



GEORGIA LANDOWNER SUMMIT

DEC. 17, 2021 – JEKYLL ISLAND, GA



TITLE SPONSOR

FARM CREDIT

ASSOCIATIONS OF GEORGIA



GEORGIA LANDOWNER SUMMIT

PART 1: INCREASING THE FINANCIAL RETURNS ON YOUR TIMBERLAND



DR. DAVID DICKENS

Professor of Forest Productivity
UGA Warnell School of Forestry &
Natural Resources



TIM MILLER

Director of Membership
Georgia Forestry Association



MARK FRYER

Partner
AssuredPartners



TITLE SPONSOR

FARM CREDIT

ASSOCIATIONS OF GEORGIA



FOREST MANAGEMENT & PRODUCTIVITY

DR. DAVID DICKENS | Professor of Forest Productivity
UGA Warnell School of Forestry & Natural Resources



Herbicide, Burn, V-blade Plant Slash | Dec, 2000



Same Slash Pine Stand | Dec 2021
(40 ft ht, 4-7" dbh, pine straw raking annual income, Laurens Co, GA)

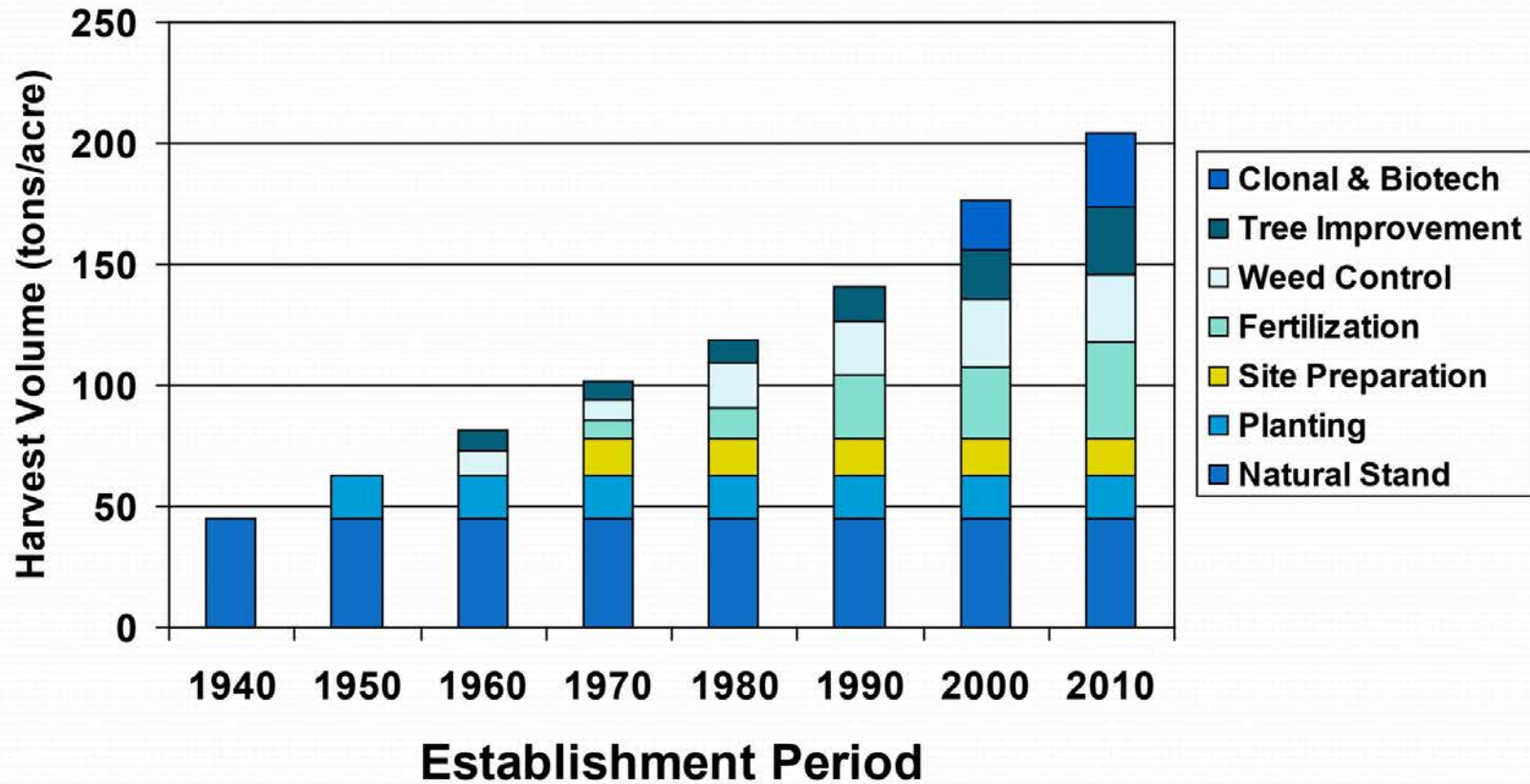
Forest Management Practices to Accelerate & Increase Timber Value

