

FOREST RESOURCE MANAGEMENT PLAN

FOR
R.L. RAY LTD

POPE TRACT

59.5 ACRES

I. KENDRICK SURVEY, A-29
CHEROKEE COUNTY, TEXAS

PREPARED BY:



Forest Resource Management Division

JUNE 12, 2015



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Vice President
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Jacksonville, Texas 75766
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June 12, 2015

Mr. John D. Hills
R. L. RAY, LTD.
P. O. Box 689
Tyler, Texas 75710

RE: FOREST MANAGEMENT OBSERVATIONS & RECOMMENDATIONS
POPE TRACT, 59.5 ACRES, I. KENDRICK SURVEY A-29,
CHEROKEE COUNTY, TEXAS

Dear Mr. Hills:

Thank you for allowing us to inspect the above referenced tract and prepare forest management observations and recommendations for the timber on the above referenced tract.

You have indicated to me that your objectives for this tract are to maintain sustainable wood and fiber production, while promoting good forest health, soil and water quality. Our inspection of the tract did not reveal any special sites, or high conservation value forest areas. We did not observe any pest or disease outbreaks on the tract.

The tract is located southeast of Troup Texas, with excellent access to F.M.2274 and is geographically in a good, competitive, long-term timber market area.

Enclosed is an aerial photo of the tract, which is natural color, taken in Jan-Feb of 2009, with the hardwood leaves off, allowing the pine to be depicted in green and the hardwood as gray. Also enclosed is a 2014 aerial taken during the summer, in natural color and with the hardwood leaves on.

Also enclosed is a soils map, the soil composition of the majority of the tract is suitable for pine and hardwood timber production. These soils are all fine sandy loam and clay with a Site Index (S.I.) range for loblolly pine between 80 and 90. This is at or above the county average.

Site Index (S. I.) is a term that indicates the ability of the soil of a site to produce wood fiber within a given life span. It is expressed as the total height of a tree at fifty years of age, the higher the S. I. the more productive the soil. A tract with an average of 70 S.I. for loblolly pine, or better, has the capability for producing pine at an average growth rate of 10%-15% per year for a 35 year period, which is the suggested rotation age of 35 years for loblolly pine.

The tract is composed of an excellent stocking of planted loblolly pine, approximately 17-18 years of age. The pine is starting to stagnates and is in need of an improvement thinning

Mr. John D. Hills

R. L. RAY, LTD.

FOREST MANAGEMENT OBSERVATIONS & RECOMMENDATIONS

POPE TRACT, 59.5 ACRES, I. KENDRICK SURVEY A-29, CHEROKEE COUNTY, TEXAS

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As pine plantations approach 11 to 15 years of age, they become stagnated and in need of thinning, removing the forked, suppressed, diseased and inferior trees, leaving the better quality, growing timber for future growth and sales. These stands would require subsequent thinning every 5-7 years thereafter to age 35.

We recommend removing no more than every fifth row, lightly thinning the rows in between to a basal area of between 80 to 100 square feet per acre. The basal area (BA) of a tree is the cross-sectional area of the trunk 4 1/2 feet above the ground, or the per acre sum of the basal areas of the trees on an acre and is used as a measure of forest density.

Ideally, you would want to remove only the suppressed and inferior trees and leave all the dominant superior trees which will become sawlogs. However, the logging equipment necessitates creating lanes through the stand to allow equipment to harvest and remove the trees. Utilizing the rows the trees were planted in works well for these lanes. We call these access lanes "down rows".

Contained within these down rows are both dominant and suppressed trees. Keeping the number of lanes, or "down rows" to as few as possible is important, so as not to remove too many dominant future sawlog trees. In order to relieve the stagnation completely and keep the "down rows" to a minimum, the suppressed trees in the remaining residual rows also need to be removed.

It is important to note that there is not a one-to-one relationship with number of trees to volume of wood. We recommend removing every fifth row, or establishing a lane approximately every 60 feet, and then removing only the suppressed and inferior trees in the remaining rows. This removes up to one-half of the trees in a first thinning, but only 25-30% of the volume, simply because you are removing the smaller suppressed trees in the residual rows.

Thinning by removing every third row only and no other thinning is still too much even though you are only removing 33% of the trees. That 33% could contain as much as 50% of the volume, due to the amount of large dominant trees in those rows. Thinning by removing every other row is devastating to the future sawlog production of the stand.

