

South Carolina 2 CROP

A Summary of CROP Landscape Analyses Results

Presented by

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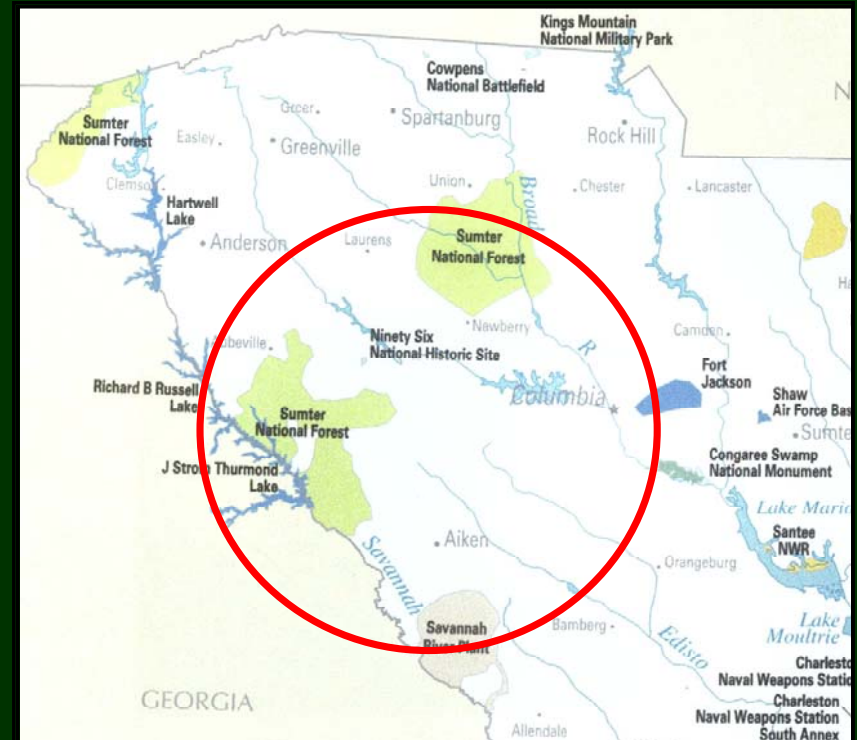
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South Carolina 2 CROP:

Center Point: Saluda
50-mi. radius

- 1 National Forest
- SC DNR
- Charleston Air Force Base
- Savannah River



National Forest:

- **Sumter NF:** 2 ranger districts:
Long Cane RD
Enoree RD

What was asked for (5-yr. period):

- *Volume:* (by mmbf; green/dry tons; ccf) w/conversions
- *Diameter sizes:* <4” >4”-7” >7”-9” >9”-12” >12”
- *Species:* (6 species evaluated for resource flow)
- *Harvest “type”:* timber sales, PW-T, biomass, thinning, etc.
- *Location* of resource offering
- *NEPA phase* for each resource offering (Federal lands only)
- *Road accessibility* for each resource offering (Federal lands only)

**So, let's take a look at
the final results . . .**

Overall:

Year	Total Biomass (354,000 gT)	% of 5-yr volume
2006	69,960	20%
2007	69,960	20%
2008	71,160	20%
2009	71,160	20%
2010	71,760	20%

Total Small Log (102.125 mmbf)	% of 5-yr volume
19.825	19%
20.125	20%
20.325	20%
20.725	20%
21.125	21%

Total Large Log (194.861 mmbf)	% of 5-yr volume
31.619	16%
34.097	18%
38.415	20%
43.115	22%
47.615	24%

Biomass = 17%
(up to 7" dbh)

Small Logs = 29%
(>7" – 12" dbh)

Large Logs = 55%
(>12" dbh)

Who's providing what?

