



Forest Management

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What we will talk about

- Definition of Forest Management
- Items that all FM Organizations must address
- Silviculture
- Externalities

Definition

- Forest: land covered with woods or trees
- Management: (the act or manner of managing: to bring about or succeed in accomplishing something, sometimes despite difficulty or hardship) to take charge of or care of.
- Forest Management: the take charge or care of land covered with woods or trees

What is the most important factor in decision making in Forest Management?

- The landowner's objective!!!

Items that need to be addressed

- Landowner's objective
- Economics
- Planning
- Staffing
- Public Use
- Neighbor's
- Rules and Regulation
- Legal
- Silviculture

Items: Economics

- Will it pay?
 - To the landowner
 - To the organization
 - To the forester
- Decision model
 - ROI: return on investment
 - SEV: soil expectation value
 - Aesthetics
 - Others

Items: Planning

- Planning: the process of identifying goals and objectives and laying out a process to accomplish these goals and objectives
 - Inputs
 - Constraints
 - Mileposts or intermediate objectives
 - Accountability
 - Feedback mechanism

Item: Staffing

- Do you have the people needed to accomplish the goals and objectives
- Planning system feeds directly into staffing concerns
- How do you address too much or too little staff?
- How to you accomplish the impossible with no additional staff?

Item: Public Use

- Based on G&O, what do you allow?
- To what extent? Timing and placement
- Liability issues
- Potential conflicts
- Enforcement: formal or informal

Item: Neighbors

- Get to know your neighbors and try to ascertain how they feel about FM and what their needs (perceived and real) are
- Plan on how to proceed with FM activities accordingly
- How do neighbor relations relate to public use issues?

Item: Rules and Regulations

- Know as much as possible about where you work and stay in tune
 - What is the prevailing attitude of local and county governments?
- NCFA and Extension good sources for a survey of Rules and Regulations
- Obvious ones:
 - River Management Rules
 - Sedimentation and Pollution Control Act
 - Prescribed Burning Act

Item: Legal

- Do you meet the legal requirements to conduct Forest Management operations?
- Does the landowner have a clear title to the land?
- Agreement between landowner and managing partner
- Company legal set up: how does it affect how you conduct business and your personal finances?

Item: Silviculture

- How do you grow the wood to meet the landowner's objectives
- Factors to consider:
 - Landowner's interest and financial ability
 - Markets
 - Availability of resources
 - People
 - Services
 - Equipment

Silviculture

- Standing timber is considered real property.
- Does the seller have a clear title?
- Ownership is proved by possessing a recorded (at the courthouse) timber deed.
- Most timber purchases involve a contract.
- More later.

Hardwood Silviculture

- Even Aged Silviculture
 - Plantations
 - Natural Stands
- Uneven Aged Silviculture
- All about how the forest responds to disturbance – man made and natural

Hardwood Silviculture: Plantations

- Differences between conifer silviculture
 - Importance of nutrition
 - Some species have special nutritional requirements
 - Best addressed prior to planting
 - Size of Seedling
 - Importance of competition control
 - Rate of growth
 - Need for early intermediate treatments to maintain fast growth
 - Co\$\$\$\$t

Hardwood Silviculture: Natural

- You must work with what mother nature provided.
- In light of your objectives, do you have the species you want?
- How many of the desired species do you have? How do you foster the growth of the species you want?
- Start talking about even aged silviculture.

Hardwood Silviculture: Natural Phases of Growth (Even Aged)

- **Regeneration**: up to age 7 (herbaceous)
- **Recruitment**: dominant tree emerge (10,000 +), up to age 12
- **Early wood production**: dominants start to grow (1000 stems per acre), up to age 20
- **Put on the wood**: rapid wood production (up to ages 50 to 200, depending on site and species)
- **Mature**: once thought of as climax forest
- **Senescence**: stand starts to fall apart, next trees emerge
- *Silviculture treatments will affect this process*

