

Florida Land Steward Webinar:

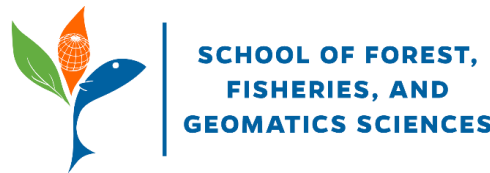
Is it Time to Thin your Pine Stand?

Ian Stone, R.F.

Forestry Extension Agent
UF/IFAS Extension Walton County
ian.stone@ufl.edu
(850) 892-8172

Chris Demers, C.F.

Extension Program Manager
UF/IFAS School of Forest, Fisheries, & Geomatics Sciences
cdemers@ufl.edu
(352) 846-2375



Please use the Q & A to ask questions.

Questions will be answered after the presentation is complete.

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Florida Land Steward



The Florida Land Steward Program is an extension program of the [UF/IFAS School of Forest, Fisheries, and Geomatics Sciences](#). The mission of the Program is to help and encourage private landowners to manage their lands for long-term environmental, economic and social benefits. [Read more about the Florida Land Steward Program.](#)

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Is it Time To Thin?

WHAT IS THINNING?

- **Thinning is a Silvicultural practice designed to manage stand density, competition, and light availability**
- **Pre-Commercial-Thinning performed on stands or trees that are below merchantable size**
- **Commercial Thinning-Thinning performed on stands or trees that are merchantable in size and can be sold as timber**
- **At it's core thinning is a practice to reduce and manage density**
 - In more depth thinning is a core timber stand improvement practice and can serve multiple functions
 - Improved growth and yield through competition control
 - Removal of diseased, damaged, and poor form trees to increase value
 - Management of crown cover and shade which improves stand conditions for wildlife and habitat as well as forest growth

WHAT IS WRONG WITH THIS STAND



Even-Aged vs. Uneven-aged Stands

- **Even Aged Stands-Planted or regenerated at one time, one age class, little diameter distribution, uniform structure**
- **Diameter distribution is usually “bell-shaped” curve**
- **Thinning**
 - Crown closure occurs at one time, and stand moves through stages linearly
 - Self thinning begins when stand becomes overstocked
 - Thinning is done to prevent self-thinning and prevent negative competition
 - Several thinning in a rotation
- **Uneven-Aged stands-Multiple age classes and non-uniform structure, large diameter variation**
- **Diameter distribution is usually a “Reversed J-Shaped Curve”**
- **No Rotation or Final harvest, instead periodic cycles of harvesting based on structure**
- **Thinning**
 - Becomes a matter of reducing tree competition or removing undesirable trees
 - Often incorporated into other harvest objectives

EVEN AGED PINE STAND EXAMPLE

- **Typical Stand development**

- Stand is planted-Initial stocking and site quality will determine growth and development
- Stand begins to enter crown closure and self thinning between ages 10-15 on average
- If left unthinned the stand will self thin, which is undesirable
- First thinning-Usually pulpwood only with goal of desirable stocking and removing defect trees, reduction is usually between 20-40% of stocking
- Stand is left to grow until stocking reaches upper limit again
- Second thinning- may begin to consider tree size, begin to get some chip-n-saw and sawtimber, goals are ideal stocking and improving stand quality
- Stand is left to grow until optimal rotation is reached
- Final Rotation and harvest reached and cycle is restarted

Timing-A Key to Success

CONSIDERATION ON “TIMING”

- **When to thin is directly tied to stand development trajectory**
- **Stand Trajectory and Development determined through measurements**
 - Crown/Canopy Closure-When crowns occupy all available growing space
 - Density-How many trees are on site
 - Size and Volume-How big are the trees and how much wood
- **Commercial Considerations**
 - Is the stand “merchantable”
 - What is the desired revenue
 - Is there enough volume to attract a sale
 - Do disease or tree quality issues need to be addressed

COMMON TIMING ISSUES

- **Common Mistakes**
 - Thinning too Early
 - Thinning too Late
 - Lack of pre-planning
 - Initial stocking too high-forces precommercial thinning
 - No Plan and Lack of Cruising Information to Guide Thinning
 - Breaking stands into too small a unit to thin-inability to attract logging contractor