Agency	5-yr total <i>Biomass (gT)</i>	5-yr total <i>Small Log (mmbf)</i>	5-yr total <i>Large Log (mmbf)</i>	% of 5-yr total
Sumter NF	175,200	48.5	101.7	50%
Savannah River	178,800	53.625	91.575	49%
SC DNR	0	0	1.089	<1%
Charleston AFB *located in North, SC	0	0	.496	<1%

Sumter NF: (gT= 175,200; Small log = 48.5 mmbf; Large log = 101.7 mmbf)

Ranger Districts	5-yr total (Biomass = gT)	5-yr total Small log (mmbf)	5-yr total Large log (mmbf)
Long Cane	79,800	20.9	60.7
Enoree	95,400	27.6	41

Counties:

- ✓ **19 counties contacted, 95% (18) either have no forestlands or do not plan any removal in the next 5 years.**
- ✓ **Only Newberry county has removal plans in discussion, but no data in county is currently available.**

<i>By Species</i>	5-yr total (Biomass = gT)	5-yr total Small log (mmbf)	5-yr total Large log (mmbf)
Loblolly pine (76% of 5-yr. total)	266,528	74.491	150.918
Longleaf pine (12% of 5-yr. total)	41,512	12.269	21.925
Slash pine (9% of 5-yr. total)	33,210	9.815	17.54
Gum species (2% of 5-yr. total)	5,100	2.62	1.95
Oak species (1% of 5-yr. total)	5,100	1.82	1.622
Hardwoods (1% of 5-yr. total)	2,550	1.11	.906

Okay picture for potential small log processing with 29% of total 5-yr volume in small log strata @ ~20 mmbf/yr. Largest percentage of small log volume (42%) is projected to be in the >9"-12" log strata where highest grade of lumber is obtained.

(% of total volume)	4"-7"	>7"-9"	>9"-12"	<4"
<i>Loblolly Pine</i>	13%	10%	17%	3%
<i>Longleaf Pine</i>	17%	9%	21%	0%
<i>Slash Pine</i>	17%	9%	21%	0%
<i>Gum Species</i>	16%	27%	21%	0%
<i>Oak Species</i>	20%	25%	18%	0%
<i>Hardwoods</i>	0%	14%	14%	0%

Resource Offering Maps (ROMS):

Here's what you get for each species . . .

- ✓ Who will supply?
- ✓ When will supply be offered?
- ✓ How much will be offered?
- ✓ What diameter size will it be offered in?
- ✓ Will supply be consistent and levelized over time to invite purchase and investment?

For each species:

- ✓ **Locator map** per specific supplier
- ✓ **Summary sheet**
- ✓ **Detailed supply breakouts** by volume, diameter, and year per supplier

*Let's look at Loblolly Pine
as an example . . .*

South Carolina 2 CROP

South Carolina 2: Loblolly Pine CROP offering '06 – '10
(gT = 266,527 / S = 74.49 mmbf / L = 150.92 mmbf)

ROM # LLP 1.1

LLP = loblolly pine

Locator map

Charleston AFB:

A *Charleston AFB (aux.)**

SC DNR:

B *SC DNR*

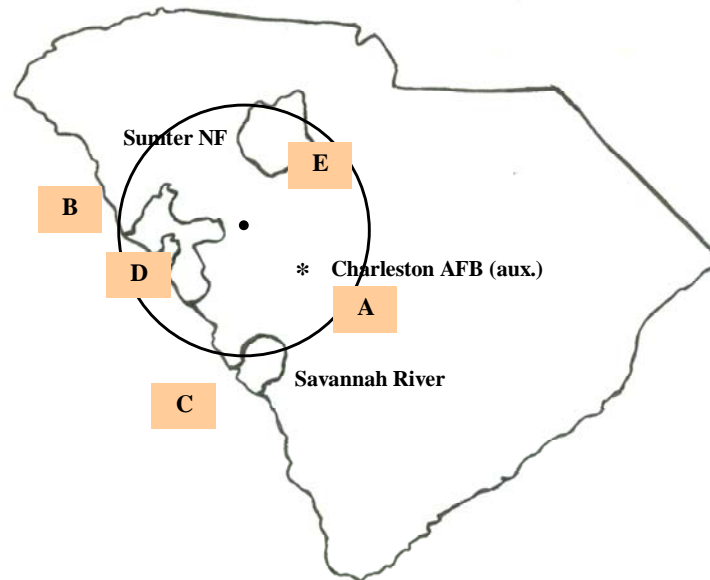
Savannah River:

C *Savannah River*

Sumter NF:

