7-1998

Project Report No. 61, Observed Per-Acre Basal Area Growth Trends, 28 Individual Observations, Unthinned Loblolly Pine Plantations

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OBSERVED
PER-ACRE BASAL AREA GROWTH TRENDS
28 INDIVIDUAL OBSERVATIONS

UNTHINNED LOBLOLLY PINE PLANTATIONS
EAST TEXAS

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REPORT 61

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 basal area in square feet 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, basal area in square feet per acre was calculated. Based on these values, MAI (mean annual increment) was calculated. The values are depicted in graphs on the next twenty eight pages.

Conclusions

From examination of the twenty eight graphs, it appears that maximum MAI tends to occur between 12-17 years.

Site index appears to have no influence on the timing of maximum mean annual increment.

And these observations are useful to the forest manager... The above range of maximum MAI values could be used as possible guidelines for a first thinning, or a possible harvest schedule if short rotations with no thinnings are the management objective.
OBSERVED BASAL AREA PER ACRE
LOBLOLLY PINE ... ETPRP

- PLOT 006/SUBPLOT 1 -

AGE = 24 YEARS, SITE INDEX = 72 FEET & TREES PER ACRE = 409
OBSERVED BASAL AREA PER ACRE
LOBLOLLY PINE ... ETPPRP

- PLOT 006/SUBPLOT 2 -

AGE = 24 YEARS, SITE INDEX = 67 FEET & TREES PER ACRE = 444

PLANTATION AGE - YEARS

BASAL AREA

MAI
OBSERVED BASAL AREA PER ACRE
LOBLOLLY PINE ... ETTPRP

- PLOT 009/SUBPLOT 1 -

AGE = 26 YEARS, SITE INDEX = 76 FEET & TREES PER ACRE = 423
OBSERVED BASAL AREA PER ACRE
LOBLOLLY PINE ... ETPPRP

- PLOT 009/SUBPLOT 2 -

AGE = 26 YEARS, SITE INDEX = 73 FEET & TREES PER ACRE = 375
OBSERVED BASAL AREA PER ACRE
LOBLOLLY PINE ... ETTPRP

- PLOT 010/SUBPLOT 1 -

AGE = 24 YEARS, SITE INDEX = 77 FEET & TREES PER ACRE = 292
OBSERVED BASAL AREA PER ACRE
LOBLOLLY PINE ... ETIPRP

- PLOT 010/SUBPLOT 2 -

AGE = 24 YEARS, SITE INDEX = 76 FEET & TREES PER ACRE = 370

PLANTATION AGE - YEARS
OBSERVED BASAL AREA PER ACRE
LOBLOLLY PINE ... ETPPRP

- PLOT 013/SUBPLOT 1 -

AGE = 24 YEARS, SITE INDEX = 66 FEET & TREES PER ACRE = 536
OBSERVED BASAL AREA PER ACRE
LOBLOLLY PINE ... ETPRPP

- PLOT 013/SUBPLOT 2 -

AGE = 24 YEARS, SITE INDEX = 66 FEET & TREES PER ACRE = 475

PLANTATION AGE - YEARS

BASAL AREA

MAI
OBSERVED BASAL AREA PER ACRE
LOBLOLLY PINE ... ETPPRP

- PLOT 014/SUBPLOT 1 -

AGE = 26 YEARS, SITE INDEX = 64 FEET & TREES PER ACRE = 466
OBSERVED BASAL AREA PER ACRE
LOBLOLLY PINE ... ETPFRP

- PLOT 014/SUBPLOT 2 -

AGE = 26 YEARS, SITE INDEX = 59 FEET & TREES PER ACRE = 488
OBSERVED BASAL AREA PER ACRE
LOBLOLLY PINE ... ETPRP

- PLOT 016/SUBPLOT 1 -

AGE = 26 YEARS, SITE INDEX = 64 FEET & TREES PER ACRE = 457
OBSERVED BASAL AREA PER ACRE
LOBLOLLY PINE ... ETPPRP

- PLOT 016/SUBPLOT 2 -

AGE = 26 YEARS, SITE INDEX = 55 FEET & TREES PER ACRE = 479

![Graph showing observed basal area per acre for loblolly pine on plot 016/subplot 2. The age is 26 years, site index is 55 feet, and trees per acre is 479.](image-url)
OBSERVED BASAL AREA PER ACRE
LOBLOLLY PINE ... ETTPRP