- What are the landowner's near- and long-term goals and objectives?
(this session will focus on loblolly, slash and longleaf pine management)
- Understand that the establishment phase is the most expensive investment (other than the land purchase) and the decisions that one has to live with through rotation age (20 to 50 yrs or more).
- Wise forest management through the life of a stand can greatly aid in the acceleration (reducing rotation age) & increase in timber value.



Factors that Accelerate Stand Development & Enhance Income

Southern Pine Productivity Increases



Fox, Jokela, and Allen, 2004



Know Your Soils

(Or have a Forester Help with Soils and Pine Species Selection)

◀ Excessively drained deep sand w/very low fertility = A Longleaf Site

Site Index (base age 25-yrs) <40 ft

Poorly drained, bedded 25 yr. old ▶
loblolly CRIFF

A soil = highly productive site,
especially when phosphorus is
added at planting
(SI >80 ft)

6' County Agent 85' Loblolly



Pick the Right Pine Species for the Soils and Landowner Objectives

- GA Coastal Plain - Loblolly, longleaf or slash pine are the main Southern pine choices
- GA Piedmont – Loblolly is the main choice (<1500 ft elevation) and the longleaf montane parent material for the Rome GA area
- Seedling quality, consistency, and genetics are also very important (addressed later today)



The Benefits of using a Local, Reputable, Registered Consulting Forester

- Aid with site preparation, seedlings and planting scheduling – oversee these activities
- Cruise timber for tonnage by product class and value, mark timber for thinnings
- Set up timber sales (usually get a number of bids), follow the logging operation
- Know what the landowner has by stand should a natural disaster (tornado, hurricane, ice storm) hit one's properties & is a landowner's best chance to get loggers working ASAP – plus other work as well



The Establishment Phase - Introduction

- Pine stand age = 0-3 yrs
 - Pine growth limited more by herbaceous weeds
- Pine stands age > 3 yrs
 - Pine growth limited more by hardwoods
- Herbicides are applied to over 1 million acres annually to control competition

Tiarks and Haywood (1986), Miller et al (1991, 2005)



Site Preparation

- Is mechanical needed (poorly drained soils: bedding)?
- Yes to bedding on poorly drained soils – mostly NO on better drained soils & the Piedmont



Site Preparation: Competition Control

Glover & Zutter 1993
Can J For Res.