All plantations develop differently, depending on site, competition and many other factors. The best way to be sure you do not thin your stand too heavily during the first thinning is to take basal area samples of the stand prior to thinning.

An estimated harvesting and projected income schedule for this pine plantation would be as follows:

<u>OPERATION</u>	<u>DATE</u>	<u>EST. INCOME/ACRE</u>
First Thinning	2015	\$ 100.00
Thinning	2020	\$ 250.00
Thinning	2025	\$ 750.00
Thinning	2030	\$1,000.00
<u>FINAL HARVEST</u>	<u>2035</u>	<u>\$1,500.00</u>
<u>TOTAL PER ACRE ESTIMATED INCOME</u>		<u>\$3,600.00</u>

Mr. John D. Hills
R. L. RAY, LTD.

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TOTAL ESTIMATED 20-YEAR INCOME FOR THE 59 ACRES \$212,400.00

Areas along drains or creeks are called Streamside Management Zones, or SMZ's. SMZ's are forest management areas adjacent to stream channels. These areas should be managed with specific attention given to downstream water quality and beneficial uses. The purpose of SMZ's is to reduce the quantity of sediment and logging waste reaching the streams and to prevent water temperature increases. Minimum width for SMZ's is 50 feet either side of the stream channel. However, it is important that SMZ's be left consistent with stream characteristics and wide enough to protect water quality.

HARVEST RECOMMENDATIONS:

Improvement thinning requires that the poorer quality timber be removed from the tract without damaging or destroying the residual timber.

An improvement thinning utilizes a "cutter select" method of harvest, with payment on a "per-ton" basis. This plantation will need to be harvested by a logging contractor that knows how to remove the designated trees, without damaging the residual timber. We will direct and supervise the contractor during the harvest, to ensure that the desired trees are removed.

A per ton or a "pay-as-cut" basis, means that you are paid weekly as the timber is removed from the tract, by the ton and by product type. Scale tickets and checks would come to our office every week, reflecting the proceeds for that week. Our office would then review the tickets for accuracy and forward on to you a summary of the operation. Our job as consultants would be overseeing the entire operation from start to finish, protecting your interests.

Our services for the timber sale as described above would be:

1. Designate the timber to be harvested,
2. Solicit bids from reputable, prospective buyers in East Texas, Oklahoma, Louisiana and Arkansas; which meet all technical guidelines as well as worker's compensation and liability insurance requirements;
3. Negotiate timber-cutting contract for your approval,
4. Inspect logging operations periodically to insure contract violations do not occur. If for some reason violations do occur, I will assess damages and restitution and,
5. Perform a final inspection, advising you to release or not to release the company from the contract.

Mr. John D. Hills
R. L. RAY, LTD.

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Our fee for such services would be 10% of the gross, payable when consideration is made to the landowner. As with any logging operation, special care will be taken around creeks to avoid creating any erosion problems. Also, any large, beautiful or unusual hardwoods would be exempt from any sale.

We recommend soliciting bids as soon as possible for the recommended sales, as timber prices are good and to let the stagnated stands respond to thinning this summer.

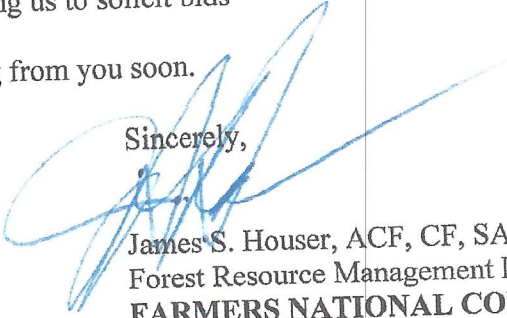
We will also submit this tract to be Certified Tree Farm, with the American Tree Farm System.

This concludes our report. I again thank you for your time and consideration in this matter, and for this opportunity to serve you.. If you have any questions, or wish to meet to discuss, in detail, these recommendations, please do not hesitate to call.

Otherwise, if you wish us to start the timber sale process as described above, please sign and return the enclosed copy of this letter authorizing us to solicit bids

We look forward to hearing from you soon.

