

# Stocking Standards

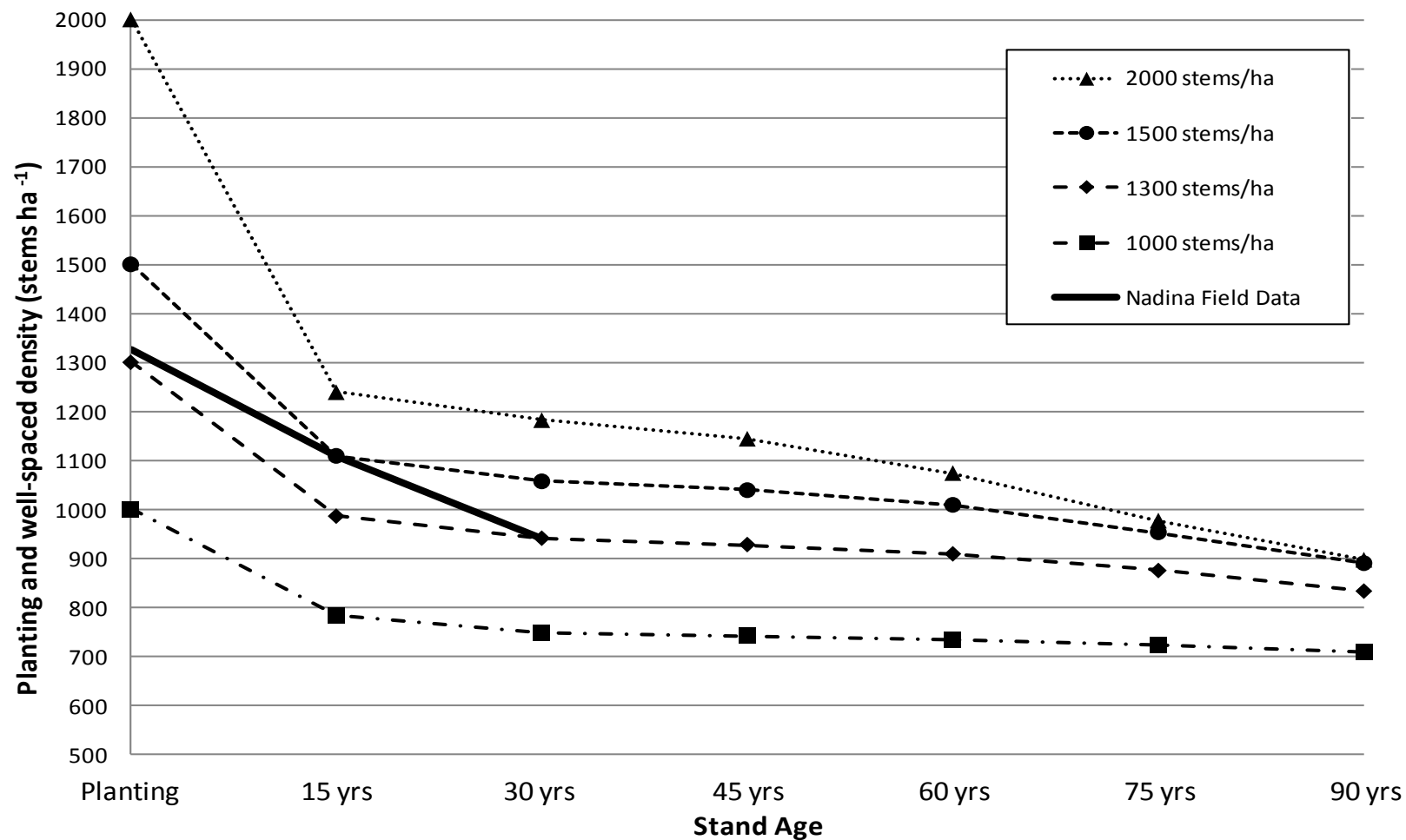
Discussion points



- Trust & Communication – Really have appreciated the dialogue with other licenses, Alex Woods, inventory analysis people and our Nadina district staff.
- Collectively if we are too positional we will not hear each other.
- Many things to review, so we picked a few ideas that we felt would be of interest. Specifically species, zonation and stand management diagrams.
- First however is a quick background review.

- Stocking standards have remained relatively unchanged for decades.
- Everything else from genetics, stock types, handling, storage and general planting practices has changed dramatically.
- Why have we had a target of 1200 for so many years and so wide spread?
- New information on our 30 to 40 year old stands.
- Significant forest health problems particularly with the pine have raised alarms bells.