Study shows the long-term benefit of early hardwood control on loblolly growth

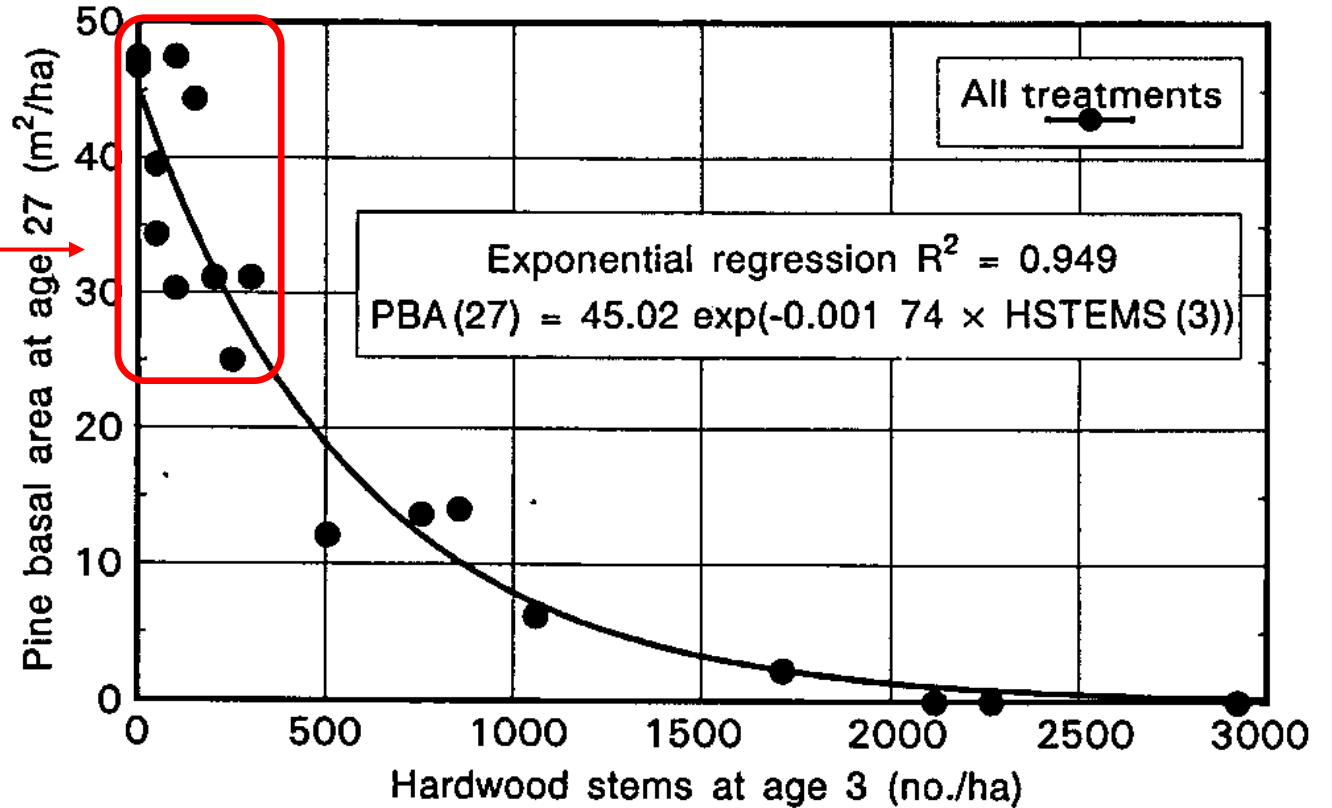


FIG. 9. Relationship between pine basal area per hectare at age 27 (PBA(27)) and number of hardwood stems greater than 2.5 cm at age 3 (H Stems (3)).

Conv. Factors: 2.47 ac/ha, 4.36 ft²/ac = 1m²/ha, 2.54cm/inch

→ Age 3; 350/ha hardwood threshold = 140/ac (>1" diam) hardwood threshold

Chemical Site Prep vs Mechanical Site Prep

Two Upland Well Drained Sites (that did not need bedding)



Shear, Rootrake, Pile, Bed (\$325/ac Oct 2021)

4 yr-old slash w/ >1500 sweetgum/ac



Polaris SP (imazapyr) + Razor Pro (glyphosate) +
Spyder (sulfometuron) \$85/ac Oct 2020)

1 yr-old slash w/ <250 hardwoods/ac

Chemical Site Prep Brown and Burn

(done on moderately well to excessively drained Coastal Plain soils and most Piedmont sites)