Sincerely,


James S. Houser, ACF, CF, SAF, Vice President
Forest Resource Management Division
FARMERS NATIONAL COMPANY

JSH/ba
Enclosures

I agree to the aforementioned fees and services.

SIGNED: _____
JOHN D. HILLS FOR R.L. RAY LTD.

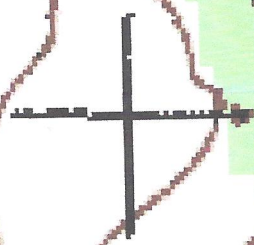
DATE: _____

2274

R.L. RAY LTD (POPE) TRACT
59.5 ACRES

F.M. 2274

38



J. KENDRICK SURVEY, A-29
CHEROKEE COUNTY, TEXAS

FOREST RESOURCE MANAGEMENT DIVISION
JACKSONVILLE, TEXAS

USGS TOPO

TYLER CD, GRIFFIN QUAD

CHEBOKEE COUNTY

32.041515, -95.038048

FNC-FRMD-(6-15)-JH

JHouser@farmersnational.com

903-586-9375



2009 AERIAL

**R.L. RAY LTD (POPE) TRACT
59.5 ACRES**

F.M. 2274



I. KENDRICK SURVEY, A-29
CHEROKEE COUNTY, TEXAS



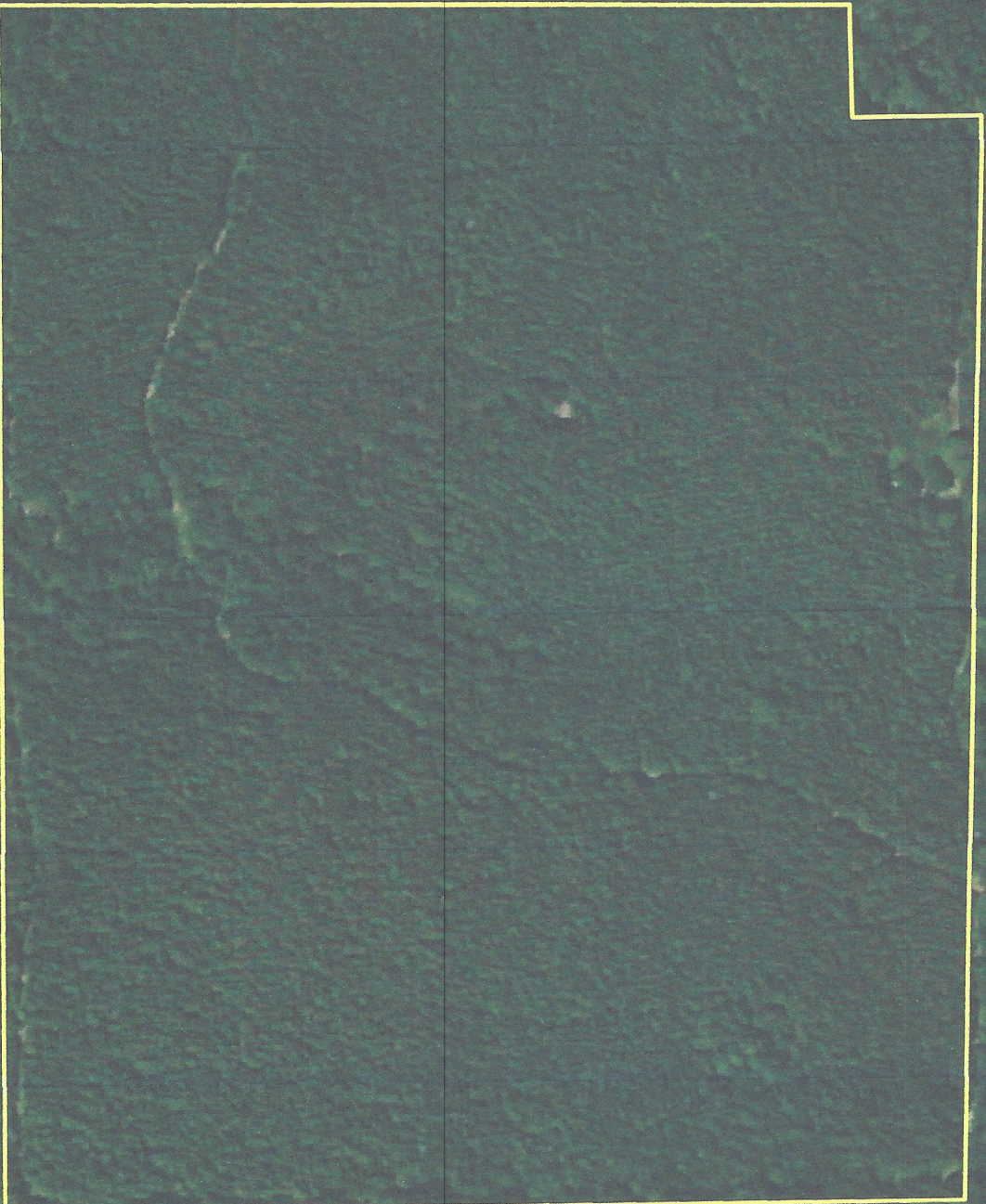
FOREST RESOURCE MANAGEMENT DIVISION

JACKSONVILLE, TEXAS
2009 JAN-FEB AERIAL PHOTO
LEAF OFF, NATURAL COLOR
CHEROKEE COUNTY
32.041515, 95.036040
FNC-FRMD-06-15-JH
JHouser@farmersna.com
903-586-9375

R.L. RAY LTD (POPE) TRACT 59.5 ACRES

F.M. 2274

2014 AERIAL



I. KENDRICK SURVEY, A-29
CHEROKEE COUNTY, TEXAS



FOREST RESOURCE MANAGEMENT DIVISION

JACKSONVILLE, TEXAS

2014 SUMMER AERIAL PHOTO

LEAF-ON, NATURAL COLOR

CHEROKEE COUNTY

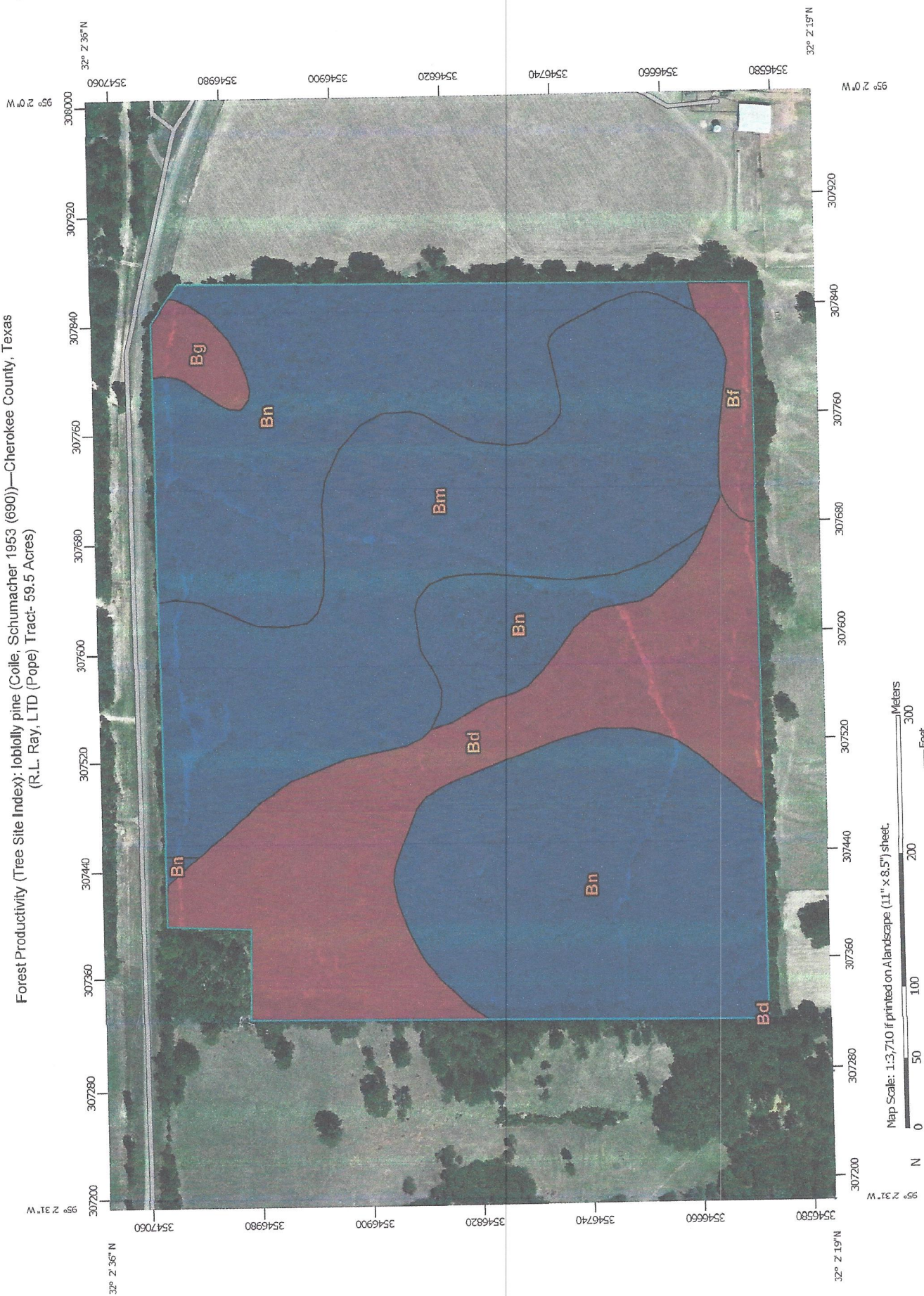
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FNC-FRMD-(6-13)-041

