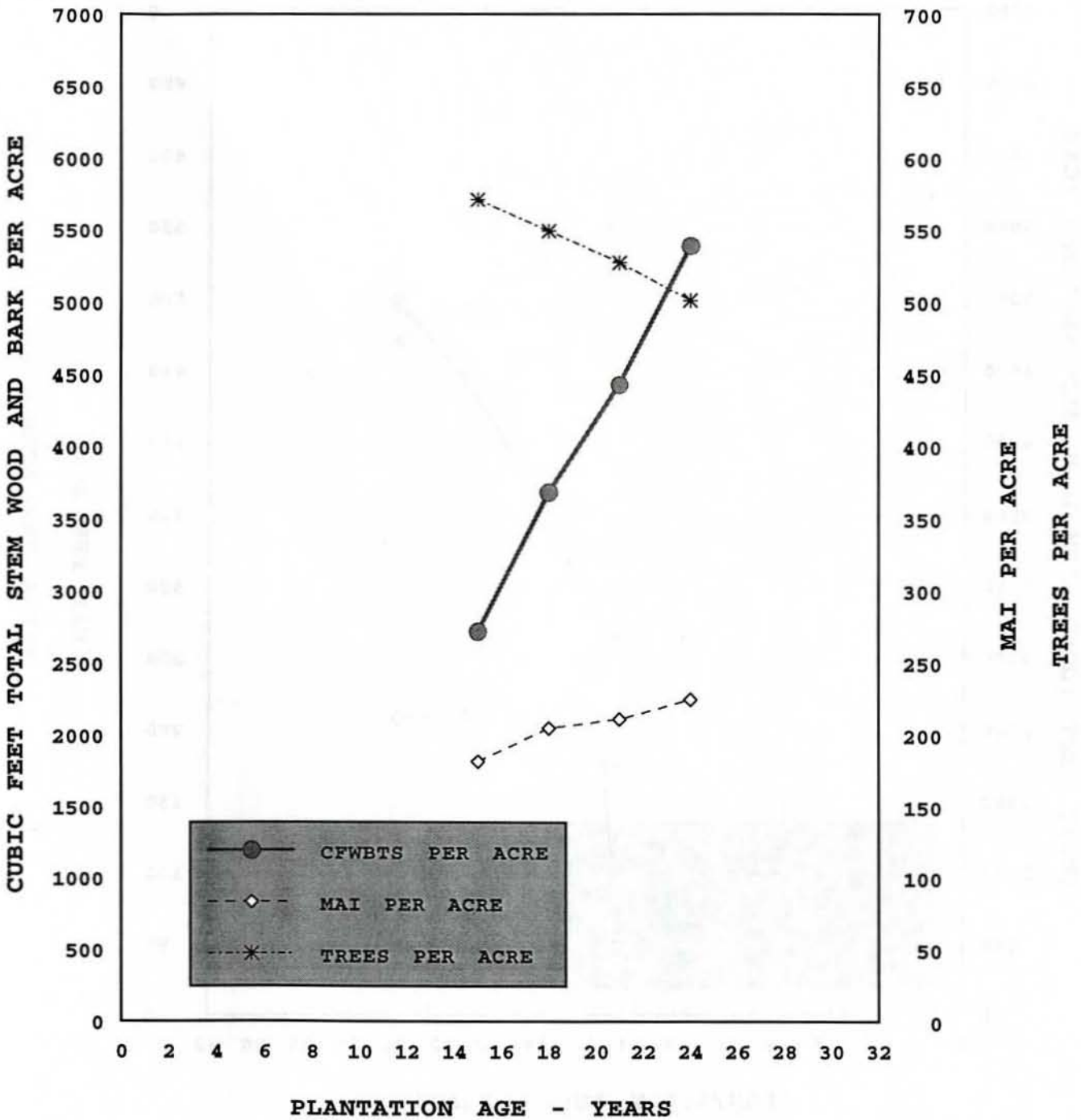
AGE = 25 YEARS, SITE INDEX = 63 FEET



OBSERVED CUBIC FEET TOTAL STEM
WOOD AND BARK PER ACRE
LOBLOLLY PINE ... ETPPRP

- PLOT 194/SUBPLOT 1 -

AGE = 24 YEARS, SITE INDEX = 70 FEET



OBSERVED CUBIC FEET TOTAL STEM
WOOD AND BARK PER ACRE
LOBLOLLY PINE ... ETPPRP

- PLOT 194/SUBPLOT 2 -

AGE = 24 YEARS, SITE INDEX = 68 FEET