

Silviculture Workshop Orono Maine June 22 2017

# Economics of Growing Spruce and Fir: Discarding the Box!

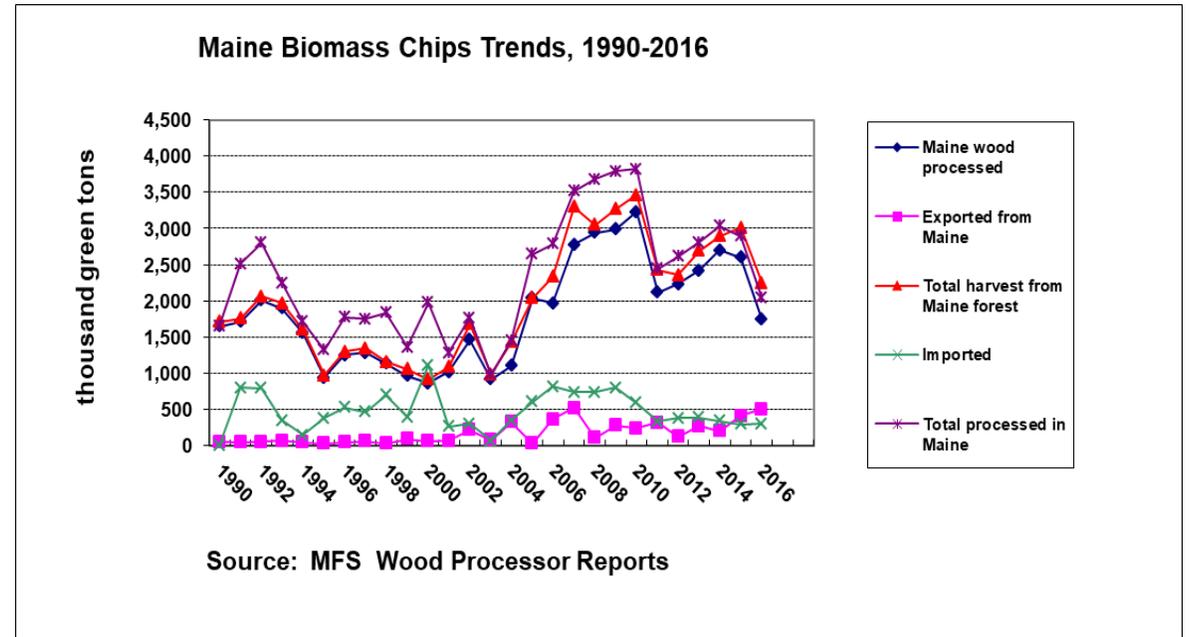
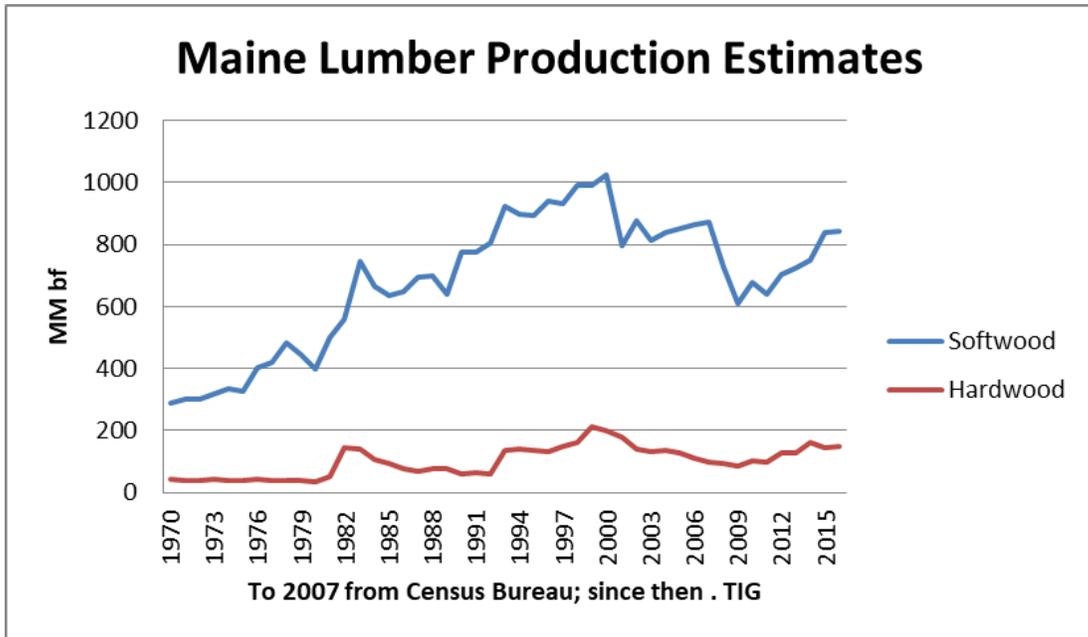
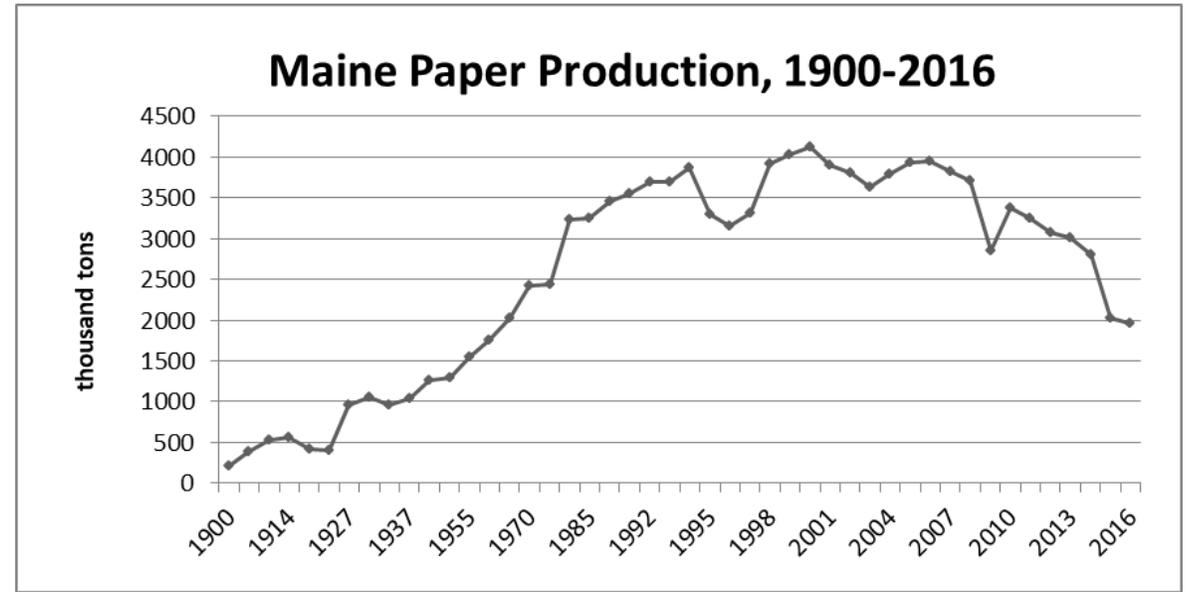
