


The Values of Bottomland Hardwood Forests for Timber: Management and Marketing Considerations

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Factors in determining viability of timber management

 Logging capability and availability

 Market availability and quality

 Acreage/Volume/Value

 Site Conditions & log truck access

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Logging Capability & Availability

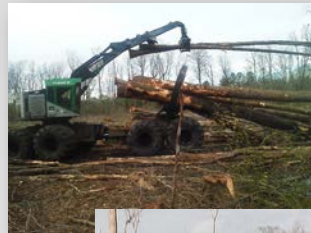
- Traditional timber value prior to modern logging techniques based on individual, large, high quality trees (i.e. cypress). In other words, **high grading**.
- This can and does continue today at times on drier sites
- Results in 2+ age classes; reduces future value AND volume growth
- Tram logging resulted in cleaner cuts, better regen of shade intolerant spp
- Modern high flotation equip. allows for cleaner cuts, but ironically can do more damage due to mechanization (i.e. no hand felling), large tractor size and production needs
- Partial harvests more likely on drier sites with wheeled feller buncher



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Logging Capability & Availability Cont.

- Shovel logging allows only scattered retention, not an option for intermediate harvests
- With proper equipment (i.e. clambunk skidders), skidding distance can reach 2000+ feet
- Only other limitation on clearcut size is log deck availability
- High Flotation crew- dual tires on all wheeled equip., possibly a track cutter
- Shovel crew- track cutter, track loader (shovel), bogie/clambunk skidders
- Expensive- ~\$7-9/ton increase in logging rate; hauling rates increasing rapidly
- Supply of such specialized crews/equipment fluctuates (wet years may encourage such equipment even in uplands)
- Shovel Logging capacity generally declining
 - Scarcity in qualified manpower
 - ALARMING scarcity in trucking force



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Market Availability & Quality

- Location- 90 miles generally maximum distance, unless very high value loads
- Availability of hardwood pulpwood market. Without one, high grading is only option, if terrain will allow it
- Some markets “require” certified wood or “good forestry”
 - Quality- is there a monopoly for that product?
- Quotas
- Mill must be willing to support shovel logging
- Often not a cypress mulch market
- Can’t depend upon fuel chip market



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Acreage vs. Volume vs. Value

Acres are really just an indicator of volume

- Shovel logging- 40 acre minimum for average volume stand
- Dual Tired- 20 acres if no access headaches and logger has other tracts in the area
- No limit if adjoining stand being cut
 - Volume is real threshold
- Shovel logging- 3 loads or 75 tons/acre needed to be operational (need certain stocking to build shovel roads), if not attractive; 4 loads or 100 tons/acre needed to garner buyer engagement
- Dual Tired- 2 loads or 50 tons/acre IF no “headache factor” and short hauls
- No limit if adjoining stand being cut
- 90% of headache factor is access

Bottom line: “Is it worth the move?”

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Logger and Landowner Priorities

Logger Priority: Quantity

Landowner Priority: Quality

- Beauty is in the eye of the beholder
- Weighted Average of 462 acres of GFR administrated sales: (Fair to Decent stocking/quality)
- 113 tons/acre, \$1162/acre
- Range from \$911 to \$1697
- Sawtimber Volume: 26 tons/acre= \$611/acre
- Pulpwood Volume: 78 tons/acre= \$551/acre

Sawtimber Value in Descending Order

Cypress
↓

Oak/Ash/Maple(sometimes)
↓

Poplar
↓

Sweetgum
↓

Tupelo/Blackgum
↓

Misc. HW- Hickory, Elm, etc.-
"crosstie"
↓

Pine (not Pond Pine)

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Bladen Lakes 2017 Case Study

- 6.5 acres in 4 openings
 - 1.6 acres/opening
- Volume: 143 tons/acre
- Value- \$3100/acre
- Hardwood ST - \$2124; 73 tons
- Pine ST- \$529; 19 tons
- Pulpwood- \$442; 50 tons

Percentage of Value by Species Group

■ Cypress	3.9%
■ Green Ash	11.0%
■ Hackberry	8.4%
■ Laurel Oak	0.6%
■ Mixed Hardwood	1.8%
■ Natural Lobloll	18.2%
■ Pignut Hickory	14.8%
■ Southern Red Oak	25.8%
■ Swamp Chestnut	0.2%
■ Sweetgum	3.1%
■ Sycamore	12.3%
Total:	100.0%