D *Long Cane RD*

E *Enoree RD*



*located in North, SC

**italics/bold = species offering in CROP

Summary Sheet

South Carolina 2 CROP

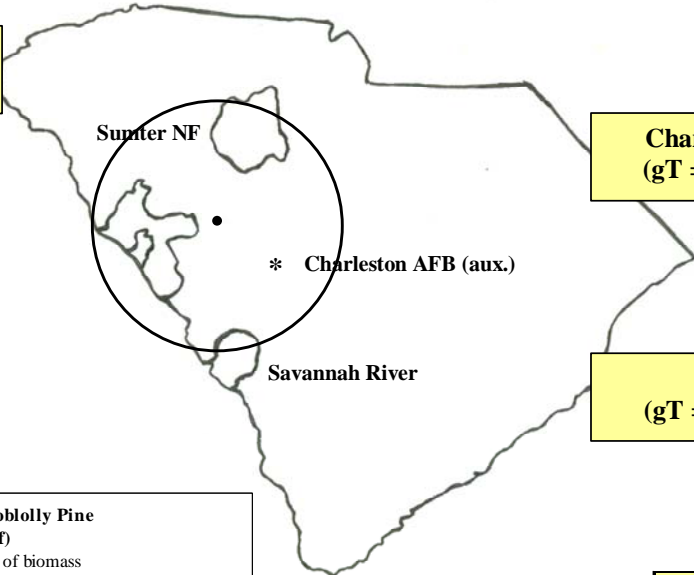
South Carolina 2: Loblolly Pine CROP offering '06 - '10
 (gT = 266,527 / S = 74.49 mmbf / L = 150.92 mmbf)

ROM # LLP 1

gT = green tons (up to 7" dbh)
 S = small log mmbf (>7"-12" dbh)
 L = large log mmbf (>12" dbh)

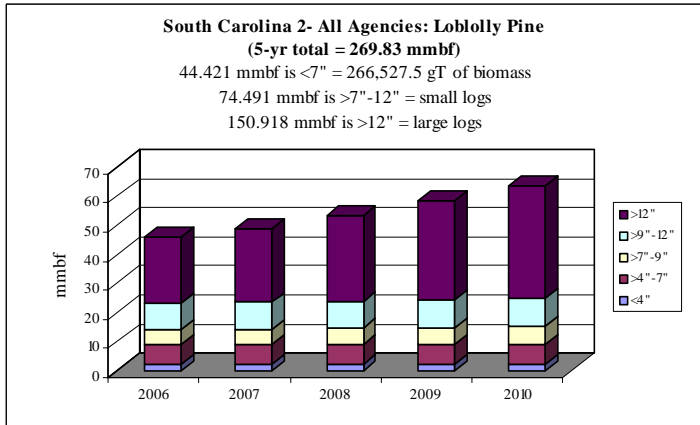
Sumter NF: 2 RDs - 66%
 (gT = 175,200 / S = 47.5 / L = 101.2)

SC DNR: - <1%
 (gT = 0 / S = 0 / L = 1.089)



Charleston AFB: - <1%
 (gT = 0 / S = 0 / L = .393)

Savannah River: - 34%
 (gT = 91,327 / S = 26.99 / L = 48.235)



	gT	mmbf	
	Biomass	Small Log	Large Log
2006	52465.5	14.29825	22.82257129
2007	52465.5	14.59825	25.25414286
2008	53665.5	14.79825	29.647
2009	53665.5	15.19825	34.347
2010	54265.5	15.59825	38.847
Totals	266527.5	74.49125	150.9177141
%	16%	28%	56%
mmbf	44.42125		

269.8302141

South Carolina 2: Loblolly Pine CROP offering '06 – '10
(by agency)