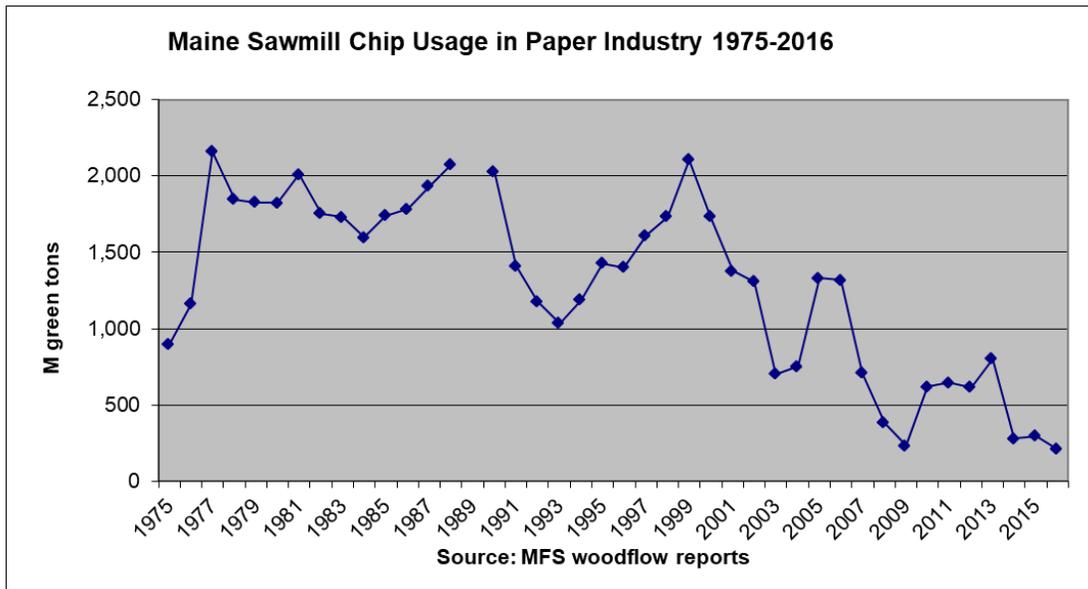
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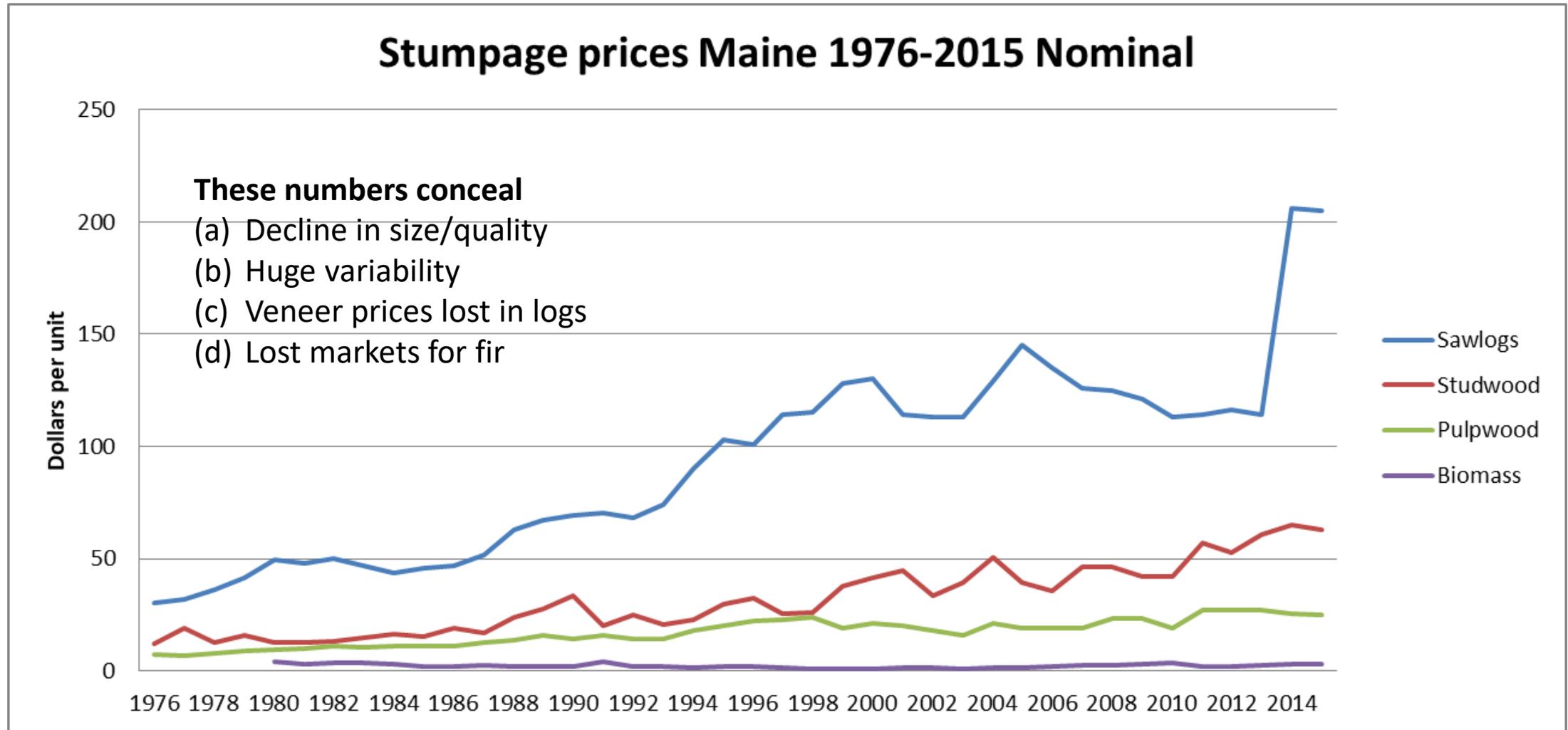
# Contents

