

Managing Your Timber Harvest

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2012



General Forestry for Woodland Owners

1. Determining what your goals & values are
 2. Knowing what's on your property
 3. Identifying options & coming up with a long-term plan
 4. Acting to implement the plan
 5. Keeping records of what you've accomplished
 6. Reviewing/updating your plan
 7. Succession planning for the next generation
- ▶ Working with a consulting forester
 - ▶ Working with a skilled professional logger

This is a long-term process; Maine Forest Service can help you with any aspect of this process; Working with Your Woodland courses

Overview

- ▶ Woodland management
 - Planning for your woodlot
 - Harvest goals
 - Silviculture – which trees get cut & which are left

- ▶ Timber harvest considerations
 - Financial arrangements – types of timber sales
 - Who's involved – working with professionals
 - Legal considerations

- ▶ Planning a harvest
 - Harvest systems/equipment
 - Access
 - Contract elements

Take-home points

- ▶ Plan ahead!
- ▶ Hire a Licensed Forester to represent your interests and help you make decisions
- ▶ Work with a reputable, skilled, professional logger
- ▶ Communicate clearly and often with everyone concerned
- ▶ Use detailed written contracts to clarify expectations and responsibilities



*Based on history and
current forest conditions...*

Planning for your Woodlot

- ▶ Know what you've got
- ▶ Know what your forest's potential is and what your options are
- ▶ Develop an action plan (10 years+)
- ▶ Forest Management Plan
 - Prepared by a Maine Licensed Forester

What are your harvest goals?

- ▶ Protect & “improve” your forest
 - How will the forest grow in the future?
 - Trees, seedlings, forest health, down logs, snags, etc.
- ▶ Protect other resources
 - Recreation, aesthetics, wildlife habitats, etc.
 - Soil, streams, wetlands, trails, etc.
- ▶ Financial considerations
 - Wood for your use – boards, firewood, etc.
 - Income – from sale of wood (vs. cost)

Forest health?

- ▶ What is a “healthy” forest?
 - What will it do in the future?

- ▶ When is a tree “mature”?
 - When will its growth and value change significantly?
 - ▶ Biological maturity – natural lifespan of a species of tree
 - ▶ Financial maturity (peak of value - maximizes \$ rate of return)



Types of harvests for particular goals

- ▶ **Thinning**
 - Improve growth
 - Favor particular species
 - Favor better quality trees (timber, wildlife, aesthetics)
- ▶ **Regeneration harvest**
 - Small openings for seedlings (looks a lot like thinning!)
 - Bigger patches for seedlings
 - Clearcutting
- ▶ **High-grading**
 - Cut the valuable trees and leave poor quality trees



Harvest planning considerations

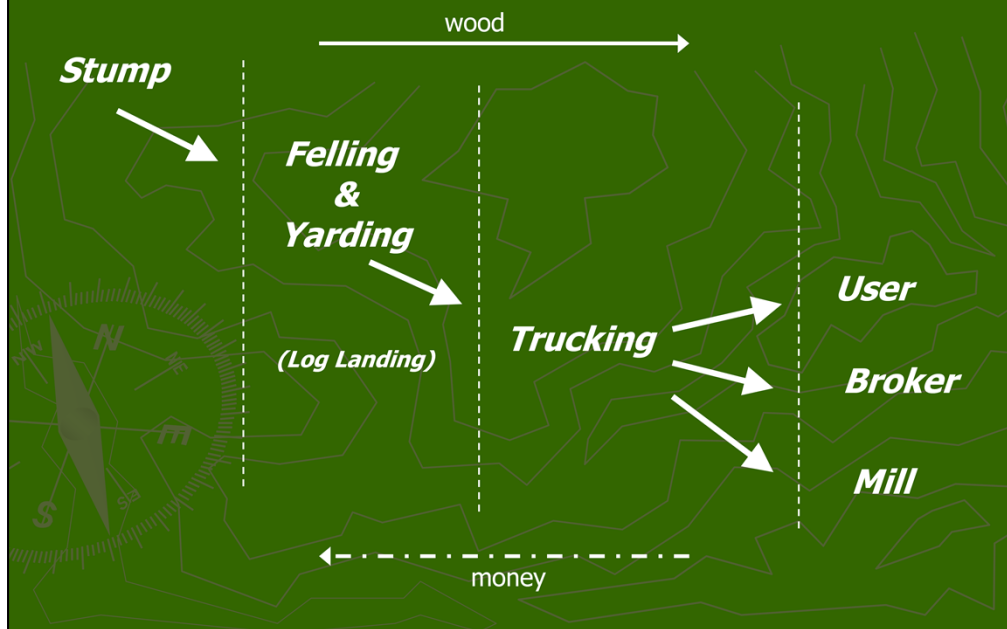
- ❑ Timber harvest considerations
 - ❑ Financial arrangements – types of timber sales
 - ❑ Who's involved – working with professionals
 - ❑ Legal considerations
- ❑ Planning a harvest
 - ❑ Harvest systems/equipment
 - ❑ Access
 - ❑ Contract elements