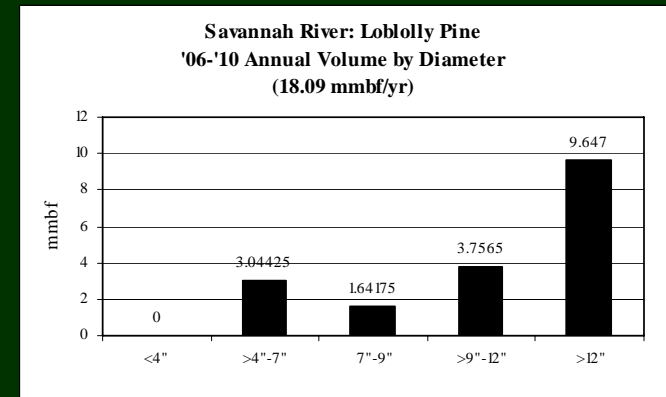
ROM #LLP 1.4

Detailed Breakout by Supplier

gT = green tons (up to 7" dbh)
S = small log mmbf (>7"-12" dbh)
L = large log mmbf (>12" dbh)

Loblolly Pine Savannah River	5-yr = 90.45 mmbf; 18.09 mmbf/yr
	<ul style="list-style-type: none"> Level supply from year to year
gT = 91,327	<ul style="list-style-type: none"> <4" = 0% (0 mmbf) >4"-7" = 17% (15.221 mmbf)
S = 26.991	<ul style="list-style-type: none"> >7"-9" = 9% (8.209 mmbf) >9"-12" = 21% (18.782 mmbf)
L = 48.235	<ul style="list-style-type: none"> >12" = 53% (48.235 mmbf)

'06 - '10



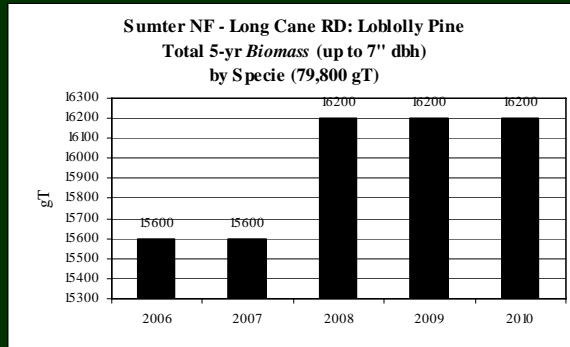
SO . . . with CROP, we're able to look at:

- performance between different public agencies to identify needed coordination of supply; and
- performance between ranger districts in a single NF to see where coordination of supply offering might be needed.

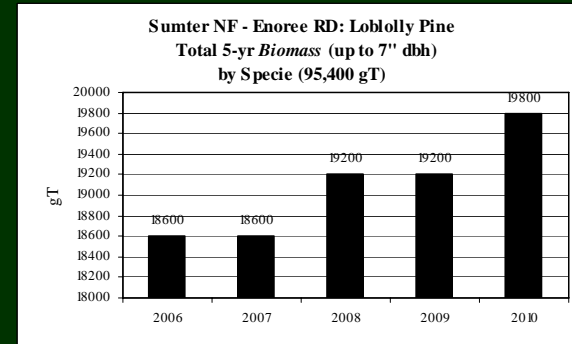
Let's take a look ...

Loblolly Pine: Sumter NF – 2 RDs *biomass offerings* (% of NF offering)

Long Cane RD – 46%



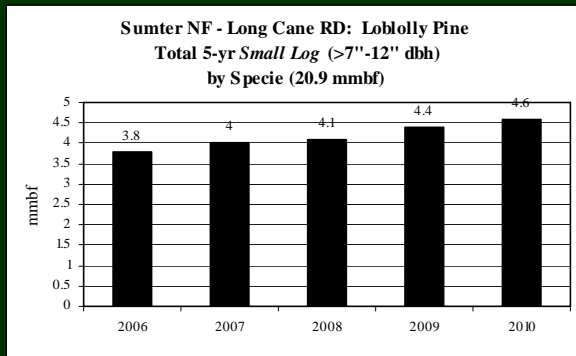
Enoree RD – 54%



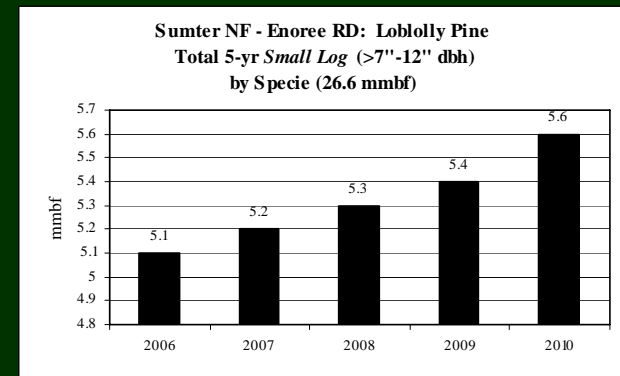
**Fairly levelized supply
in both RDs**

Loblolly Pine: Sumter NF – 2 RDs small log offerings (% of NF offering)