- Market Trends and Outlook
- Utilization standards
- 6 boxes to escape or discard
- Tips on practical economics
- Don't take economics too seriously
- Closing Notes



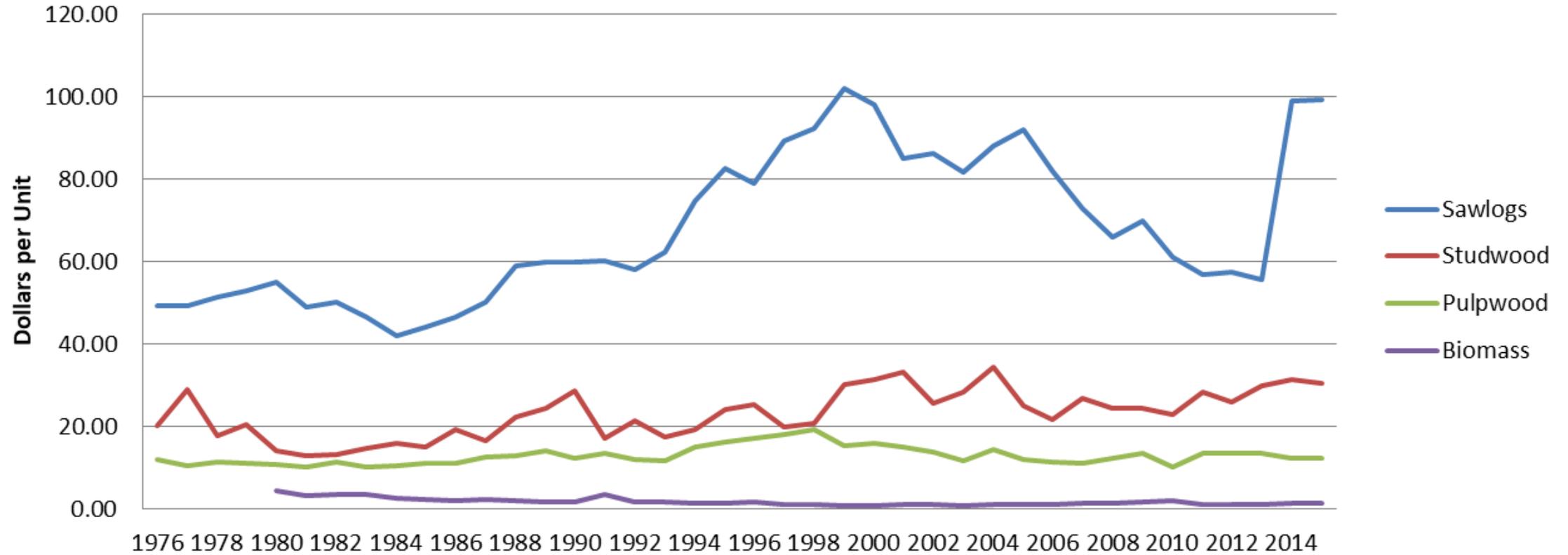


## Spruce – fir from MFS

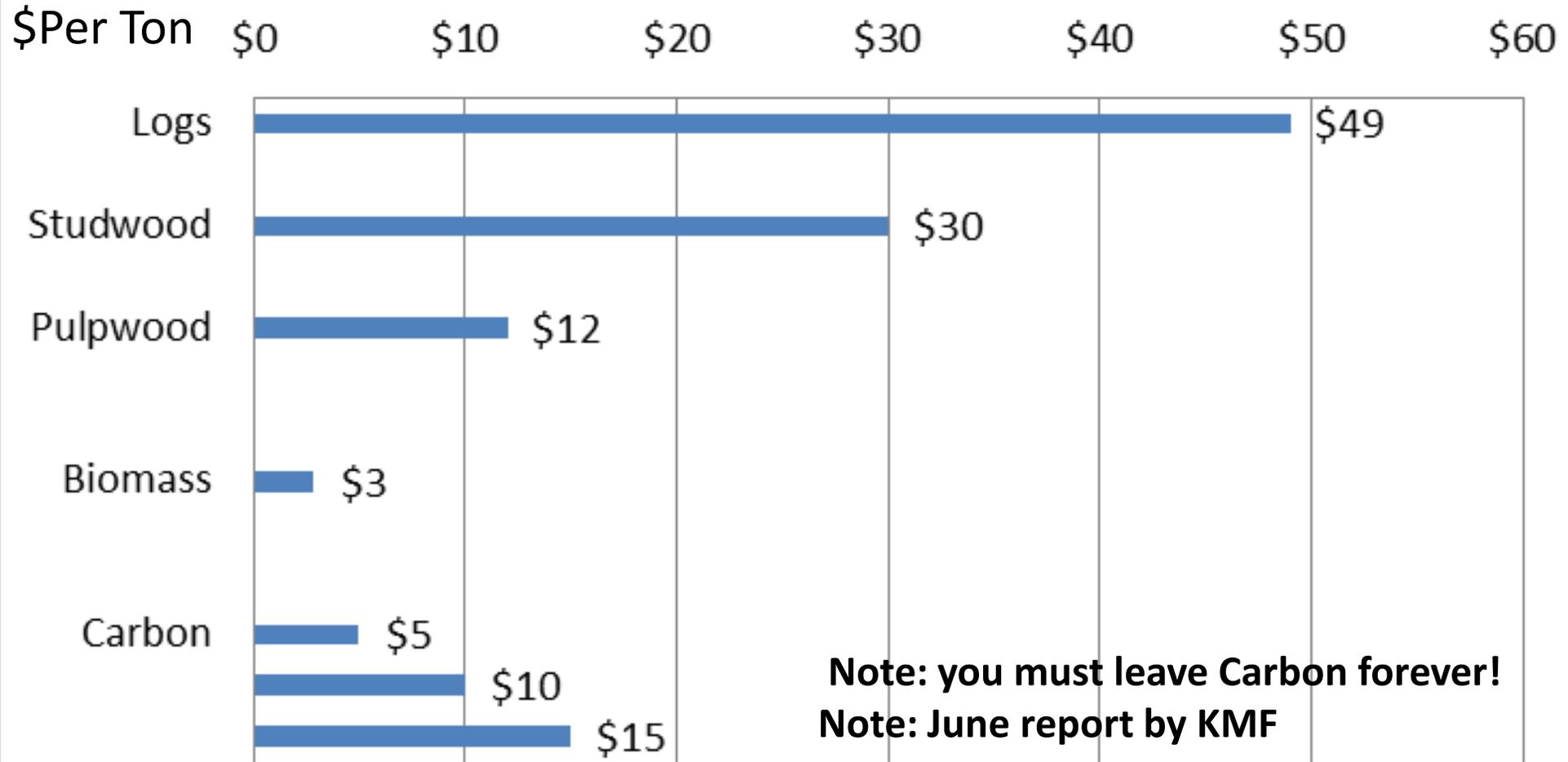


## Spruce-fir from MFS

### Stumpage prices deflated by PPI



# Spruce fir stumpage value scale, 2015



# Market Outlook: Near Term Grim

- Dark time: longer, grimmer than Dr Doom envisioned
  - (so much for experts)
- Eventual Market recovery will be good for our competitors too
  - US South – with well established fast growing stands
  - Europe – especially with import limitations on lumber
  - Chile
  - Asia

# New products

- Innovative construction products take time to gain markets
  - Conservative builders
  - Codes
  - Conservative building purchasers
- Worth watching, but:
- None in view that will recover volumes recently lost



CLT at UMO Composites  
Lab  
Note: recent NEFF study

# Innovative products....

- Often use other species
- Don't count on them to bail us out of this!
- REALLY INNOVATIVE: Equipment that can make money in a SMALL mill!
- Ways to use wood in the round – its strongest form
- Biomass plant that is not a gamble on:
  - Federal grants; whims of public policy; volatile electric market

# Box 1 : Utilization Standards



- Best markets keep changing
- Can we keep being saved by looser utilization standards?
  - Remember fitted logs, Hy-Grade, etc?
- Find mills that pay for value and then meet their needs
- Support innovators

# Box 2: Tons need to work around this



At one level, the only  
“practical” way:  
Make a list of all the harmful  
effects

- 1
- 2
- 3
- 4

# Box 3: Our Machines: Are we getting the best out of them?



Logs get smaller, the machines get bigger!

