



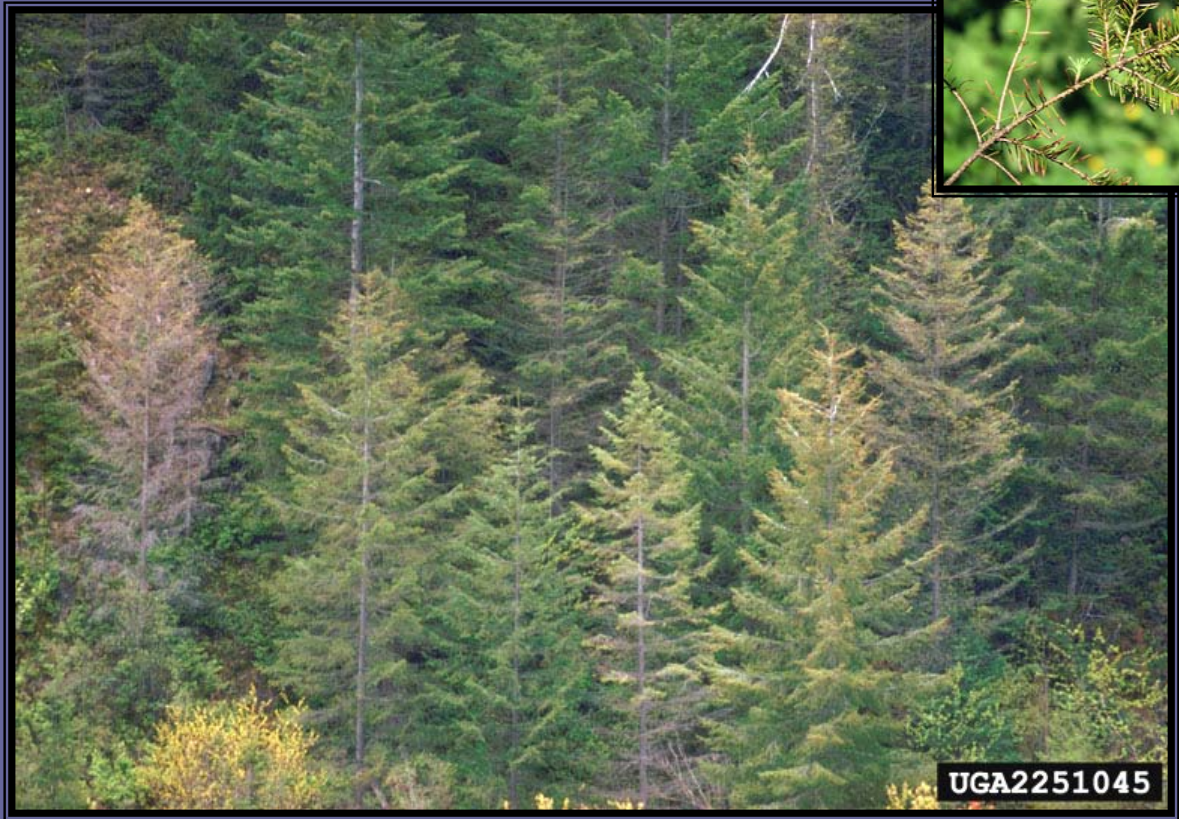
INTRODUCTION AND
PROCEDURES

STAND GROWTH ASSESSMENT TOOL

DATA ENTRY AND
REPORT

CALCULATE SITE
INDEX

CLOSE
PROGRAM



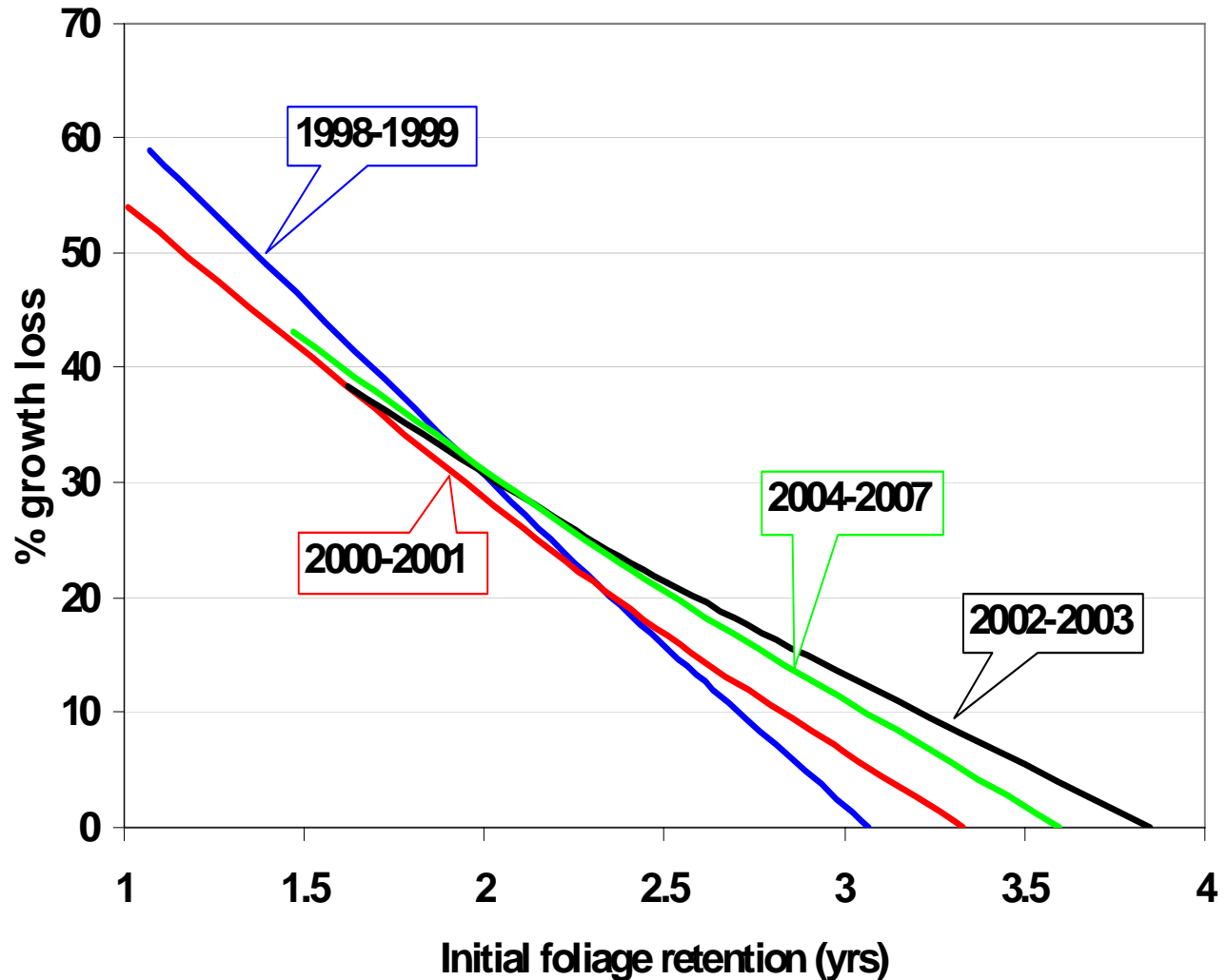
Foliage retention

- **Primary index for determining level of SNC infection**
- **Average number of years of foliage retained within tree crowns**
- **Highly correlated with growth**