# TIPSY Curves versus actual data

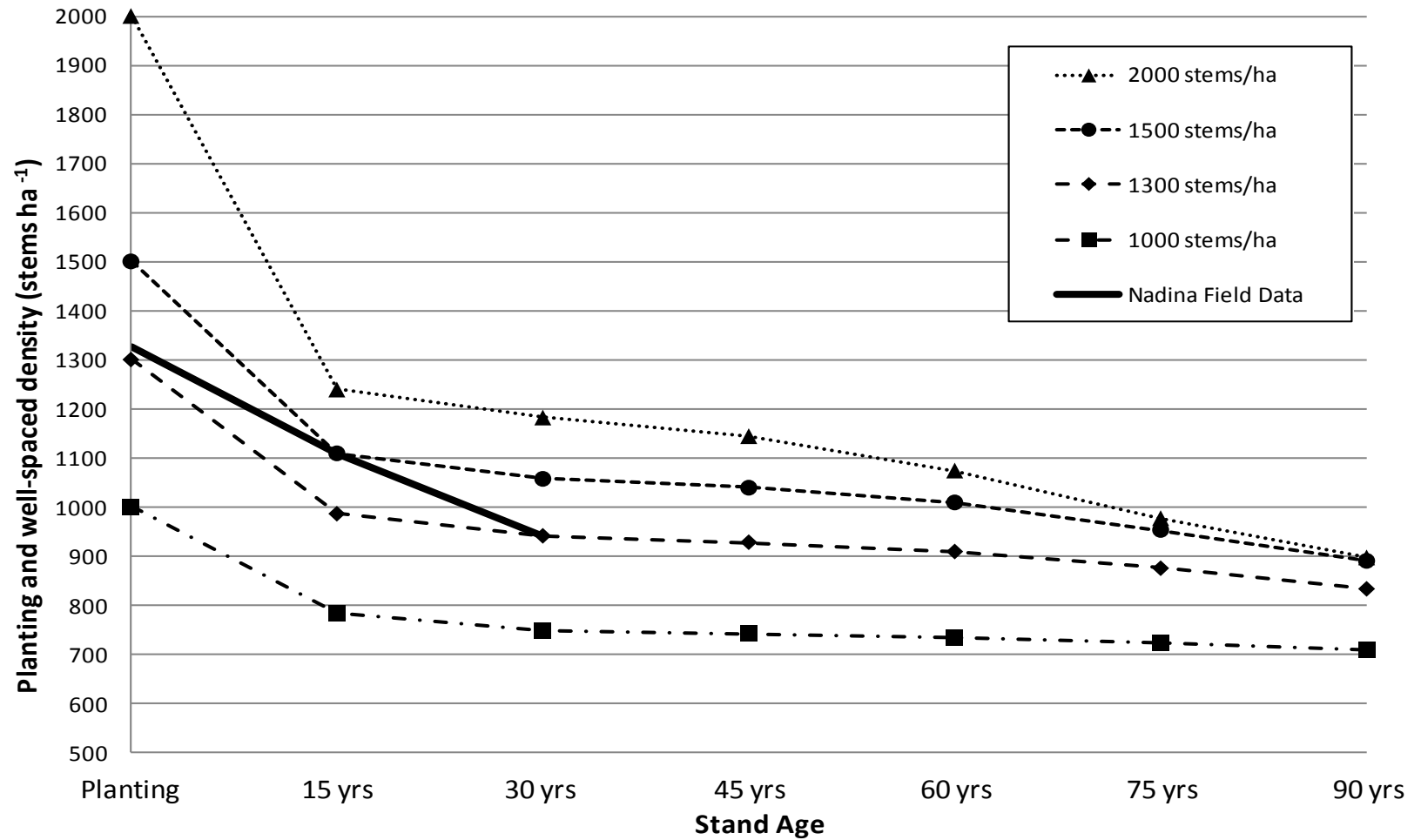


## Why don't the TIPS Y curves match?



- OAF1 is applied initially. It was 15% in approved TSR 2. OAF2 (5%) applies to the whole rotation.
- What does schedule 16 say for our next TSR ?
- OAF1 of 15 for spruce and 20 for pine stands. OAF2 stays the same.

