Regeneration Surveys – what and why?
- **What is a “regeneration survey”? A “free-to-grow survey”?**
- **Why are surveys required?**
- **How are they used for operational decision making? How are they used for reporting? How are they used for planning?**
  - Need to bring back requirements for regen surveys – determine need to refill; determine if seeded areas need supplemental planting; is tend required prior to FTG
  - Is FTG the only regen survey that needs to be done? What other surveys required?
  - Why? To make sound management decisions based on evidence – otherwise peeing in the wind.

- **What determines when? To do a survey?**
- The most important variable (indicator) of forest sustainability: described forest composition and structure.
  - Is there really need for detailed spp comp data etc. for 1 m tall stands. Would PSP’s be better used for prediction modelling? Use FTG’s to slot stand into FU.

Survey Design
- **Why do different survey methods give different results? How can you minimize the differences?** Eg MNR vs SFL methods – ground surveys vs ocular estimates
- **What effect does plot size have on results**
- **Stratification and mapping - When should you lump? When should you split?** Better guidelines are needed.
- **What effect does plot layout pattern have on results – grid vs random**
- Should MNR use the same plot centres as the SFL when doing audits? What are the advantages, disadvantages, implications?
- Calculation methods for density, stocking and free to grow status should be science based and statistically correct
- **How do we account for unproductive or unavailable areas? Gross vs net figures?**
  - What competition do we consider po vs pin cherry, etc.
  - What are the competition rules for Pw regen in clearcuts?
  - Stocked plots vs FRI stocking? 40% stocking probably results in 70% stocking
  - Should FTG surveys consider residual overstory in composition? Sometimes/always/never
  - What Ce and Oak residuals?
  - How to quantify post harvest residual in a clearcut – CLAAG – tally low & med veg?
  - SFL company has expressed concern that STARS plots (or any fixed plot) doesn’t consider acceptable species just outside the plot (or competition) just outside the plot.
  - Ocular surveys are more accurate but plot surveys are more precise?
  - What exactly is a statistically sound ocular survey? How do you do that?
- **Vertical transect method NSR manual 1980 – accounts for different size trees. Larger trees needs fewer trees to be stocked – no current standard**
- **When do you lump/aggregate stands together? And how do you survey effectively?**
- **Stratification is a key and likely a root cause of some problems**
- **Need some guideline to promote proper stratification of sites**
  - 4 m2 may be too small of a plot size
  - What is the smallest tree that should be recorded in FTG survey?
  - Trees outside plots – do they count towards? % cover (STARS)
Survey Methodology

- Tally procedures - # of crop trees counted per plot or quadrat
- Competition rules should be science based and therefore consistent between MNR and SFLs.
- Definition of FTG - is tending still required to declare a block FTG?
- Competition rules & the need to get a methodology that documents competition accurately
- Stratification – need to balance practice mgmt. decisions with statistical rigour
- Stand stratification – sampling needs to represent stand well
- Need to standardize survey methodology. Different surveys will give different results – need to focus on density and pattern of coverage as opposed to stocking
- How are FTG surveys to be completed in hardwood selection?
- How can we balance sample intensity against cost?
- Cost of meeting stats given variability of stands \( \rightarrow \) # of plots vs cost - expensive

Regeneration Standards

- Need to verify if local standards are realistic and defensible (minimum stocking and density, FTG height and times, crop vs acceptable species for major forest units).
- What is the effect of using density and/or stocking in regen stds and SGR’s.
- Need to link standards to realistic local yield curves.
- Do we need regen standards for different stages of Pw shelterwood regen cut, 1st and final removal?
- How do we deal with damage to advanced Pw regen at the various US stages?
- How do you match regen standards to SFMM regen assumptions?
- Pw FTG standard
- Hardwood standards for FTG?
- Is FTG really (for Pw shelterwood) measurable prior to final removal cut? 1st removal cut? Or most SGR’s suggest after seeding cut when we know that significant changes will occur. AND harvesting (may be 2 entries) will change/destroy some regen
- Need different competition rules for Pw as some shade/competition is beneficial, but STARS doesn’t recognize this?
- Competition rules: in some instances e.g. Pw in clearcut conversion – competition within less than 2m is desirable during the early years – but we don’t know for how long
- When will there some progress on benchmark regen standards (40% not acceptable)
- Meeting stocking standards (min 40%, min 30% Pw) in shelterwood stands given effect of residuals and non productive forest (non mappable). This may be an issue – can we reconsider these stand. at local level?
  - Currently almost anything is a regen success by the definition (SEMMO). Is this fair?
  - Should minimum regen standards be the same for the different silvicultural intensities?
  - Do we need different regen standards for different silvi. Monitoring?
  - Competition rules for tolerant spp may be different than for intolerants
  - Recognition of large regen e.g. patches of polewood in an otherwise 1-2 m stand
  - Need to reverse long term trend of low or loose targets in SGR (e.g. 40% stocking to target spp) Regional standards would go a long way to improving this
  - 40% residual stocking is too low – should be 60%
  - FTG SU in shelterwood stands timing: 1) post seed cut? 2) post first/final removal?
  - In mixedwood FU what spp would not be considered acceptable spp?
  - I’m worried that 40% stocking is setting the bar too low for the future
• If 30% of 4m² plots in a survey area cannot support trees (rock, wet, residual), best that can be achieved is 70% is 100% successful. Is success based on achievement in the 70% available or whole survey area?
• 2500 trees/ha = pipe dream, except for old field sites. Realistic after plant = 1800 cc, 1200 shelterwood, what is reasonable stocking to achieve the future stand @ 1-2 m FTG ht?