Long Cane RD – 44%



Enoree RD – 56%

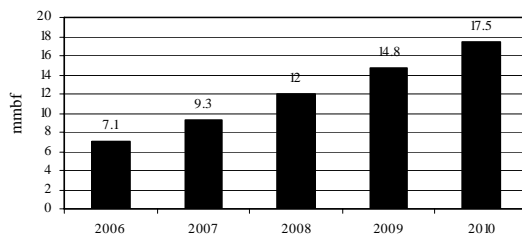


**Again, fairly leveled
supply in both RDs**

Loblolly Pine: Sumter NF – 2 RDs large log offerings (% of NF offering)

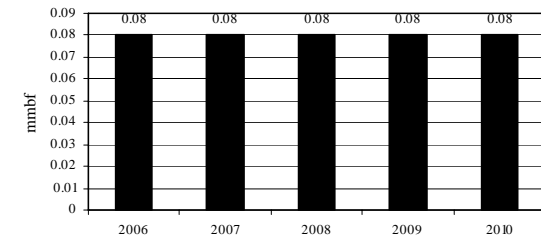
Long Cane RD – 60%

Sumter NF - Long Cane RD: Loblolly Pine
Total 5-yr Large Log (>12" dbh)
by Specie (60.9 mmbf)



Enoree RD – 40%

Sumter NF - Enoree RD: Loblolly Pine
Total 5-yr Large Log (>12" dbh)
by Specie (40.5 mmbf)



Level supply in one RD, but unlevelized supply from the RD providing the lion's share of the Sumter NF 5-yr supply.

Let's look at species Summary Sheets for the other top South Carolina 2 CROP species . . .

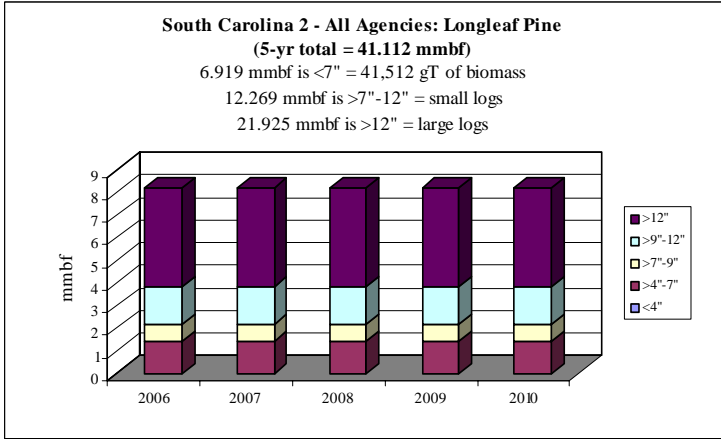
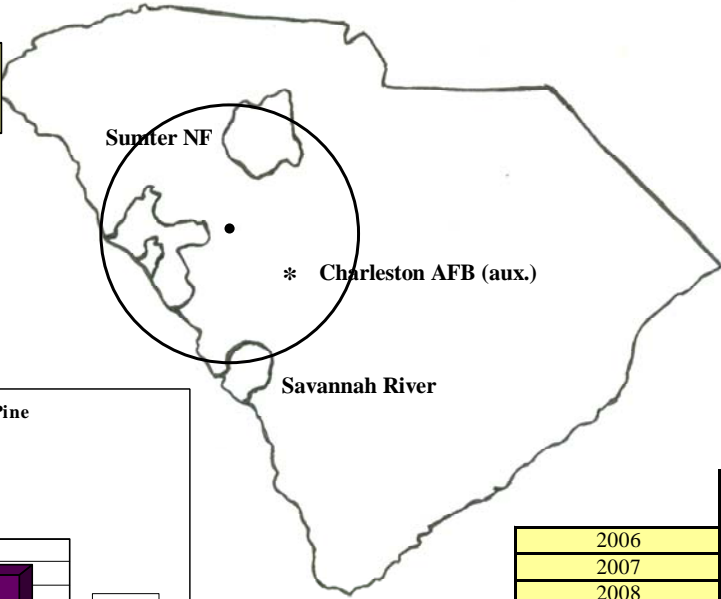
South Carolina 2 CROP