Greene Co GA loblolly stand—note low # of hardwoods/ac

1st Growing Season



5th Growing Season



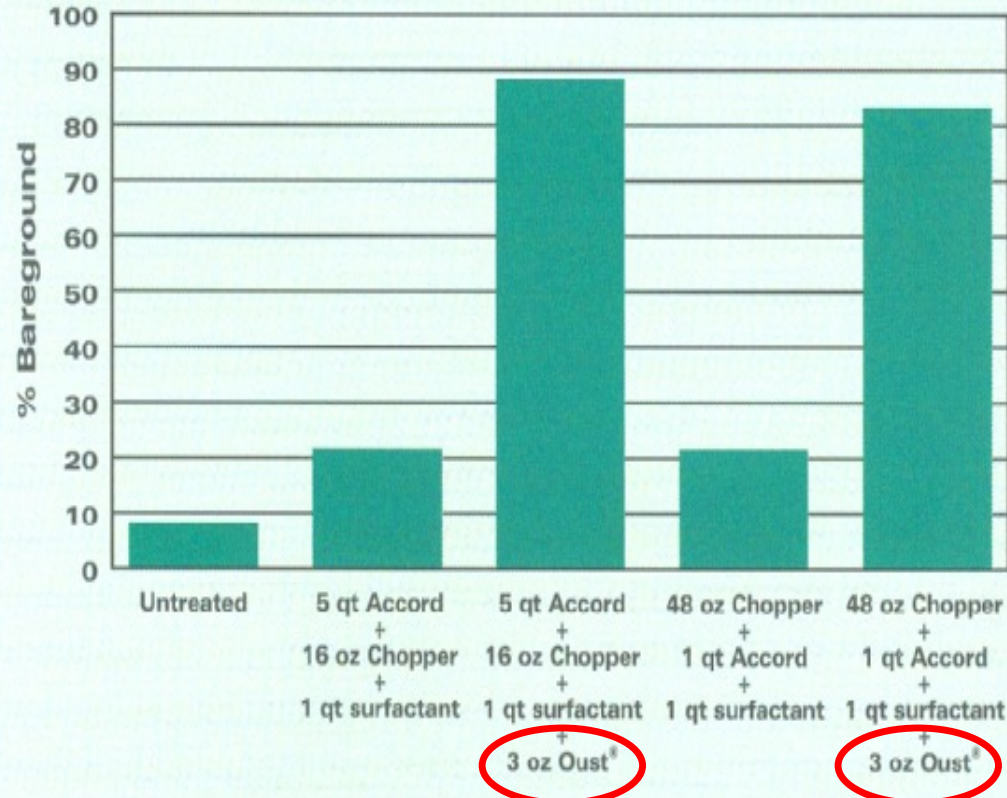
Chemical Late Season SP with Oust is Promising (for woody and HWC)

University Tests Confirm Fall Oust® Works with Standard Late-Season Site Prep Treatments!

Site prep tests: Mashulaville, Miss.

Application: September 1998

Evaluation: June 15, 1999 (270 days after application)



Tests conducted by A. Ezell, Mississippi State University, 1998-1999

The Importance of 1st yr Post Plant Herbaceous Weed Control

(1st yr 4 ft banded HWC 10 oz/ac Oustar 29 April 2015 photos 2 YAP)