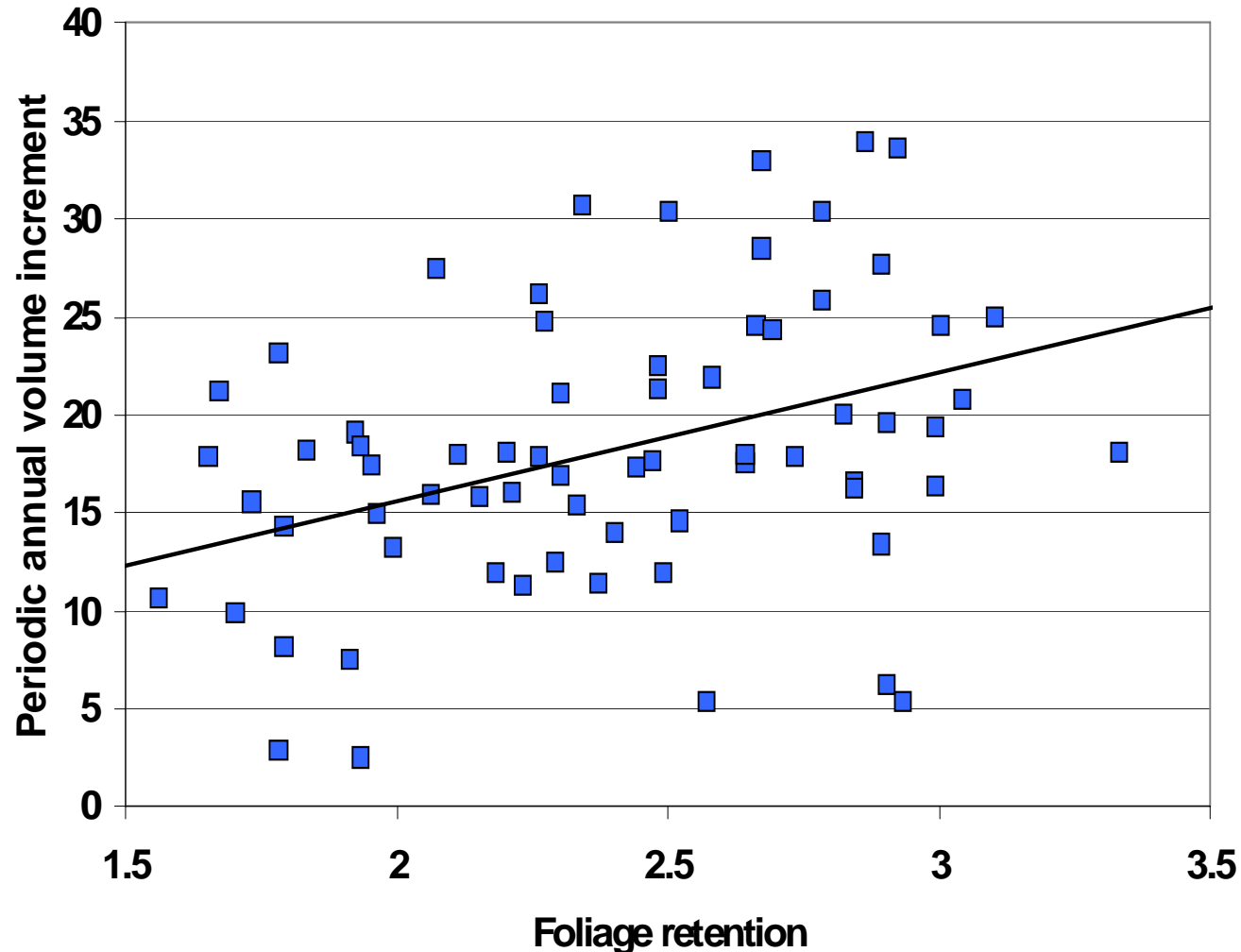
Foliage retention

- Effect of foliage retention on growth varies by year, but is generally stable
- No growth losses with foliage retention >3 yrs



Growth of infected stands

- At a given foliage retention, some stands are growing better than others
- Differences may depend on stocking levels, site index, disease tolerance



Standard of regional growth: SMC-ORGANON

- **Growth model based on growth of Douglas-fir stands in the Coast range**
- **Estimates growth of trees based on site productivity, density, tree and crown size**
- **Enables a comparison between trees growing in an infected stands and what would be expected of it in a healthy stand**