South Carolina 2: Longleaf Pine CROP covering '06 - '10
 (gT = 41,512.5 / S = 12.269 mmbf / L = 21.925 mmbf)

ROM # L. Leaf.1

gT = green tons (up to 7" dbh)
 S = small log mmbf (>7"-12" dbh)
 L = large log mmbf (>12" dbh)

Savannah River - 100%
 (gT = 41,512.5 / S = 12.269 / L = 21.925)



	gT	mmbf	
	Biomass	Small Log	Large Log
2006	8302.5	2.45375	4.385
2007	8302.5	2.45375	4.385
2008	8302.5	2.45375	4.385
2009	8302.5	2.45375	4.385
2010	8302.5	2.45375	4.385
Totals	41512.5	12.26875	21.925
%	17%	30%	53%
mmbf	6.91875		

41.1125

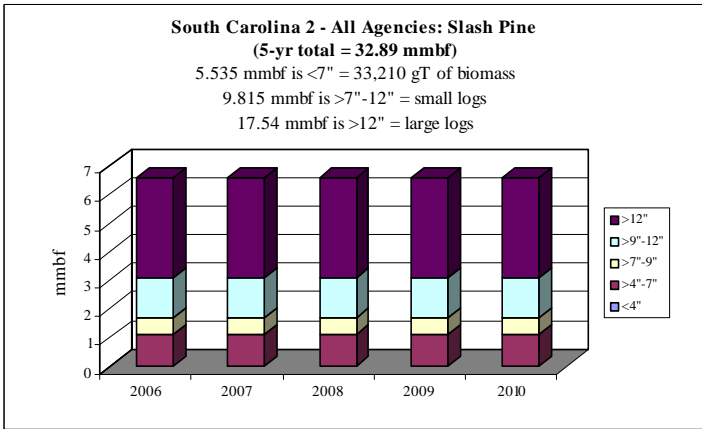
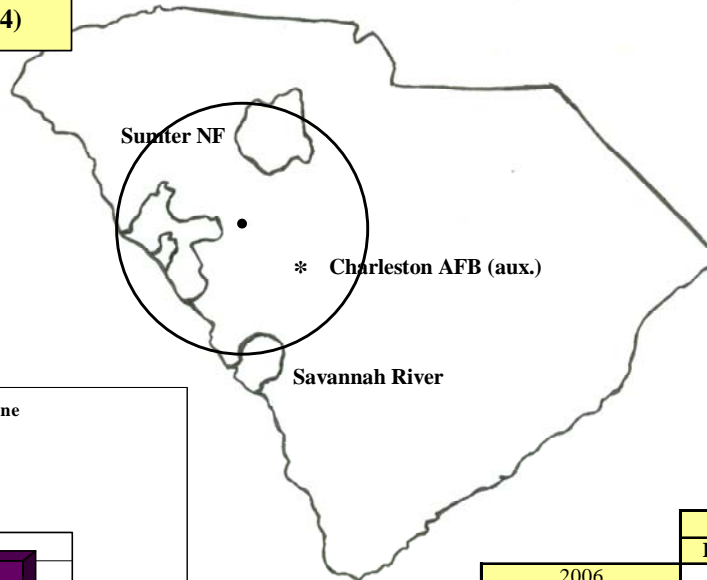
South Carolina 2 CROP

South Carolina 2: Slash Pine CROP offering '06 - '10
 (gT = 33,210 / S = 9.815 mmbf / L = 17.54 mmbf)

ROM # Slash P 1

gT = green tons (up to 7" dbh)
 S = small log mmbf (>7"-12" dbh)
 L = large log mmbf (>12" dbh)

Savannah River: 100%
 (gT = 33,210 / S = 9.815 / L = 17.54)



	gT	mmbf	
	Biomass	Small Log	Large Log
2006	6642	1.963	3.508
2007	6642	1.963	3.508
2008	6642	1.963	3.508
2009	6642	1.963	3.508
2010	6642	1.963	3.508
Totals	33210	9.815	17.54
%	17%	30%	53%
mmbf	5.535		

32.89



How levelized will the supply be for all species?