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Site Conditions and Log Truck Access

- Red River bottoms- Dual Tired on better drained sites; possibly sloughs as well if drought conditions
- Black River bottoms- Shovel, with slight chance of Dual Tired on higher sites if drought (can't count on that)
- Conventional crew possible if cutting adjoining stands and all stars align (once or twice in a career?)
- If no limitations on truck access, shovel logging possible except during real flood conditions (8-12 months out of the year); dual tired logging possible when surface water recedes (6-8 months out of the year)
- If roads an issue, may only be a 3 to 6 month window
- May be worth landowner investment in roads ahead of time?
- Current stands don't represent productivity potential due to past history; reduces economic flexibility (15-19 MBF/acre on 60 year rotation)

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My Special Requirements

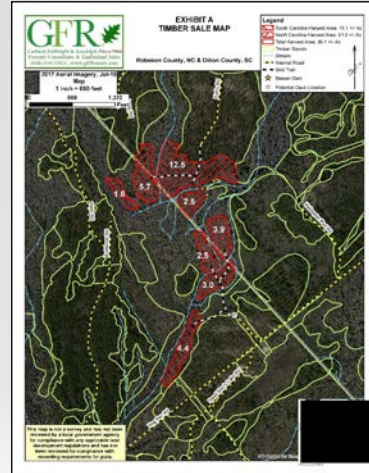
- My Special Requirements in Bottomland Harvesting (primary goal is regen of AGS):
- Stump heights for trees $\leq 18"$ at base should be no higher than 1-2 feet, even if swelled butts. Height depends on average water level; be flexible
- All stems $\geq 2"$ dbh should be felled clean (unless significant midstory of AGS)
- Leave wildlife trees, snags, sometimes spp. specific retention (i.e. swamp chestnut oak, cypress)
- Limit opening sizes. If 40 acre sale, try to divide into at least 2 openings with retention separating them.
- May require multiple deck sites for one 40 acre sale
- Minimize even ephemeral crossings (can be challenge for shovel crew)
- Lay out sale to maximize seed availability (from upstream and sides)



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Case Study of Ongoing Harvest with High Headache Factor

- 36 acres in 8 openings; avg. 4.5 acres/opening
- Opening sizes range from 1.8 to 12.5 acres
- Avg. minimum SMZ width 60-80 feet
- 96 tons/acre
- \$1243/acre
- \$310/acre in Pulpwood
- \$933/acre in Sawtimber



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Additional Challenges/Limitations/Considerations

- Sale set up time significantly higher (can be extra 5% commission) due to perimeter, ground conditions, hydrology determination, access issues, site assessment, regen assessment, etc.
- Mgt plan costs ~30% higher due to many of the above
- Merchandising very important (large \$ difference b/t sawtimber & pulpwood). Almost Always Per Unit Sale.
- Dry conditions often = quotas/poor markets (not this year though)
- If marketed/contracted as shovel sale, stuck with that even if drought
- If you wait for stars to align, you may be waiting an awfully long time
- With so many weather limitations, specifying time of year to cut nearly impossible
- How often does the adjoining stand that needs cutting align with type of logging crew needed for BHW?
- Climate Change issues
- Logging availability (i.e. how much wood is bought in front of them) can influence the "willingness to move"
- "Everything is harder"

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Comparing Alternative Management Strategies

- Cost Share
 - Conservation Stewardship Program (CSP)-Farm Bill
 - Enhancement Practices- \$1959/acre to increase riparian buffer size (no cut zones)
 - \$535/acre to facilitate oak regen- this could substitute for the unlikely intermediate harvest
 - \$545/acre to rehabilitate degraded HW stands
 - \$200K cap over 5 year contract
 - Environmental Quality Incentive Program (EQIP)- Farm Bill
 - \$435/acre for tree marking and individual stem treatment (hack & squirt)
- Audubon
- USFWS Partners in Flight

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Comparing Alternative Management Strategies cont.

- Conservation Easements
 - \$900/acre for no-cut buffer
- Carbon
 - If 2.7 tons/acre/year, equating to 2.43 MTE, at \$10/ton, \$24/acre/year
 - \$960/acre over 40 years
- Hunt Clubs- willing to pay for trees to remain?

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