Stand Growth Assessment Tool

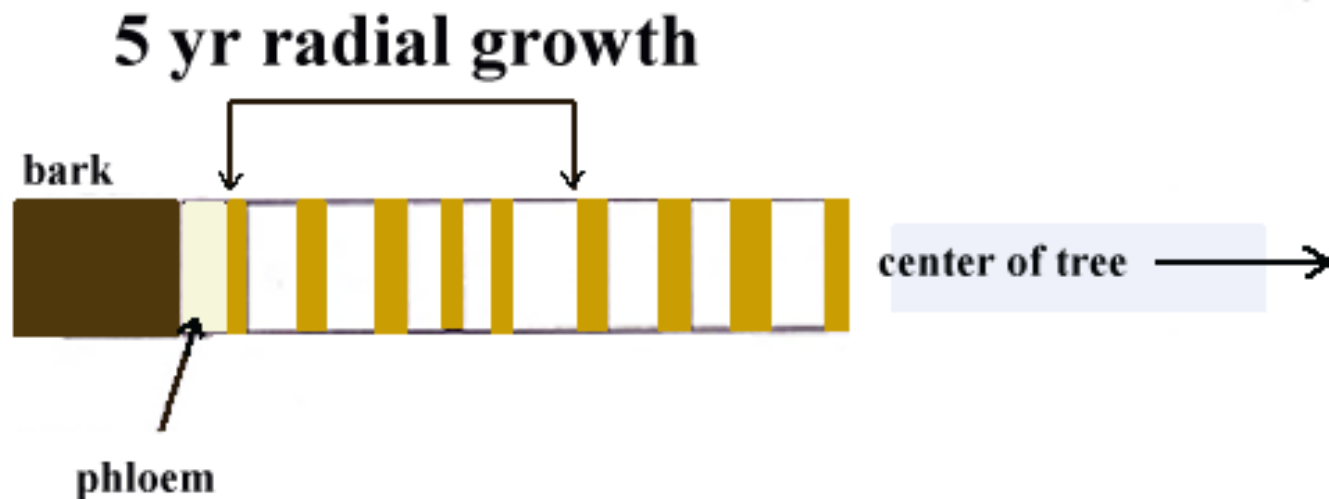
Data requirements

- **Variable radius plots**
 - Diameter of all plot trees
 - Site index for stand
 - 5 yr radial growth of all Douglas-fir
 - Crown ratio of all Douglas-fir

Stand Growth Assessment Tool

Data requirements, tree coring

- **Tree coring for total age**
 - For site index, need age to pith of dominant trees, and height of same tree
- **Tree coring for 5 yr radial growth (1/20 inch)**



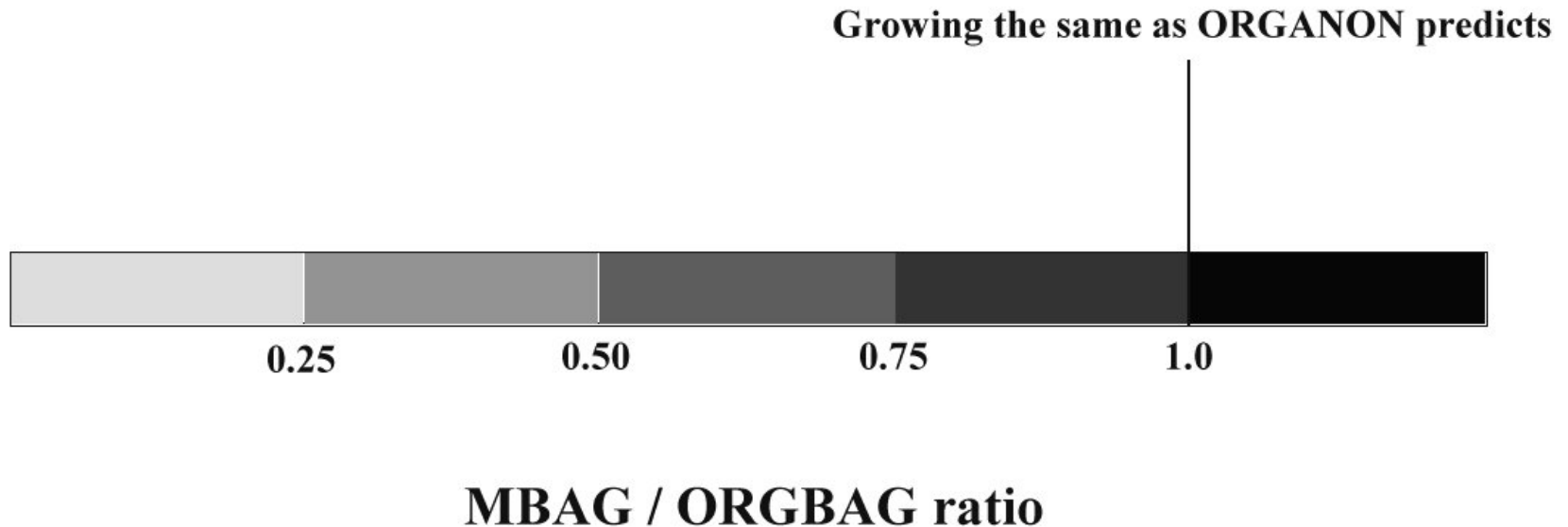
Stand Growth Assessment Tool

Data requirements, Crown ratio

- **Program can handle many different estimates of crown ratio**
 - **Best option is to measure height and height to crown base**
 - **Crown base can be based on lowest live branch**
 - **Crown base can be based on a compacted crown base**
 - **Crown ratio can be estimated**