Density-The Key to How Much

STAND DENSITY AND STOCKING

- **For each stand there is an optimal stocking rate for growing timber and other objectives**
- **Objectives should drive desired standing stock**
 - Optimal for timber is usually focused on maximal growth
 - For habitat or wildlife considerations the target is often driven by desired stand condition
- **Density is a measure of stocking**
 - Trees Per Acre-TPA
 - Basal Area-BA
 - Standing Volume Per Acre-Chords/AC. Cu.ft./AC, BD.Ft./Ac, Tons/AC.
- **To determine thinning need and intensity know the following:**
 - Current density and volumes
 - Desired density for objective
 - The dried thinning reduction to reach objectives

Thinning Methods and Designs

UNDERSTANDING CROWN STRUCTURE

- **Live Crown Ratio-relates length of live crown to total tree height as a %. Below 40% indicates overstocked stands**
- **Crown Position-The size and position of a tree crown relative to other trees**
 - Dominants
 - Co-Dominants
 - Intermediate
 - Suppressed
- **Goal is to maintain healthy dominant and co-dominant crowns with 40% or better live crowns**
- **Thinning can be done to release intermediate or suppressed trees, but this is more applicable to hardwoods than pine stands**

THINNING METHODS

- **Row or Geometric Thinning-** Tree removal based on rows or tree position in rows
- **Crown Position-Uses crown position and tree size to determine thinning**
 - Thinning From Below-Targets suppressed and intermediate crowns
 - Crown Thinning/Thinning from Above-Removes some co-dominant and dominant trees to favor best trees
- **Selection Thinning-Uses crown position and removes larger trees to favor growth in those of lower crown classes with good form**
- **Free thinning/Crop Tree Release-combines multiple criteria to designate crop trees and thin trees competing with these or undesirable for future stand development**

Forest Health Improvements

- **Reduction in disease risk such as SPB**
- **Allows removal of diseased trees such as fusiform rust and pitch canker**
- **Reduces fire damage risk**
- **Corrects stand damage such as broken tops**
- **Removes form problems such as forks, sweeps, and other trees which will have low value**
- **Cautions:**
 - Thinning can increase risk of wind throw
 - Thinning can increase competing vegetation, monitor closely and control



Thinning and Fire

- **Overstocked stands are difficult to burn and can pose significant risk**
- **Loblolly and Slash-burning after first thinning is a common practice**
- **Thinned stands have more open canopy and reduce risk of crown scorch**
- **Wind movement and flow is increased**
- **Immediately after a thinning fuel loads can be high-use caution**
- **Prescribed fire controls competition, improving thinning response**



SETTING TARGETS

- **Basal Area is often to best measure for a stand**
- **Trees per acre fails to account for size and position**
- **Volume is an important consideration, but partially captured in Basal Area**
- **Objectives should drive stocking**
 - Current density-Desired Density=Removal Target
 - Consider outcomes such as timber (growth and quality) and wildlife habitat
 - You may want lower density for habitat consideration but a higher density is optimal for timber
 - What is Optimal? Your objectives drive your decisions, which determine outcomes
 - Talk with your forester and have an open discussion, your forester can only make informed decisions when provide with the full picture

Marked vs. Operator Selection

Marked By Forester

- **Marking a thinning is always an option, and often results in the best outcomes**
- **This is an added cost, sometimes significant on first thinning**
- **Some stand conditions make marked sale difficult**
- **Marking has to allow for equipment operation and clearance**
- **On second and selection thinning, it becomes more important**

Operator Select

- **Many loggers are highly skilled and are capable of making good operator selections**
- **The contractor is free to harvest trees needed for clearance**
- **Viability is limited inside equipment.**
- **How comfortable is the landowner with the contractor and vice versa**
- **Poorly marked sales can make it difficult for a contractor, this can reduce bids or make operations difficult.**

Operational Considerations

- **What Equipment is available and being used?**
- **What are the market conditions? Pulpwood drives first thinning**
- **How important is revenue? Long-term Benefits from first thinning much higher than immediate revenue generated**
- **Is there enough to attract a sale? If not can it be combined with other sales**
- **Thinning enhances the stand, so you must work with what is there**
- **High grading is a significant issue, use good professionals**



Open Discussion



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Evaluation for Florida Land
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