Types of Timber Sales - terms

- ▶ Timber "sale"
 - = a "commercial harvest"
 - = any timber harvest where wood is sold
 - = logging job, timber cut, logging operation, etc.

- As opposed to a "precommercial" forest operation
 - ▶ cutting is done primarily to improve future conditions, no wood is sold, trees cut are left in the woods or used by the landowner

Wood movement



Timber "Sale"

▶ Who is selling wood?

- You (the landowner)
- Your forester
- A logger/contractor
- A trucker
- A wood broker or concentration yard

▶ Who is buying wood?

- A logger/contractor
- A trucker
- A wood broker or concentration yard
- A procurement forester
- A mill/mills
- Any "user" eg. firewood

Types of timber sales

- ▶ Stumpage sale/Pay as cut sale (*most typical*)
 - Landowner sells trees “on the stump” for an agreed set of prices (“stumpage prices”) to the logger
 - Logger re-sells or “markets” the wood to various outlets -
 - ▶ a trucker,
 - ▶ a wood buyer/concentration yard
 - ▶ a mill or procurement forester
 - Each truckload of wood is measured or “scaled” by the receiving mill or concentration yard (or other buyer)
 - ▶ Sawlogs/veneer – thousand board feet (MBF)
 - ▶ Firewood/pulp/biomass – cords or tons or mlbs.
 - ▶ “Scale slips” or “Mill slips” show volume/quality of each load
 - Logger pays the landowner based on scaled volume & price agreed

Types of sales (2)

- ▶ Lump sum sale
 - Landowner sells all wood to be cut to logger/contractor for a single sum

- ▶ Roadside Sale
 - Landowner cuts/yards the wood to where a truck can get it
 - Landowner markets the wood to a trucker or wood buyer

- ▶ Service Contract (Roadside Sale)
 - Landowner pays logger a service fee for cutting and/or yarding
 - Landowner (or landowner's forester) markets any wood

Types of sales (3)

- ▶ Any of these types of contracts –
 - Stumpage/pay as cut
 - Lump sum
 - Service....

...can be...

1. Negotiated (with a single logger/contractor)
 - Usually used to allow more give and take on conditions of the sale
2. Put out to bid (to multiple loggers, buyers, contractors)
 - Usually used to maximize the value of the sale where there's substantial volume/value

Working with Professionals

▶ Foresters

- Woodland assessment, planning, and oversight of forestry activities (incl. harvesting)
- Professional State License required to practice forestry in Maine based on education, experience (internship), state exam

▶ Loggers

- Felling, removing, and marketing of wood products
- Private/industry certifications optional, based on training & demonstrated skills

Working with Foresters

- ▶ Why hire a forester?
 - To assess your property and prepare a forest management plan
 - To help you plan and implement a harvest operation
 - ▶ An independent forester (one that you've hired, not working for the logger, wood buyer or mill) is professionally obligated to act in your best interest

Possible forester services

- ▶ Preparing/updating a Forest Management Plan
 - Tree Growth Management & Harvest Plan
- ▶ Help locating boundary evidence
- ▶ Forest inventory & appraisal
- ▶ Mapping
- ▶ Researching/preparing legal requirements or other paperwork

Possible forester services

- ▶ Help setting up small projects (thinning, pruning, trail work, etc.)
 - Marking trees to be cut
 - Laying out trails, roads, erosion control
- ▶ Finding specialists and other contractors
- ▶ Navigating financial assistance programs

