

Silviculture Surveys

- **"Life of a cutblock" & milestones**
 - log
 - assess site
 - ecology
 - critical site factors
 - stocking standards (spp., number of stems, etc.)
 - post harvest survey (site prep)
 - plant
 - **regen delay**
 - stocking (brushing?)
 - **free growing**
 - juvenile spacing?

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- **Silviculture Surveys**

- what is a silv survey
 - "how you doin"?
 - said the surveyor to the stand
- why?
 - to create a "label" for reporting milestones
 - status of stand vs. prescription
 - need for treatments?
 - you have to! ... it's the law
- when
 - time since harvest
 - before milestones (regen & FG)
 - but with enough time to act if needed
 - any time for stocking/brushing
 - time of year
 - regen ... best "without leaves"
 - FG ... best "with leaves"
- types
 - plantability/ site prep.
 - **regen delay**
 - stocking
 - **free growing**
 - pre-stand tending
 - green-up

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- **Terms**
 - cutblock
 - NAR
 - SU's
 - NP
 - NP nat.
 - NP road
 - Reserves
 - WTP
 - Riparian
 - stocking status
 - NSR
 - SR
 - FG
 - FG tree (p/a, ws, healthy, ht, brush)
 - FG stand
 - (NFG) - not really a status
 - "SP's"
 - contains the standards for stocking status
 - documents
 - PHSP
 - SP - silv prescr. ... FDP
 - SP - site plan ... FSP

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- Stocking Standards
 - preferred / acceptable species
 - TSS (e.g. 900 sph)
 - MSS
 - MSSpa (e.g. 500 sph)
 - MSSp (e.g. 400 sph)
 - MITD min. inter-tree distance (e.g. 2.0 m) = well spaced
 - regen delay (e.g. 3 or 6 yrs)
 - free grow dates
 - EFG & LFG
 - now ... 20 yr
 - FG heights (e.g. Fd-3.0m)
 - brush ratio (125 or 150%)
 - max density (10,000 sph)

- - SU vs TU

- advance regen ... natural regen

- basic silv. ... incremental silv

- commencement date

- forest health factor

- no-work zone

- plantable ... preparable (site prep)

- RESULTS (Reporting Silv. Updates & Land status System)




- silv survey

- stratification ... stratum (strata)

- walk-thru' (drive thru' ... I'll have a bacon burger & large fries please)

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- **Fixed Area Sampling**
 - SU - "basic unit" may stratify (or lump together)
 - well spaced trees of primary interest (MITD)
 - plots (circular)
 - 3.99 (1.26, 2.52, 5.64)
 - plot multiplier
 - to convert to /ha
 - 3.99m radius
 - 50 m²
 - 10,000 m² / 50 m²
 - plot multiplier = 200
 - thus 3 trees in a plot equates to 600 trees / ha
 - M-value (TSS / plot mult.) ... for TSS = 1,000sph?
 - for 900sph?
 - plot intensity
 - it depends (more later)
 - stats
 - determine the average
 - sampling error (conf. limits)
 - use either LCL or mean ... it depends
 - each stratum is independent

- **Survey Procedure**

- [Manual](#) 
- [Reference Cards](#) 
- [Fillable card](#) 

- **Office Review**

- RESULTS
- SP - stocking stds
- history of treatments
- maps/ photos

- **"walk-thru" = Recce**


- drive thru/ walk thru
- stratify?
 - stocking - status, spp, age, ht
 - min. size
 - NP 1/4 ha (>20m wide)
 - SU - do not stratify to <1 ha (i.e. patches of NSR or NFG)

- sample objectives
 - i.e. suppose to be FG but it's questionable
 - do both WS & FG

- sample intensity
 - if block status obvious ...
 - if block status uncertain ...

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- **Collect the data**
 - plot layout
 - grid
 - vector
 - "representative"
 - Visual

 - plot intensity
 - minimum of 5
 - max. 1.5 / ha
 - often (mindless) 1 plot / ha
 - rule of thumb ... no more than 40 plots
 - intensity ~ variability & certainty

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- [data \(plot card\)](#) 
 - plot
 - stratum
 - layer

- total trees
- total conifers

- (countable conifers)
- (count. ht.)

- WS tree species tally
- total ws (remember M)


- age
- ht (m)

- plantable
- preparable

- competing veg (spp., % cover, ht)

- forest health

- inventory label

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- **Summarize the Data**
 - determine stocking
 - calc. the mean
 - calc. stats
 - s (std dev.)
 - sx (std error)
 - t (@90%)
 - CI (conf. interval) a.k.a. sampling error
 - LCL
 - decision
 - $LCL > MSS$... then SR
 - X (mean) $< MSS$... then NSR
 - use mean to determine stocking IF
 - if precise ($CI < 100 * sph$)
 - if max plots done ($1.5 * ha$)
 - MSS is btwn LCL & mean AND $CI > 100 * sph$
 - calc no. of plots needed
 - do extra plots (up to $1.5/ha$)
 - then decide
 - if max plots use mean
 - otherwise, as described
- [fill-in FS 659 Summary card](#) 
- create map & report ...
- **Submit labels/status to RESULTS**