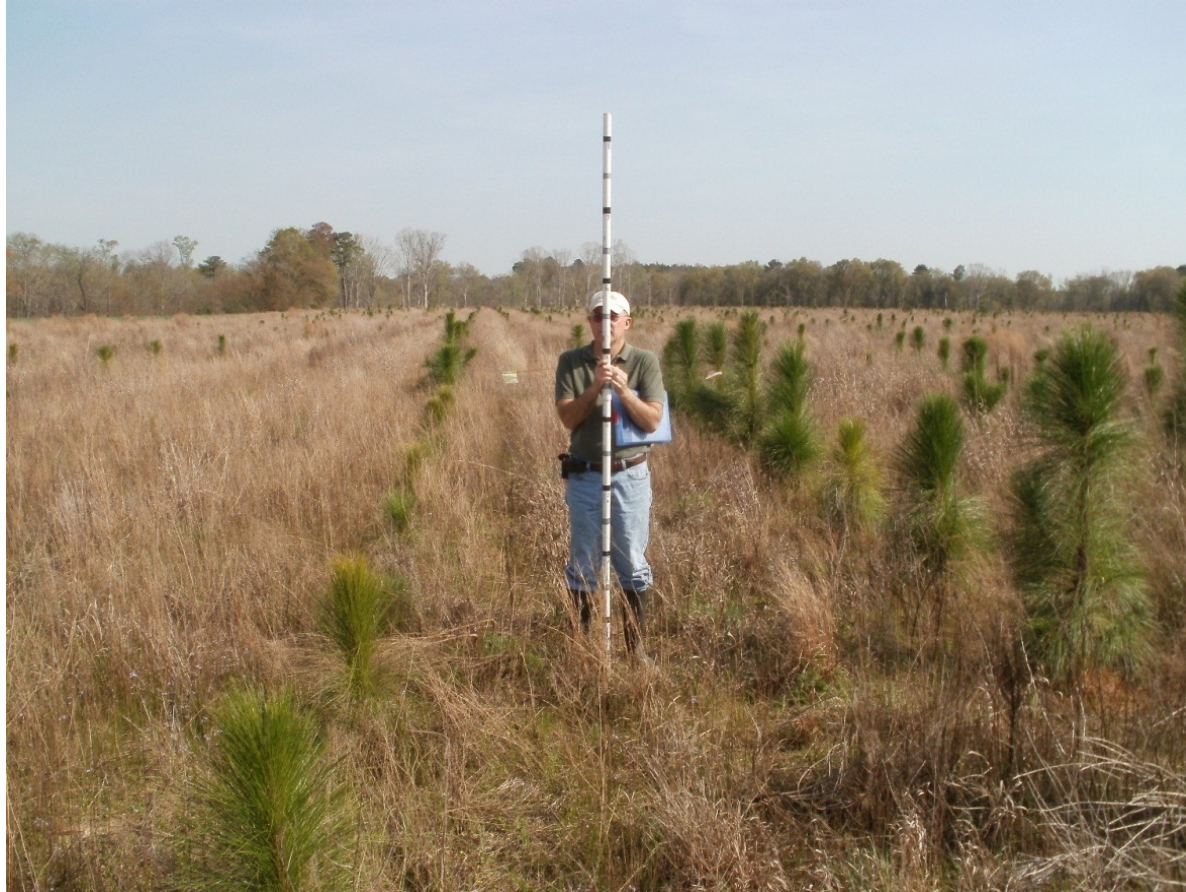


Sept Chopper 48 w/ HWC
6.2 ft ave



Sept Chopper 48 w/o HWC
4.7 ft ave

3rd year Height Differences at the Scalped Laurens Co Site



Scalp only (L) vs May Oustar (Rt)



April Oustar (L) vs May Arsenal (Rt)



Pre- and Post Plant Summary – To Maximize Planted Pine Survival and Growth

- Control woody competition (shrubs, hardwoods, volunteer pines) – pre-plant during site preparation = the use of herbicides for long-term control
- Do 1st yr post-plant herbaceous weed control (HWC)



After the Establishment Phase

(with landowner objectives in mind)

- Some stands may be prepped for pine straw mowing between rows at age 3-, 6-, & 9-yrs old and herbicide at age 7- or 10-yrs old
- Other stands will be thinned – need at least 1/3 live crown and preferably 40% live crown (60 ft tall tree with 24 ft of live crown) – usually trees need to be at least 50 ft tall for 1st thin (age 12- on best sites to age 20-yrs on poorest sites) – thin every 5-10 yrs
- Goal with thinning is to move best trees (no visible defects and the tallest, largest diameter trees in the stand) to higher valued products - pulpwood (\$12/ton) → chip-n-saw (\$21/ton) → sawtimber (\$26/ton) → poles (\$41/ton, TM-S 3rd qtr GA state ave)



Effect of Thinning, then Fertilization (using biosolids) on Loblolly Pine Tree Growth



15 Oct 2021 Fertilizer prices Dublin GA

- DAP (18-46-0) \$700/ton (.35/lb)
- Urea (46-0-0) \$875/ton (.438/lb)
- MOP (0-0-60) \$800/ton (.40/lb)
- + \$0.13/lb to apply

- At planting 125 lbs DAP/ac = \$43.75 + \$16.25 to apply = \$60.00ac (can afford)

- Lob mid-rotation 385 urea+125 DAP = \$168 urea + \$43.75 DAP + \$66 to apply = \$278/ac (can not afford)

P-fertilization at Planting

- For poorly to very poorly drained soils of the Atlantic Coastal Plain
- Response increases with increase in clay content and decrease in depth to argillic (Bt)
- Response is long lasting (15-20 yrs)