Possible Forester Services

- ▶ Forest Operations planning/preparation:
 - Flagging boundaries and/or harvest area limits
 - Silviculture – determining what will be cut
 - Marking trees to be cut (or to be retained)
 - Planning/laying out roads, log landings, major trails
 - Designing Best Management Practices at/around waterbodies (erosion control, stream crossings, etc.)
 - Filing notifications/reports, researching legal requirements, obtaining permits (if necessary)

Possible Forester Services

- ▶ Negotiating harvesting agreements on the landowner's behalf
 - Estimating timber volume/value
 - Identifying/researching a logger (with the skills & equipment to do the job)
 - Advising the landowner on fair prices
 - Negotiating prices with a logger/buyer
 - **Developing a written Timber Harvest/Sale Contract that establishes expectations and responsibilities

Possible Forester Services

- ▶ Supervising and “administering” the harvesting contract
 - Reviewing the harvest periodically as it’s occurring (especially silviculture and protection of resources)
 - Helping ensure wood is being marketed to its maximum value
 - ▶ (by working with the logger, or by marketing wood directly)
 - Reviewing scale slips & disbursing stumpage payments to the landowner
 - Making sure the harvest is completed and “closed out”
 - Providing harvest summary information for reporting/tax purposes
- ▶ *A Forester Services Contract can establish what services will be provided, at what cost*

Choosing a Licensed Forester

- ▶ Experience (amount and type)
- ▶ Qualifications (Forester license, other credentials)
 - References from previous clients with similar circumstances
- ▶ Communication skills – verbal and written
- ▶ Quality of presentation
- ▶ Mapping appropriate to your needs
 - Samples of work
- ▶ Attitude & Willingness to adapt to/promote your objectives
- ▶ Ability/skill in helping you implement their recommendations (project management)
 - Sites where they have worked - results
- ▶ Cost
- ▶ Efficiency...
- ▶ Confidence/Trust

What do a forester's services cost?

▶ Factors:

- Professional rates
- Size (acres, volume, value) of the harvest
- Variability of conditions/Complexity of ownership considerations
- Range of services provided

▶ How billed?

- Hourly vs. percentage of project revenue

▶ When paid?

- Up front
- As billed periodically
- Deducted from payments for wood cut/sold/paid for by the logger



Working with Loggers

- ▶ **Logger services**
 - Felling and yarding trees (efficiently, safely)
 - Building/improving roads, trails, landings
 - ▶ Including stream crossings
 - Marketing the wood
 - (Trucking the wood?)
 - Clean up of debris/slash
 - Firewood or sawlogs for landowner's use?

Choosing a logger

▶ Considerations:

- Skill – quality of woods work, resourcefulness
- Professionalism – attitude, communications, relationships with landowners, foresters, buyers/mills
- Type of equipment/operation, specialized equipment
- Quality of Utilization & Access to markets
- Availability/flexibility
- Production
- Sole proprietor vs. contractor/logging firm
- Training/credentials (Certified Logging Professional, Master Logger, Professional Logging Contractors)

▶ References/past work:

- Communications with previous landowners & foresters
- Results of previous harvests (financial and on the ground)
- ...Have your forester research possible loggers

What do a logger's services "cost"?

- ▶ Loggers get paid by the difference between
 - what they pay the landowner for the wood (stumpage price)
 - what they receive from the mill for the wood (mill-delivered price)
- ▶ Operating costs - components:
 - Moving equipment to the site, set-up
 - Insurance
 - Access construction/maintenance cost (labor, equipment, materials)
 - Felling & yarding - labor & equipment cost
 - Marketing
 - Trucking
- ▶ Mill price & operating costs vary – so stumpage prices will vary too