# How to keep the benefits and manage the disadvantages



Modern machines >> Many important benefits  
But: Capital costs too high  
O&M costs too high  
Site damage  
Restricted operating weeks/year

# Box 4: Forest Type definitions

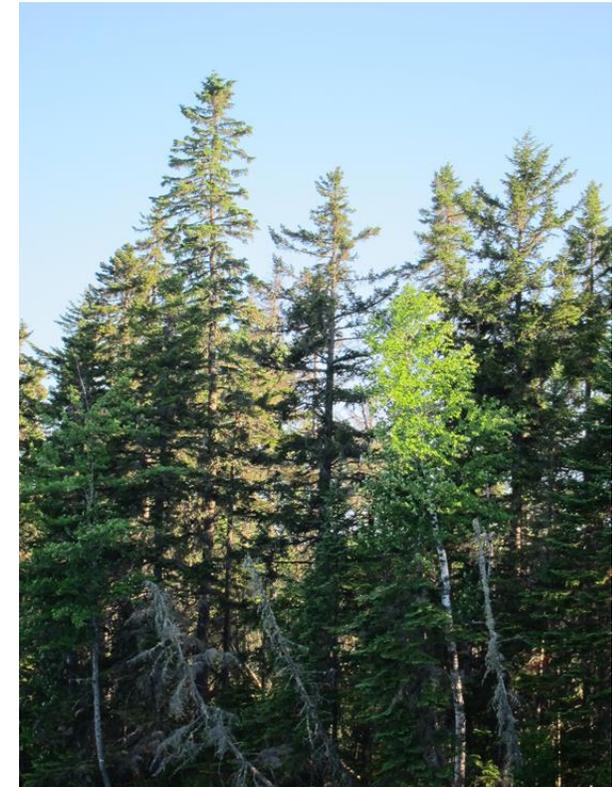
## Core Spruce fir type



- S-F type Gp less tamarack and cedar
- 83% of s-f cord volume in Me is in core type
- Ave stocking 13 cds/A – lowest in Northern Forest
- Past s-f stocking in mixedwood types Largely over by now
- Acreage trend? Does it matter?

# What do we want to Grow in spruce fir stands?

- The best quality, most vigorous stems!
- If they happen to be spruce fir, so much the better!
- How to do this:
  - Focus on crop trees
  - Do not homogenize stand at PCT stage or first thins
- No more blanket prescriptions for cut units
- Protect regeneration



# What do we want to grow in our hard/mixedwood Stands?

- As much spruce-fir as possible!!!!
- How do we do this?
  - Disciplined marking and logging practice
- Struggling to keep stands in a “box” strangles our thinking!



# Economics 101

- If you keep eating the seed corn sooner or later you starve
- Don't take out logs/trees with negative stumpage values!
- Care for/release well established natural regeneration
- Focus actions on your best sites



Figure 2-15. Timberjack 1110 forwarder working in 50% relative density reduction PCT plot at Austin Pond.

Econ 101 cont....

- Economics is about least cost ways to attain goals
  - Should not define the goals
  - In practice \$\$ constraints end up doing so...
- Look closely at what it's costing to do what you're doing
- Grow a diverse species mix for quality
- Identify and change practices that are in the way
- Try Things

## More Economics....

- Projected real price growth should be the frosting
- Value upgrading is the cake!

Well-known abuse: prolonged Below Cost timber sales controversy on the NF's

- In evaluating future investments:
  - Your own assumptions matter more than which investment criterion you use
- If you don't re-invest, the downward spiral never ends

# Intermediate Treatments

- Abundant R&D done in Maine and New Brunswick; Economics has been done
- Hard to keep track of all the moving parts
- In an economy of extreme capital rationing and high risk, few offer attractive paybacks.
- BUT –must keep trying, experiment, learn
- Bias for commercial treatments/short payback periods



*Five owners in 20 years....*

# And more....

- IRR's or NPV's can be used used to compare projects of similar:
  - Size
  - Time duration
  - Risk profile
  - Cash flow profile
  - Salience to the business
- Economics can support sound decisions, usually cannot make them for you



## Box 5: Rotation ages and \$\$ calcs

- Foolish to let 20 year old calculations decree today's rotation ages
- The MAI curve usually has a broad plateau – which means a range of ages will work.
  - Don't be compulsive about calculating “the” rotation age
  - Rotation age should be when the tree/stand loses vigor and ceases to gain growth % on its own value (unknown in advance)
  - (yes—old –fashioned financial maturity)

# Rotation ages, cont...

- Intermediate treatments will change optimum rotations
- Adding in land costs not necessary— will get wrong answer
- Adding in taxes, matter of taste
- Even where set by policy, useful to know opportunity cost