Let's take a look . . .

Levelized supply for five years?

	gT Biomass		Small Logs		Large Logs	
	yes	no	yes	no	yes	no
<i>Loblolly Pine</i>	✓		✓			✓
<i>Longleaf Pine</i>	✓		✓		✓	
<i>Slash Pine</i>	✓		✓		✓	
<i>Gum Species</i>	✓		✓		✓	
<i>Oak Species</i>	✓		✓		✓	
<i>Other Hardwoods</i>	✓		✓		✓	

Looking at the Loblolly Pine . . .

- ✓ There will be a levelized supply of green tonnage biomass that will impact 75% of the total biomass volume in the CROP landscape over the next 5 years.
- ✓ There will be an levelized supply of small logs in this specie that will impact ~73% of the total CROP small log supply. However, total CROP volume of ~20 mmbf/yr is too small to construct a new small log mill. May be sufficient to consider adding small log line to an existing mill.
- ✓ There will be an unlevel, but growing, supply of large logs in this specie that comprises 77% of the total 5-yr CROP volume. Supply will be growing by ~3 mmbf/yr over the next 5-years.

Here's how it looks on an agency-by-agency basis . . .

Levelized Annual Supply?

(Total 5-yr volume)

Not a bad picture, but might consider leveling out large log supply by offering more volume in earlier years.

Y = yes
N = no
R = relatively

		<u>Loblolly Pine</u> (269.83 mmbf; includes gT)		
		Biomass	Small log	Large log
<i>Sumter NF</i>	(50% of 5-yr vol.)			
	• Long Cane RD	Y	Y	N
	• Enoree RD	Y	Y	N
<i>Savannah River</i>	(49% of 5-yr vol.)	Y	Y	Y
<i>SC DNR</i>	(<1% of 5-yr vol.)	–	–	N
<i>Charleston AFB</i>	(<1% of 5-yr vol.)	–	–	N

What about NEPA?
It's important to know!

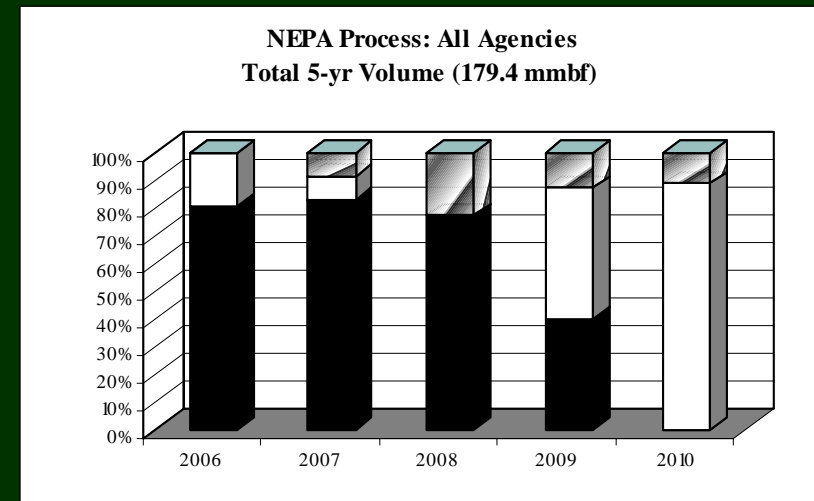
... here's how it looks

NEPA Picture for CROP Landscape

Only Sumter NF has NEPA lands:
 100% of 5-yr total = (179.4 mmbf; includes gT as mmbf)



	<i>mmbf</i>	<i>% of total</i>
<i>Approved</i>	90.7	51%
<i>In process</i>	67.6	38%
<i>Just started</i>	21.1	12%
<i>Not started</i>	0	0%



Over 89% of Sumter NF CROP resource offering either NEPA approved or in-process!