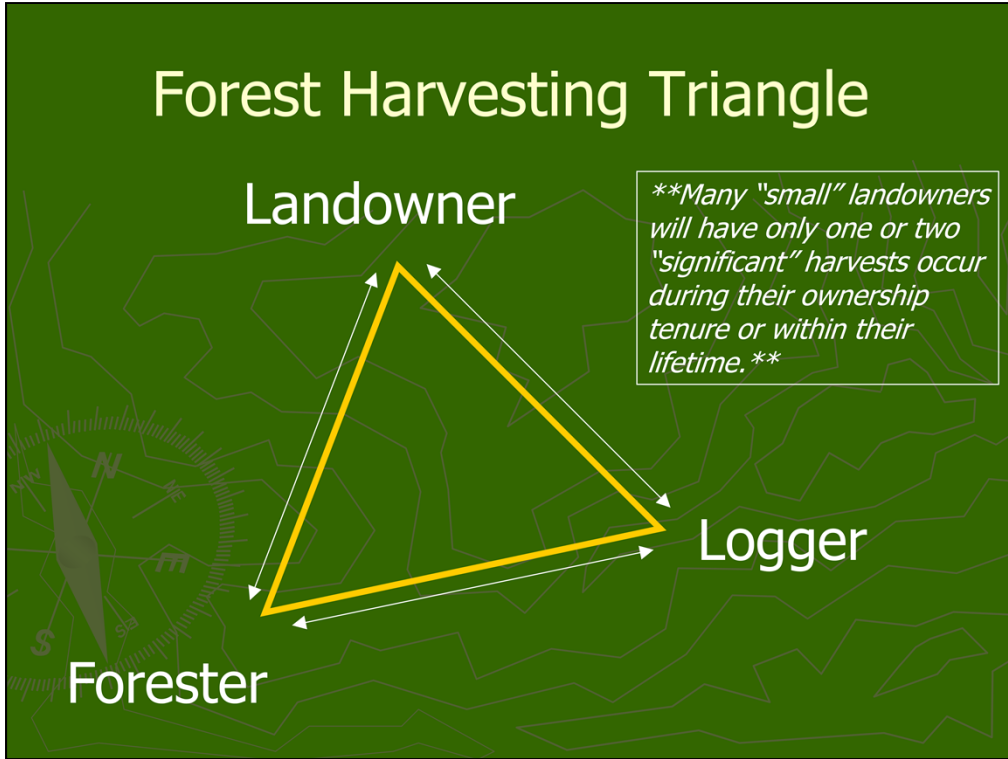
Forest Harvesting Triangle

Landowner

Many "small" landowners will have only one or two "significant" harvests occur during their ownership tenure or within their lifetime.

Logger

Forester



Legal Considerations

- ▶ Boundary marking – within 200' of harvesting
- ▶ Forest Practices Act
 - Forest Operations Notification & Landowner Report
 - Clearcutting Requirements (& exemptions), Regeneration Requirements
- ▶ Liquidation Harvesting
 - Buying, cutting, and selling timberland within a 5-year period
- ▶ Natural Resource laws
 - Water quality protection; Shoreland Zoning; wildlife habitats
- ▶ Local Land Use or Harvesting Ordinances
- ▶ Property restrictions (e.g. easements, Tree Growth requirements)

Harvest systems & equipment

- ▶ Felling
 - How are trees cut (directional/controlled felling)
 - How far can the machine reach to get the tree
- ▶ Yarding
 - Is the wood dragged or carried to the yard (skidded or forwarded)
 - Is the wood yarded in short lengths or tree-length
 - Are trees yarded with limbs on (whole-tree) or off
- ▶ Both...
 - Is the equipment on tracks or wheels (or feet...)
 - What is the ground pressure of the equipment

What's the optimal equipment for the type of harvest?

vs.

What equipment is available that can do the work efficiently?



Small-scale systems

Tractors, etc.
Horse logging
(skidded or forwarded)









"Cut-to-length" system
(single-grip harvester
& forwarder)



"Mechanical" system
Feller-buncher & ...



...Grapple skidder



Access

- ▶ Where will wood be stored and/or loaded onto trucks?
 - *Log landing*
- ▶ How will equipment get into & bring timber out of the woods?
 - *Roads/trails*

Log Landings

- ▶ Types of products/Number of log "sorts"
- ▶ Size needed for efficient operation
 - standard equipment (skidder(s), loader, trucks)
 - additional equipment (slashers, delimiters, chippers)
- ▶ Size of trucks
- ▶ Type of soils
- ▶ (Location of water crossings)
- ▶ Season(s) of operation
- ▶ Proximity to all-weather roads







Trails

- ▶ Trail pattern/layout, width
- ▶ Distance to log landing
- ▶ Number of passes in the same trail
- ▶ Potential for re-use (desired and undesired)
- ▶ Type of soils
- ▶ Location of water crossings
- ▶ Season(s) of operation





Roads

- ▶ New vs. old/existing
- ▶ Cost of construction/upgrades/maintenance
- ▶ Potential for re-use (desired and undesired)
- ▶ Type of soils
- ▶ Location of water crossings
- ▶ Season(s) of operation





Access - site protection

- Soil type, strength
 - Organic, silt, sand, clay, gravel, rock, ledge
 - Weakest when wet, strongest when dry or frozen

- ▶ Terrain, surface water
 - Cross or avoid?