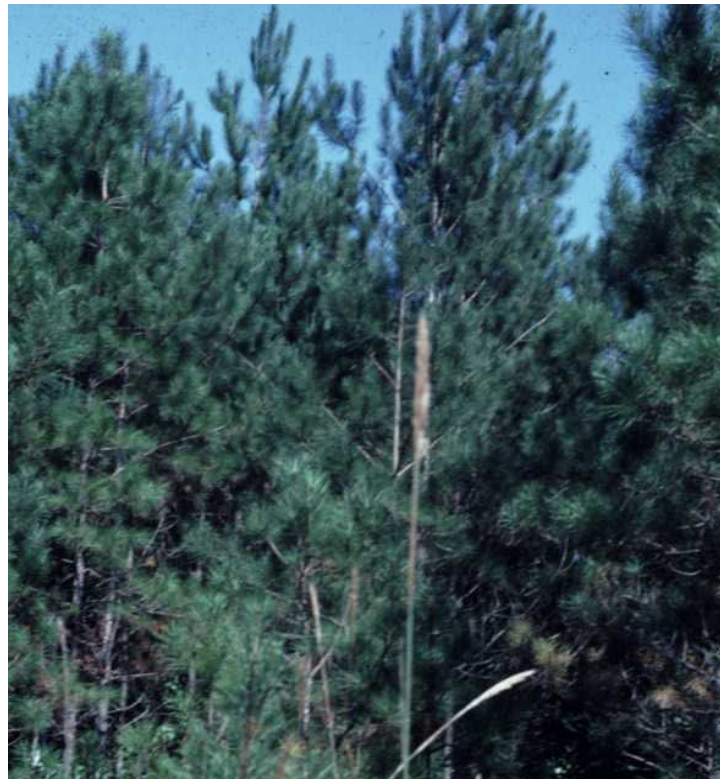
P-fertilization @ planting on poorly drained flatwood P-deficient soils

Loblolly pine @ age 16-years on a very poorly drained Bladen soil in Berkeley County, SC