Auditing
• Timing of audits – what delay is appropriate? What effect might a delay have on the results of the audit? How should this be resolved?
• Dispute resolution process - how do you deal with different results? When do you call in the army?
• How do you deal with areas that are a regeneration success but not a silviculture success – how much is OK? When should you start to worry?
• Why does MNR not all use the same survey method on the FU/yr
• Need good verifiable data to audit esp. if there are difference between MNR, company results
• Whats’ the min. amt. of plots for auditing a FTG area?
• Difficult to audit FTG surveys when different methodologies are used
• Audit results will not match FTG survey results. What is an acceptable variation?
• When doing helicopter ocular surveys – need to do them jointly with MNR
• Experience required for ocular surveys
• Audits should occur ASAP after SFL assessment (more joint audit as well)
• How do you compare results from SFL surveys to MNR surveys?
• Do we have to have a certification system for those doing FTG surveys?
• Audit account for parts of stand that cannot regenerate. Should not be part of audit
  Reserves, uncut patch, unproductive patches
• Audit should sample same population as stratified by SFL recognizing managers decision to “lump”

SEM – what is it?
• What should be part of an SEM program in addition to FTG survey data? Other data needs?
• SEM for selection system needs lots of work
• Simulate Emulate Mother nature
• FMP annual report insufficient to describe how structure & composition of a forest is changing
• What is the status (good, excellent, bad, indifferent) of silvicultural successes from the Provincial point of view?
• FTG survey is only one aspect – trend analysis – comparing silvicultural results of different STP. Need more structure to this evaluation method
• SEM will be required to use the same survey one day? SEM/STARS

Data – analysis, reporting, storage
• What is available or should be set up for electronic data processing and information mgt systems - linkage to GIS, Annual Report generation and FRI updating, etc. Does anyone have something that can be shared?
• How do you roll up FTG data, trend analysis and reporting methods
• How do you report selection areas in the AR
• Data sharing industry/gov
• What computer systems/programs are available to track SEM or FTG results?
• Tracking FU's over time – when they keep changing from plan to plan – SGRs and treatment packages also changing over time
• Need a data recording program to support STARS
• Need development of an industry standard electronic data collection device/program that is cost effective. Industry/gov’t need to support development
• Need hardware & software that collects GIS info, survey info and provides confidence in levels of feedback
• Data accessibility should be easier to access than it currently is
• Need database that can rolled up (and down) – stand ↔ FU ↔ FMU ↔ Region ↔ Province
• When to split and when to lump – what is the desired resolution for FTG

Other
• need a mechanism to revise MNR FTG survey manuals and update people as new SEM and science info becomes available eg add interpretive tech notes
• changing reporting requirements for forest units
• FRI update – composition based on stocking/density? What do we do with multi-storied mixedwoods?
• Are FTG surveys required for the selection silvicultural system? Or would PSP be a better approach?
• Do we need to do FTG surveys if we are getting a new FRI every 10 years
• Funding to MNR district for SEM i.e. staff salary – how is it looking for this coming year? We are struggling in our “district” to do audits with our existing staff. Compliance i.e FOIP for harvest and access seems to take priority so SEM auditing doesn’t get done
• When is best time for hardwood FTG survey? – harvest – 1 year after?
• I can find out what training is being held but not what the competency requirements are
• Consider certifying surveyors (a la tree markers)

Back to Agenda