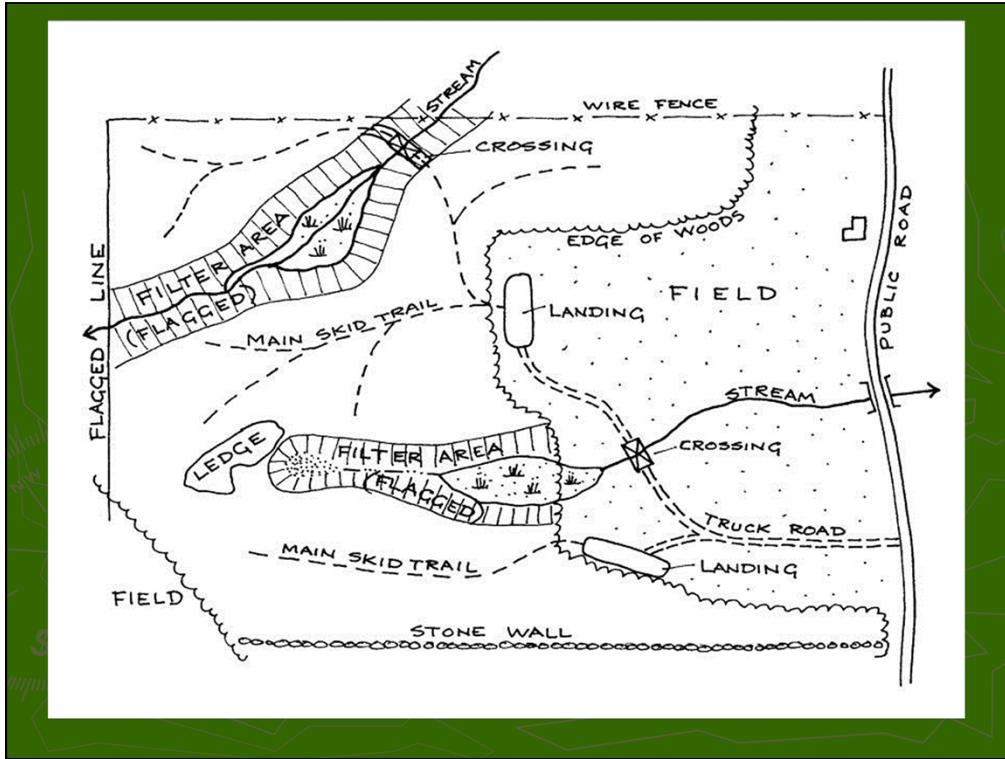
 - “Best Management Practices” to protect water
 - ▶ Reduce water momentum ($M \times V$) over the ground
 - ▶ Increase water infiltration into soil
 - ▶ Avoid damage to water bodies (streambanks/bottom)

SOILS & WEATHER

Promote frost penetration on sensitive areas and high traffic areas such as landings near roadsides by packing or blading the snow in advance

Mineral Soil Type - large particles

Organic - smaller



Timber Harvest Contracts

- ▶ Contract with your forester
 - Services that he/she will provide to the landowner, at what cost, how/when billed

- ▶ Contract with your logger
 - "Service Contract" – an agreement in which the contractor provides defined services, at a pre-determined cost to the landowner

 - "Timber Sale Contract" – an agreement to sell (some of) the landowner's trees, at a pre-determined price, under pre-agreed conditions

- 
- ▶ A written contract is a communications tool that provides a common set of expectations and assurances between the landowner and the logger (and/or the forester)
 - What are the goals, conditions, desired results?
 - Who's doing what? responsibilities
 - In writing and up front (easier to remember over time)
 - Ensures that decisions/agreements are made in advance, before any work begins

*This presentation does not constitute legal advice
and should not be construed as such.*

Timber Sale Contract

- ▶ A Timber Sale contract is between
 - the landowner – the “Seller” – and
 - a purchaser of timber – “Buyer” (usually an independent logger/logging contractor).
- ▶ Ideally developed by
 - an independent forester representing the landowner
 - someone sufficiently knowledgeable to address all the possible considerations and advocate for the landowner’s interest
 - Sometimes by the landowner, logger, procurement forester, etc.