# Nonfinancial or Diffuse Goals

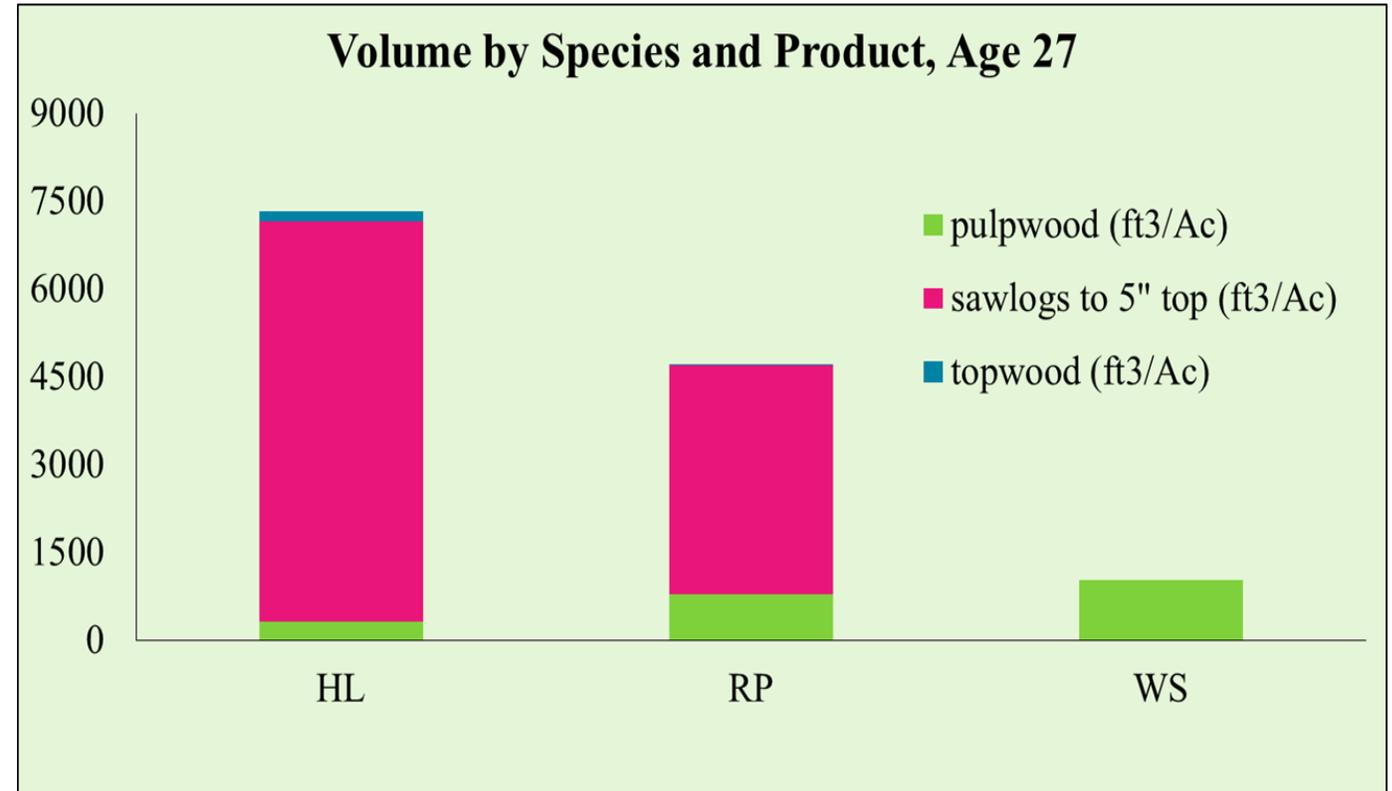
- Recreation
- Restoration to desired conditions
- Fire hazard reduction – protecting adjacent property
- Cost-effectiveness remains important!



Ossipee Barrens, NH

# Want to Boost Growth? Plant Larch!

- Mystery:
- Why is everybody planting and treating
- the slowest growing species we have?????



Chase Stream plantations –unthinned  
See [www.larchresearch.com](http://www.larchresearch.com)



13 year old stand. Former Mead Lands.

Another mystery: If “there’s no market”, why are these stands disappearing????