Hardwood Silviculture: Even Aged Regeneration

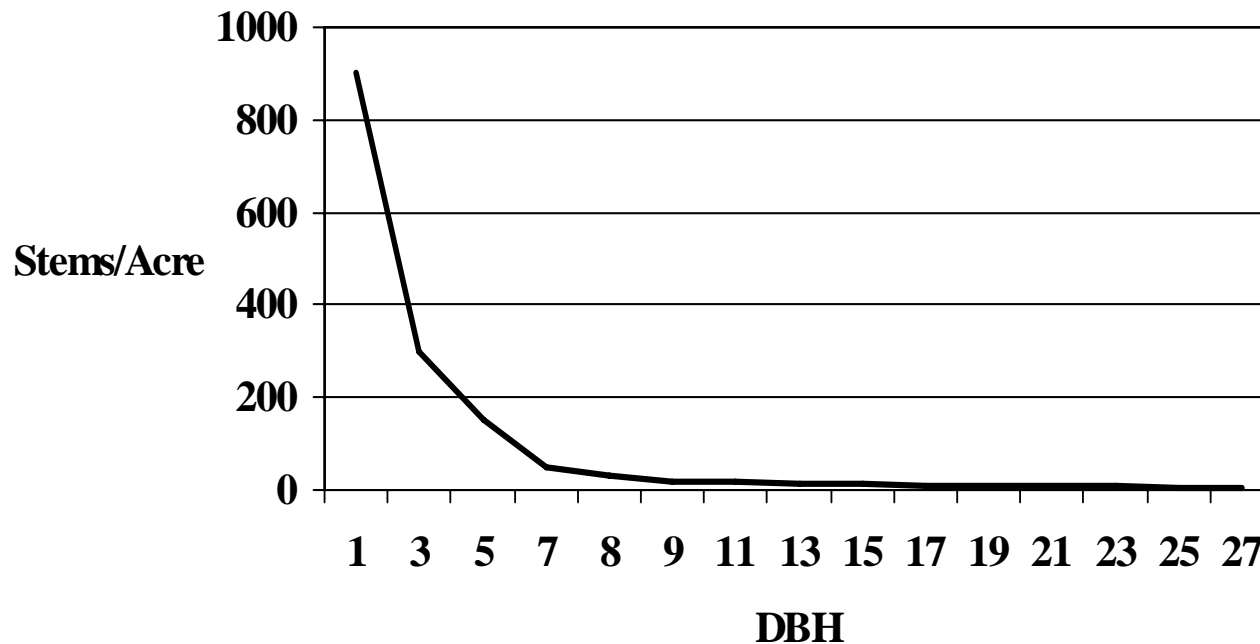
Harvest types to consider:

- Clearcut, if desired advanced regen present
- Shelterwood
- Selection
- Seed tree

Hardwood Silviculture: Uneven Aged Management

- Ideal situation: reverse J shaped curve

Ideal Uneven-aged Stem Distribution



Hardwood Silviculture: Uneven Aged Management

- Objective is to maintain this reverse J shaped curve.
- Regular harvest entries requires removal of trees from all diameter classes.
 - Requires special care on part of logger
 - Requires special forester supervision

Pine Silviculture

- Many options, including Uneven Aged management
- Many species of pine with different characteristics, growth and wood property
- What is the objective?
- Loblolly pine the most adaptable for growth in Southeast, especially NC

Uneven Aged Pine Silviculture

- Key is to make your disturbances large enough to foster pine regeneration
- Skill of forester and logger supervision key to success
- See hardwood uneven aged topic above

Even Aged Pine Silviculture

Possible regime

- Plant or naturally regenerate
- Early competition control:
 - Herbaceous
 - Woody
- Early stocking control: PCT
- Thin
- Nutrition management
 - Fertilization
 - Prescribed fire
- Final harvest

Even Aged Pine Silviculture Regeneration Considerations

- Genetics
- Competition expectations
 - Herbicides?
 - Hot fire?
 - Mechanical operation timing
- Site damage?
- Soil considerations: do you need a bed?
- Contingency plans

Even Aged Pine Silviculture Very Young Stand Considerations

- Competition and possible control
- Herbaceous and Hardwood competition
 - Herbicide
 - Method of application
 - Pine growth response dramatic and economically justified
- Pine competition: too many trees
 - Consider PreCommercial Thinning
 - Costly, but economically justified

Even Aged Pine Silviculture Thinning Considerations

- Consider thinning when basal areas approach 150 square feet per acre.
- “Thin to” levels still controversial
 - 50, 70, 90 square feet
- Operator select versus marked stands
 - Costs
 - Logger expertise and supervision critical
- Soil moisture considerations

Even Aged Pine Silviculture

Nutritional Considerations

- On poorly drained and wetter soils consider Phosphorus fertilization pre plant or very soon after planting
 - Site index *improvement* up to 15 feet (age 25)
 - 50 pounds of elemental P per acre = 250 pounds per acre Treble SuperPhosphate (TSP)
- Nitrogen, in balance with phosphorus economically attractive as stands approach saw timber size.
 - 200 pounds of Nitrogen per acre, plus
 - 25 pounds elemental P per acre (125 pounds of TSP)
 - May be applied aerially

Forest Management

- Items to consider
- Silviculture
- Questions?