- PLOT 047/SUBPLOT 1 -

AGE = 24 YEARS, SITE INDEX = 68 FEET & TREES PER ACRE = 314

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Basal Area

...
OBSERVED BASAL AREA PER ACRE
LOBLOLLY PINE ... ETTPRP

- PLOT 047/SUBPLOT 2 -

AGE = 24 YEARS, SITE INDEX = 65 FEET & TREES PER ACRE = 357
OBSERVED BASAL AREA PER ACRE
LOBLOLLY PINE ... ETTPRP

- PLOT 050/SUBPLOT 1 -

AGE = 28 YEARS, SITE INDEX = 73 FEET & TREES PER ACRE = 322
OBSERVED BASAL AREA PER ACRE
LOBLOLLY PINE ... ETTPRP

- PLOT 050/SUBPLOT 2 -

AGE = 28 YEARS, SITE INDEX = 69 FEET & TREES PER ACRE = 392

PLANTATION AGE - YEARS

BASAL AREA

MAI
OBSERVED BASAL AREA PER ACRE
LOBLOLLY PINE ... ETPPRP
- PLOT 075/SUBPLOT 1 -
AGE = 26 YEARS, SITE INDEX = 83 FEET & TREES PER ACRE = 348
OBSERVED BASAL AREA PER ACRE
LOBLOLLY PINE ... ETTPRP

- PLOT 075/SUBPLOT 2 -

AGE = 26 YEARS, SITE INDEX = 77 FEET & TREES PER ACRE = 375

PLANTATION AGE - YEARS

BASAL AREA

MAI PER ACRE
OBSERVED BASAL AREA PER ACRE
LOBLOLLY PINE ... ETPPRP

PLOT 104/SUBPLOT 1

AGE = 29 YEARS, SITE INDEX = 74 FEET & TREES PER ACRE = 431

PLANTATION AGE - YEARS
OBSERVED BASAL AREA PER ACRE
LOBLOLLY PINE ... ETPPRP

- PLOT 104/SUBPLOT 2 -

AGE = 29 YEARS, SITE INDEX = 68 FEET & TREES PER ACRE = 453
OBSERVED BASAL AREA PER ACRE
LOBLOLLY PINE ... ETPPRP

- PLOT 105/SUBPLOT 1 -

Age = 29 years, Site Index = 72 feet & Trees per Acre = 409
OBSERVED BASAL AREA PER ACRE
LOBLOLLY PINE ... ETTPRP

- PLOT 105/SUBPLOT 2 -

AGE = 29 YEARS, SITE INDEX = 71 FEET & TREES PER ACRE = 427
OBSERVED BASAL AREA PER ACRE
LOBLOLLY PINE ... ETTPRP

- PLOT 145/SUBPLOT 1 -

AGE = 24 YEARS, SITE INDEX = 89 FEET & TREES PER ACRE = 322
OBSERVED BASAL AREA PER ACRE
LOBLOLLY PINE ... ETPPRP

- PLOT 145/SUBPLOT 2 -

AGE = 24 YEARS, SITE INDEX = 86 FEET & TREES PER ACRE = 170
OBSERVED BASAL AREA PER ACRE
LOBLOLLY PINE ... ETPPRP

- PLOT 185/SUBPLOT 1 -

AGE = 25 YEARS, SITE INDEX = 64 FEET & TREES PER ACRE = 327
OBSERVED BASAL AREA PER ACRE
LOBLOLLY PINE ... ETPPRP
- PLOT 185/SUBPLOT 2 -

AGE = 25 YEARS, SITE INDEX = 63 FEET & TREES PER ACRE = 409
OBSERVED BASAL AREA PER ACRE
LOBLOLLY PINE ... ETPPRP

- PLOT 194/SUBPLOT 1 -

AGE = 24 YEARS, SITE INDEX = 70 FEET & TREES PER ACRE = 501

PLANTATION AGE - YEARS

BASAL AREA

MAI PER ACRE
OBSERVED BASAL AREA PER ACRE
LOBLOLLY PINE ... ETTPRP

- PLOT 194/SUBPLOT 2 -

AGE = 24 YEARS, SITE INDEX = 68 FEET & TREES PER ACRE = 470

PLANTATION AGE - YEARS

BASEL AREA SQUARE FEET PER ACRE

MAI PER ACRE