# Box 6: Two forgotten kinds of Cost

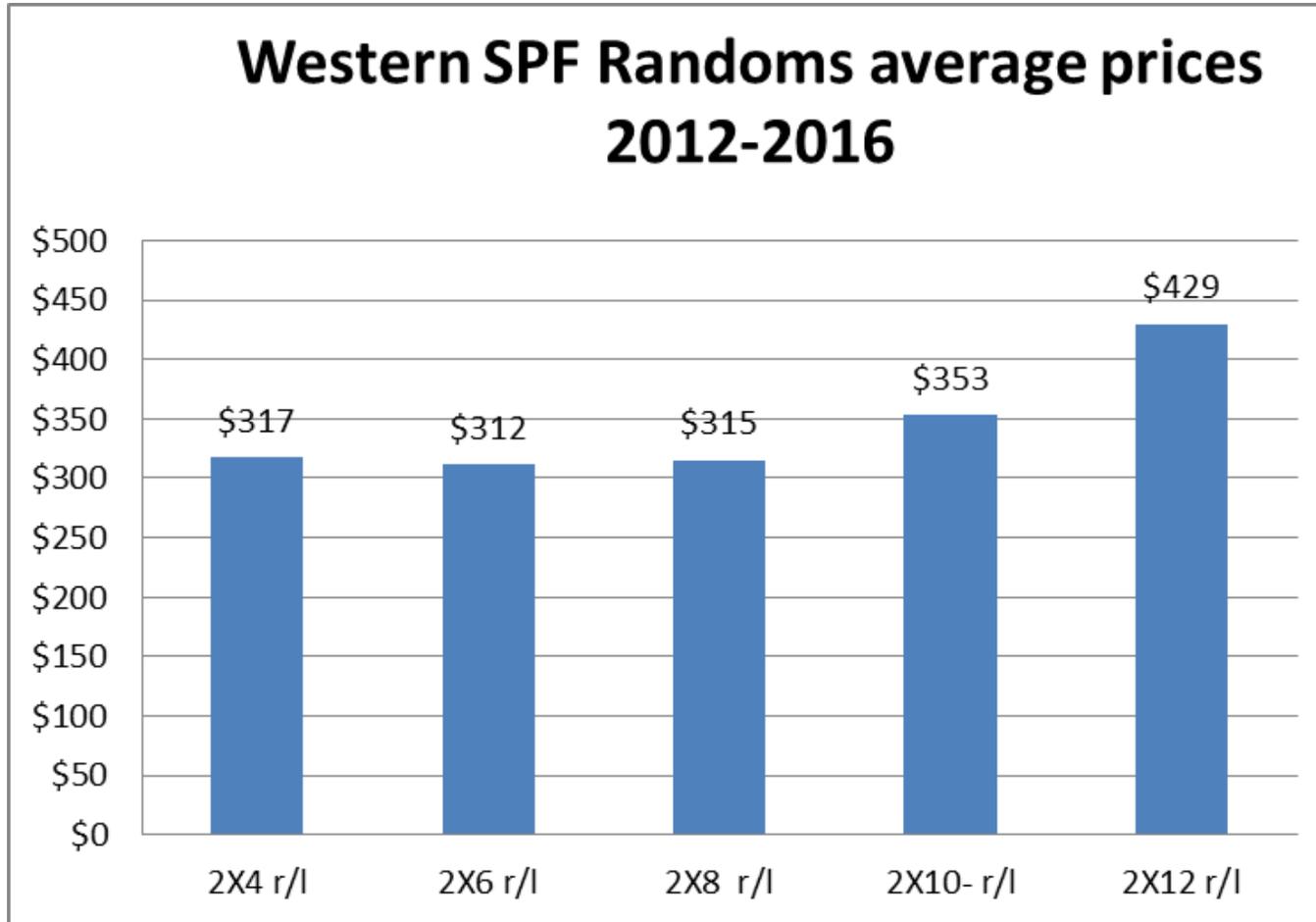


- Forgotten economics lessons:
- **Opportunity cost** –see above slide
  - What do you lose by cutting this stand at this age????
- **Irrelevance of Sunk Cost**
  - Decisions should not be ruled by past investments
    - These cannot be changed
    - Decisions are about the future

# This stand Cost a lot: But Is this what we really want?



# So, we'll spend this kind of money to grow Studwood and unmarketable pulp?????



Random Lengths no longer quotes ESPF lumber wider than 6"

For Western,  
2X10 is worth \$41/M more than 2X6  
2X12 is worth \$117/M more than 2X6  
Think about it....

# Is all of this Practical?

- No, it's not -- Not all of it
- And not all at one time
- Two things are NOT practical:
  - The traditional posture of fatalism and passivity regarding markets.
  - Continuing to do what we're doing!
- **TIME TO THROW OUT THE BOX! JUST THINKING OUTSIDE OF IT WON'T BE ENOUGH!**

# Questions & Comments & Better Ideas?

- Thanks for your  
Time and attention