. . . story best told on agency-by-agency basis.

NEPA Risk Rating

1 Lowest	2 Low	3 Medium	4 <i>High</i>	5 <i>Highest</i>
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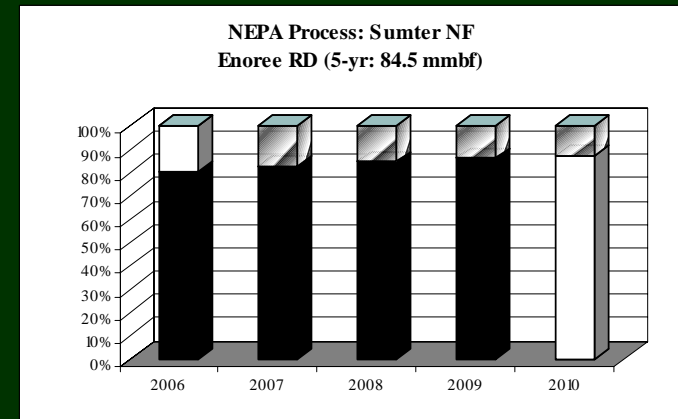
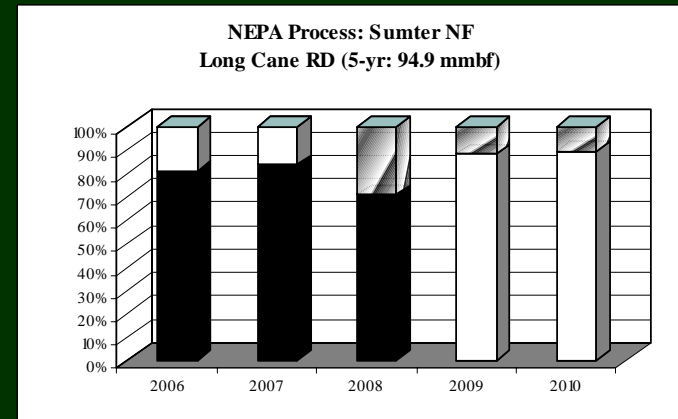
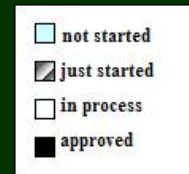
For low risk rating, 3 key desired attributes:

- ✓ Volume *approved* in first 2 years, followed by *in-process*.
- ✓ Consistency in supply; no dramatic gaps from year to year (eg: *approved/not started/in-process*).
- ✓ Overall – no major emphasis on *just started* or *not started*.

South Carolina 2 CROP

NEPA Risk Rating Summary:

Sumter NF	Total 5-yr volume	NEPA Risk Rating
Long Cane RD	94.9 mmbf	Low
Enoree RD	84.5 mmbf	Lowest



What about road access to supply? *No problems here . . .*

Agency	5-yr total volume	Affected by No Current Road Access
	mmbf	% of total volume with no road access
Sumter NF	179.4	0%
Savannah River	175	0%
SC DNR	1.089	0%
Charleston AFB	.496	0%
Total	355.986	0%



What about private lands?

Here's a snapshot:

- ✓ Data received for 1986, 1993, & 2001
- ✓ Softwood species includes *loblolly, longleaf, shortleaf, & others*
- ✓ Hardwood species includes *sweetgum & yellow poplar*
- ✓ Average annual volume = ~894 mmbf with 91% softwood & 9% hardwoods
- ✓ ~45% of annual volume <12"; 55% is >12"

Conclusions for South Carolina 2 CROP . . .

➤ Public forestlands to be a much more significant supply partner in the CROP landscape during the next five years. Normally, volume from public lands is 20x less than that off private forestlands. Assuming average annual volume from private forestlands stays the same per year as in prior years, volume from public lands will be only 12x less than that off private lands.

➤ There is potential investment opportunity in new small log processing with ~20 mmbf/yr of small log supply coming on board on a levelized basis.

. . . but . . .

➤ Biomass (7" and less) volume offering low compared to other CROP landscapes across the US. Investor interest would likely seek public-private partnership for biomass supply to consider manufacturing investment.

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