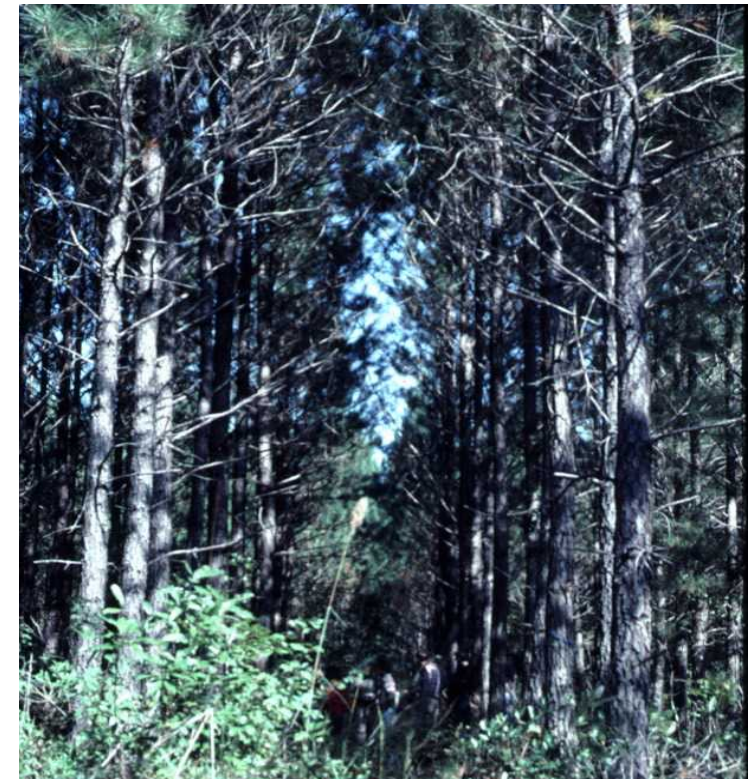
Control



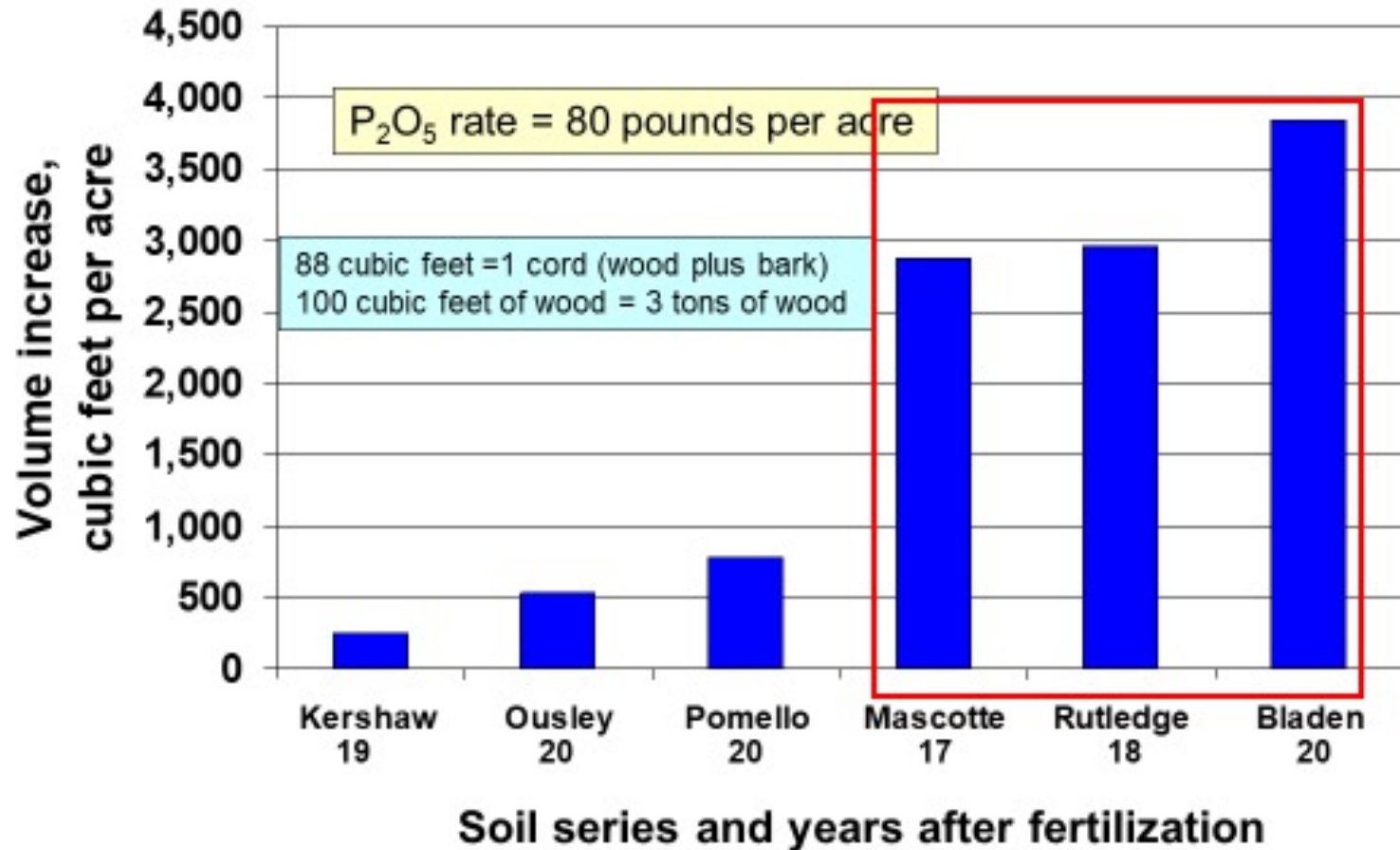
P @ 400 TSP/ac



Bed + P



Phosphorus Fertilization at Planting Increases Volume Growth of Slash Pine

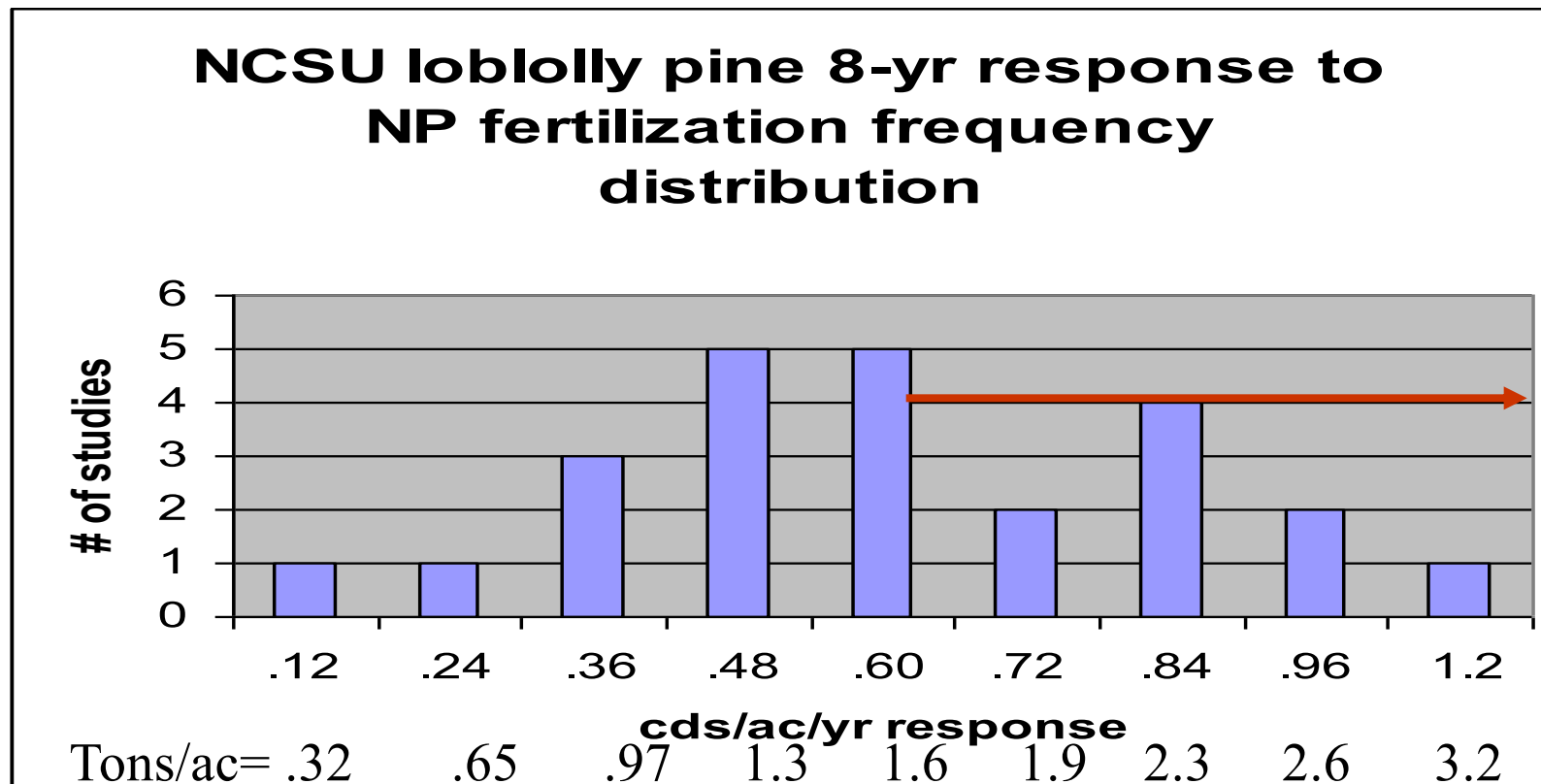


Source: Pritchett & Comerford. 1982. U. of Florida

Low P soils

Fertilization does not always pay off

with 2020 fertilizer prices generally need to grow at least 0.60 cd/(1.6 tons) ac/yr for 8 yrs to make a decent return with fall 2021 prices can NOT afford mid-rotation fertilization



10 of 24 studies had < 0.6 cd (1.6 tons) /ac/yr (13 tons in 8 yrs) extra wood produced

Selling Each Tree to it's Highest Value & get Multiple Offers

The photo is a 30-yr old well managed, thinned loblolly

- Using a consultant, 6 offers were made (clearcut - lump sum sale) with the low bid being 20% less than the high bid (\$23k)
- The stand had over 30% poles (\$45 vs \$26/ton which improved the value/acre by \$460 on 50 acres)



Questions ?

Longleaf pine herbaceous weed control study timing effect (6 YAP)
the timing effect in a very droughty April-May into early June first growing
season (2000)



April 2000

Oust +Velpar L



May 2000

Oustar @ 13 oz



GEORGIA LANDOWNER SUMMIT

DEC. 17, 2021 – JEKYLL ISLAND, GA



TITLE SPONSOR

FARM CREDIT

ASSOCIATIONS OF GEORGIA