Contract “elements”

- ▶ Parties to the contract
 - Landowner (Seller of stumpage)
 - Logger/wood buyer (Buyer of stumpage)
 - Forester identified as “Agent” for the landowner (?)

- ▶ Timeframe of contract
 - Begin/end date
 - seasons of operation (time of day, market conditions)
 - Interruption/suspension of harvesting

Contract elements

- ▶ Property location
- ▶ Boundaries of property
 - Whose responsibility is it to mark them?
 - Required by law
- ▶ Boundaries of harvest area
 - How marked (and by whom)?



What trees will be cut?

- ▶ The contract should clearly describe what is to be cut and what is to be left so that there is little room for disagreement
- ▶ There are three basic methods:
 - Trees can be marked individually by the forester or landowner (paint)
 - Trees can be marked in groups/patches (flagging)
 - Trees can be described in the contract
 - These approaches can be combined

Contract elements

- ▶ Marking of trees to be cut
 - Marked trees to be cut, or to be left
 - How marked?



▶ Trees to be cut identified by written prescription/description

- by species and/or diameter, esp. low grade species
 - ▶ E.g. all merchantable Balsam fir >5 inches diam.
 - ▶ ...wildlife trees?
- by written prescription
 - ▶ E.g. fir & popple over 7", low quality hardwood over 14", 1/3 of hardwood logs over 18"
 - ▶ Thin pine to 110 square feet of basal area, averaging spacing of 18-24', favoring better quality large crowned trees
- Designating trees solely by diameter limit is often NOT good silviculture
 - ▶ E.g. all trees >12 inches diameter



Contract elements

- ▶ Terms of sale:
 - ▶ Stumpage/Lump sum/Service
- ▶ Stumpage prices
 - Unit price by species/product
 - ▶ \$/MBF, \$/ton (\$/cord)
 - ▶ % of mill price (trucking?)
 - ▶ for all species/products present
 - Timing of payment(s)
- ▶ Utilization
 - Scale slips provided
 - ...to maximize value...
 - ▶ Logs, firewood, pulp, biomass...



Contract elements

▶ Access

- Locations and design of roads, trails, landing(s), stream crossings
 - ▶ Who marks them & how
- Responsibilities for needed improvements, Best Management Practices, "close-out"
- Costs (and who bears them)
- Legal issues (rights of way, permits, etc.)

Contract elements

- ▶ Post-harvest conditions
 - Restoration of trails/roads/landings
 - Slash/debris (incl. legal requirements)
 - Logging damage to trees & regeneration
 - "aesthetics" ...





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"Aesthetics"

- What are the expectations?
- How/when will appearance change?
- Will it affect future health/value?
 - What looks like a mess may be temporary/appropriate to the goals
 - What looks "clean" may be costly window dressing (or worse)