JHouser@farmersnational.com

903-586-9375

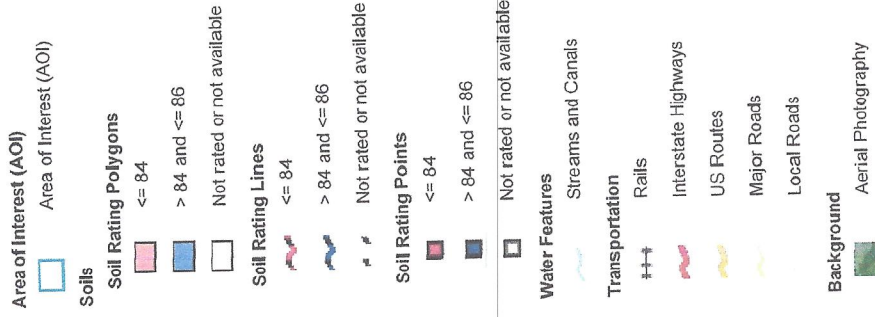
Forest Productivity (Tree Site Index): loblolly pine (Coile, Schumacher 1953 (690))—Cherokee County, Texas
(R.L. Ray, LTD (Pope) Tract- 59.5 Acres)



Map Scale: 1:3,710 if printed on a landscape (11" x 8.5") sheet.

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 15N WGS84

MAP LEGEND



MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
 Web Soil Survey URL: <http://websoilsurvey.nrcs.usda.gov>
 Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Cherokee County, Texas
 Survey Area Data: Version 12, Sep 29, 2014

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: May 15, 2011—May 26, 2011

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Forest Productivity (Tree Site Index): loblolly pine (Coile, Schumacher 1953 (690))

Forest Productivity (Tree Site Index): loblolly pine (Coile, Schumacher 1953 (690))— Summary by Map Unit — Cherokee County, Texas (TX073)				
Map unit symbol	Map unit name	Rating (feet)	Acres in AOI	Percent of AOI
Bd	Sacul fine sandy loam, sloping	84	12.3	21.5%
Bf	Sacul fine sandy loam, strongly sloping	84	1.1	2.0%
Bg	Sacul fine sandy loam, strongly sloping, eroded	84	0.9	1.6%
Bm	Bowie fine sandy loam, gently sloping	86	16.7	29.1%
Bn	Bowie fine sandy loam, sloping	86	26.2	45.9%
Totals for Area of Interest			57.2	100.0%

Description

The "site index" is the average height, in feet, that dominant and codominant trees of a given species attain in a specified number of years. The site index applies to fully stocked, even-aged, unmanaged stands.

This attribute is actually recorded as three separate values in the database. A low value and a high value indicate the range of this attribute for the soil component. A "representative" value indicates the expected value of this attribute for the component. For this attribute, only the representative value is used.

Rating Options

Units of Measure: feet

Tree: loblolly pine

Site Index Base: Coile, Schumacher 1953 (690)

Aggregation Method: Dominant Component

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

Interpret Nulls as Zero: No