# TIPSY Curves versus Stand monitoring

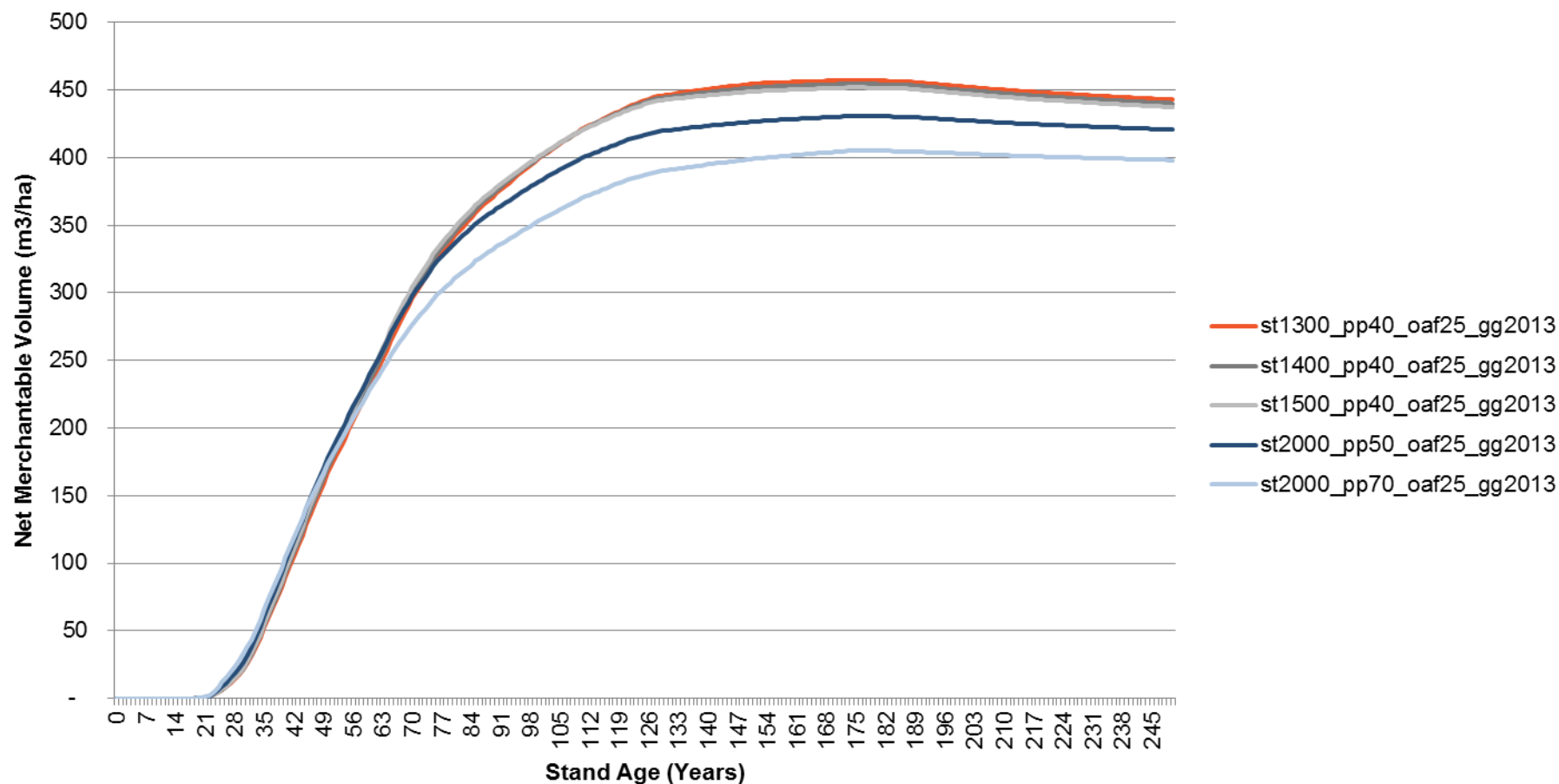


## What are our options?

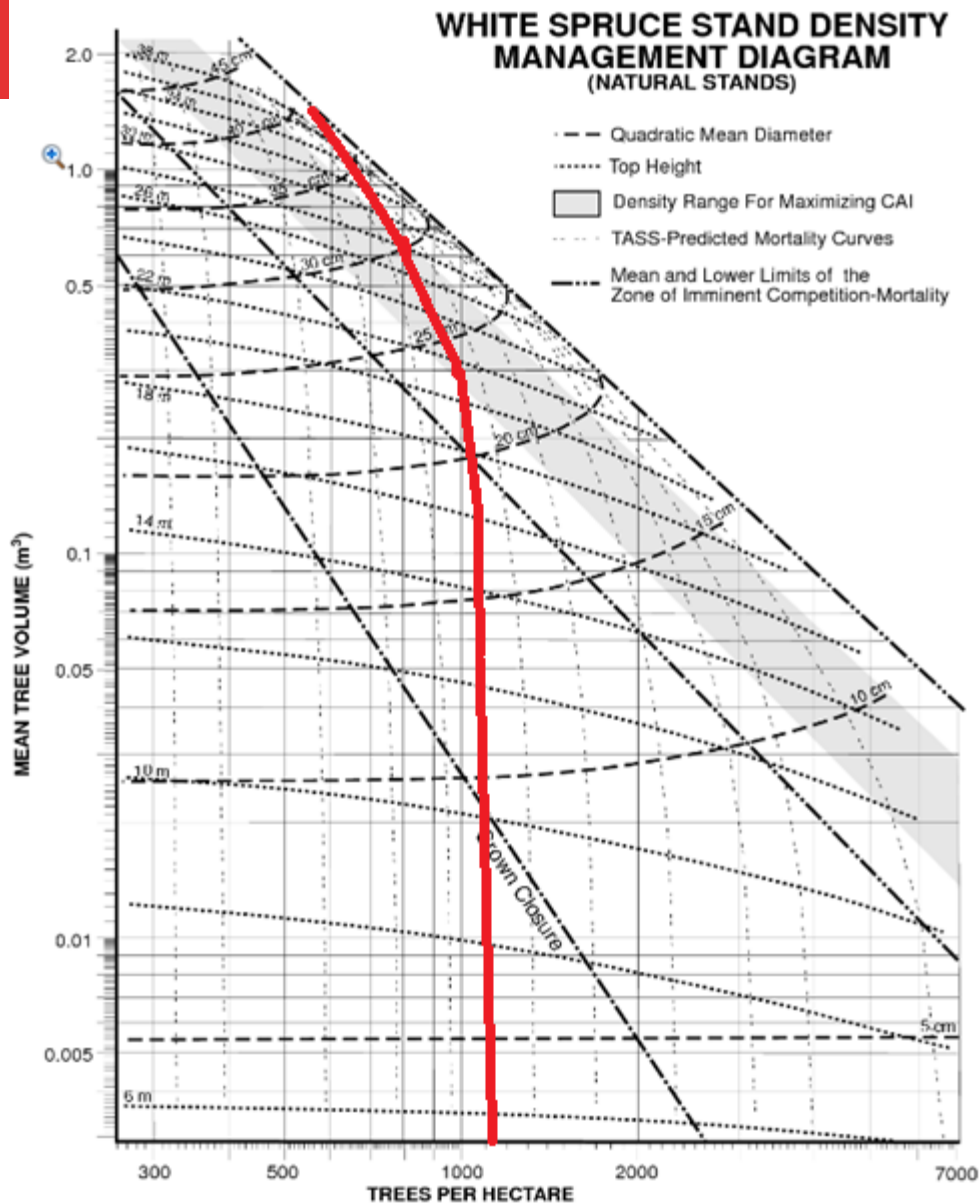


- Increase density
- Establish mixed stands i.e plant more spruce and or balsam
- or plant other species (Fd, lw)
- All of the above?

# Density versus species?



- A 60%Sx40%PI at 1300, 1400 and 1500 all beat a 50% pine stand at 2000 stems per hectare.
- A 70% pine stand at 2000 stems per hectare fairs even worse for volume.
- Take home message: Species has a far greater impact than density.



## Why a target of 1200 stems/ha?



- Balance of volume, diameter growth and branch size.
- We support the non pine increase to 1400.
- Better protection against forest health factors, more future stand management options.

## What are we getting for density investment?



- Earlier crown closure
  - Smaller diameter branches
  - No change in height so less taper
  - Increased volume at younger stand ages (stand level not piece size).
- 
- Is volume enough or do we need more diameter?
  - Is there a sweet spot?

## What about other species?



- The proposal to add more Fd and lw is encouraging. Species diversity is another way to create more resilient stands.
- Data provided by the district shows promising results. Both species produce high yields and could positively impact timber supply in the future.
- Greater species diversification will result in increased revenues to crown to fund health care, education, and roads. Public will get the desired results for having future timber supply. Industry will be able to hold a line on costs and be able to continue to reinvest in their operations.

- . Canfor believes in the concept of zonation of rust hazard zones (low, moderate, and high rust zones). Not all TSA's and operating areas are experiencing high levels of mortality from rusts.
  - Rust Management zonation allows for Foresters to select appropriate regimes and species to plant to be successful.
  - Up to date rust mapping based on current FG surveys allows forestry professionals to see if problem is expanding to new areas or how it is changing.
  - Helps with prioritization of work and timing of activities.

# Conclusions



- Greater species diversification and planting of rust resistant species will be more beneficial to timber supply, future lumber quality, and provide more revenue to the crown.
- Species has the biggest timber supply impact.
- Increased density provides more management options.
- More research needed. How are forest health factors changing over time? How are alternate species doing? How are mixed stands doing?
- Help needed with government control documents for example: seed transfer guidelines, appraisal recognition.