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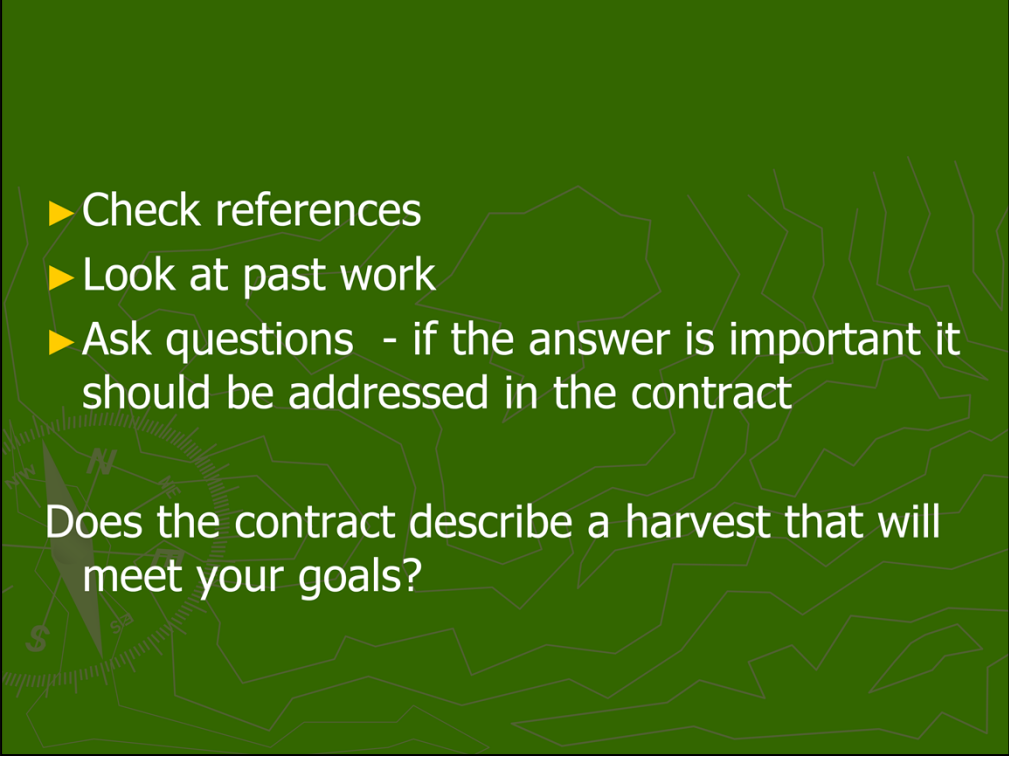


Contract elements

- ▶ Other roles/responsibilities of Buyer
 - Independent contractor
 - ▶ Use of employees, subcontractors
 - Workers' Comp Insurance
 - ▶ Workers' compensation insurance policy, or
 - ▶ Certificate of Independent Contractor Status (a waiver from the Worker's Compensation Board)
 - Liability insurance

Contract elements

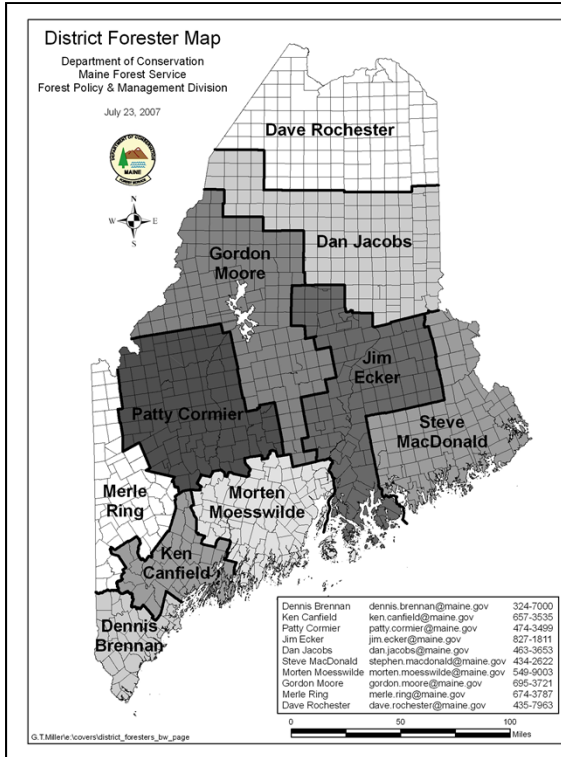
- ▶ Termination of contract
 - Conditions/options to terminate
- ▶ SIGNATURES, dated
- ▶ Appendices
 - Map(s)
 - Design specifications
 - ▶ Costs of materials, and who is responsible
 - Special services/provisions
 - ▶ E.g. roads, clearing, firewood, etc.
 - ▶ who is responsible, costs, how will these be paid for

- 
- A green background with a faint topographic map pattern. A compass rose is visible on the left side, showing cardinal directions (N, S, E, W) and some degree markings.
- ▶ Check references
 - ▶ Look at past work
 - ▶ Ask questions - if the answer is important it should be addressed in the contract

Does the contract describe a harvest that will meet your goals?

Take-home points

- ▶ Plan ahead!
- ▶ Hire a Licensed Forester to represent your interests and help you make decisions
- ▶ Work with a reputable, skilled, professional logger
- ▶ Communicate clearly and often with everyone concerned
- ▶ Use detailed written contracts to clarify expectations and responsibilities



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