

Scaling Overview

- **What are log scaling & grading?**
 - scaling: quantity spp, & net merch. volume
 - grading: quality ... products

- **Why scale (purpose/ uses of data)**
 - stumpage
 - cut control
 - contractor payment
 - transactions
 - internal inventory

- **Legal Requirements/ Authority**
 - Forest Act - part 6
 - Scaling Regulation
 - Scaling Manual

- **Units of Measure**
 - Logs
 - **m³ (dm³)**
 - fbm
 - special products
 - stacked (cords) - firewood, shake bolts
 - piece count - stakes, posts
 - lineal (m) - poles/ pilings, house logs
 - mass (kg) – chips

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- **History**

- counting stumps
- late 1880's - various "log rules": Scribner (unit: FBM)
- 1895 BC Boardfoot Log Scale (FBM)
 - method: Vol based on top dia. & length (i.e. cylinder)
 - issues
 - 1" BOARDS as end product
 - ... top end so no taper, no kerf

- 1944 BC (Lumber) Cubic Scale
 - method:
 - Smailian's formula
 - ave of top & butt * L
 - 'cunits' (100 ft³)
 - issues
 - suitable for lumber
 - ... not assuming 1" boards
 - ... so no kerf ded'n
 - But
 - ... but still LUMBER based
 - ... 'squaring out' allowed
 - .. allowances for twist, crooks, cracks

- 1965 BC Firmwood Cubic Scale
 - method
 - still Smailian's formula
 - Close Utiliz'n Stds
 - not lumber based ... SOLID net vol
 - ... deduct rot, char, catface & missing ONLY

- 1979 BC Metric Cubic Scale

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- **Log Species & Codes**
 - HE, BA, SP, FI, CE, CY, LA, LO, WH, YE, UU
 - AL, MA, BI, CO, AR, AS

- **Weight Scaling**
 - method
 - weigh all loads
 - scale a few (at random)
 - correction ratio
 - factors affecting the Ratio
 - spp
 - growth rate
 - age
 - moisture content
 - rot
 - bark
 - foreign matter

- **Log Measurements**
 - **Ends**
 - measure d.i.b. ... but units RADS
 - end measured across Dia, but expressed in radius
 - $1 \text{ rad} = 2 \text{ cm}$
 - rad's to nearest cm
 - ave of 2 measures
 - accountant's rule of rounding (to the even)
 - butt flare

 - **Length**
 - nearest 0.1 m
 - accountant's rule of rounding
 - shattered end - mid-point (to give solid vol)

- **The Scale Stick**
 - parts: tine, edge, face (side)
 - **edge**
 - **black**
 - **in RADS**
 - rad class = 2 cm (of dia.)
 - red
 - lines in 20 cm segments
 - used for length (now we use tape)
 - **face**
 - **half cylinder volumes**
 - in dm³

- **Determine gross log volumes**
 - 13r / 17r / 8.0m
 - 13r / 17r / 8.7m