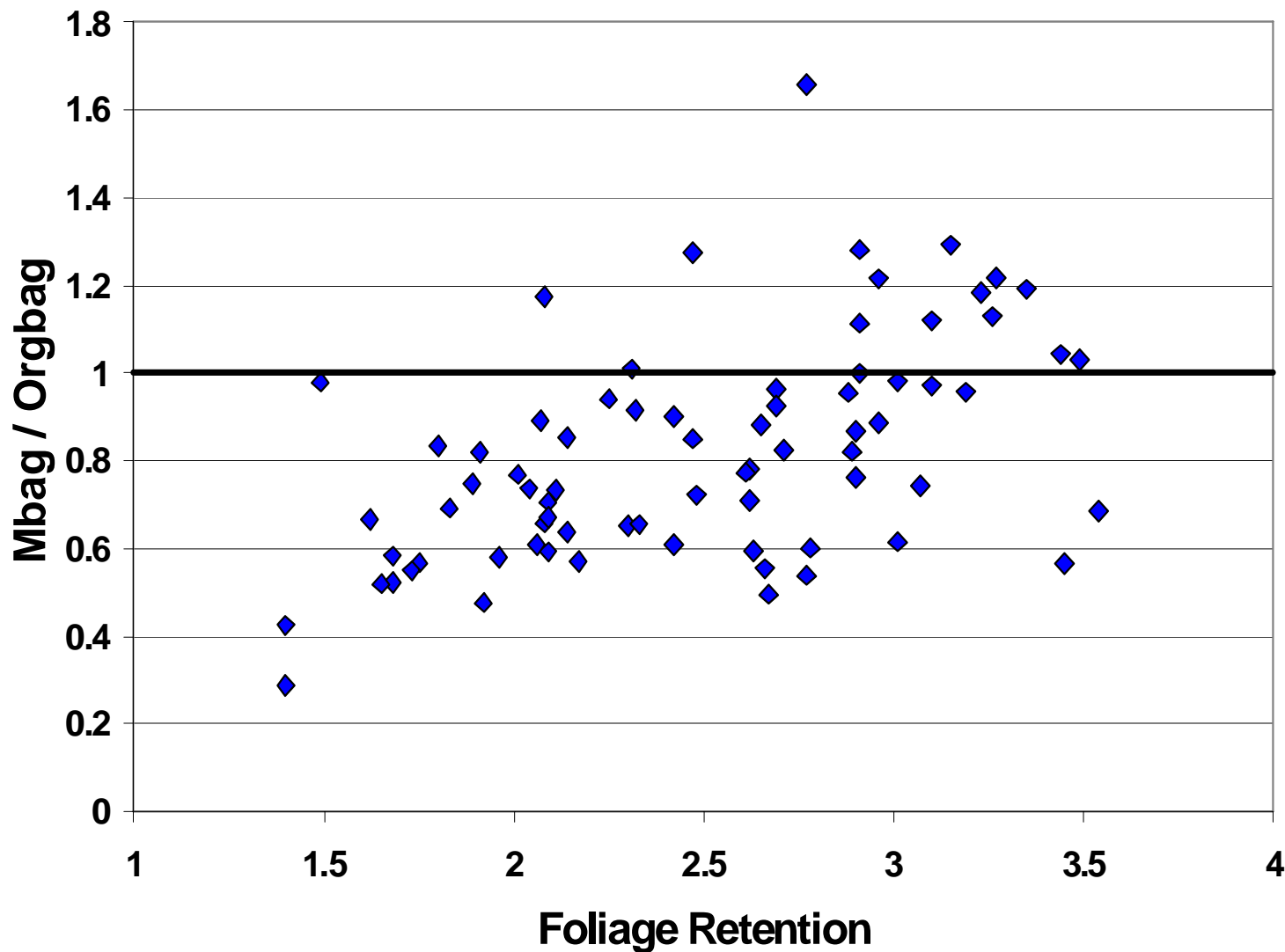
Stand Growth Assessment Tool Output

- Program output is ratio of measured basal area growth (**MBAG**) to predicted basal area growth (**ORGBAG**)



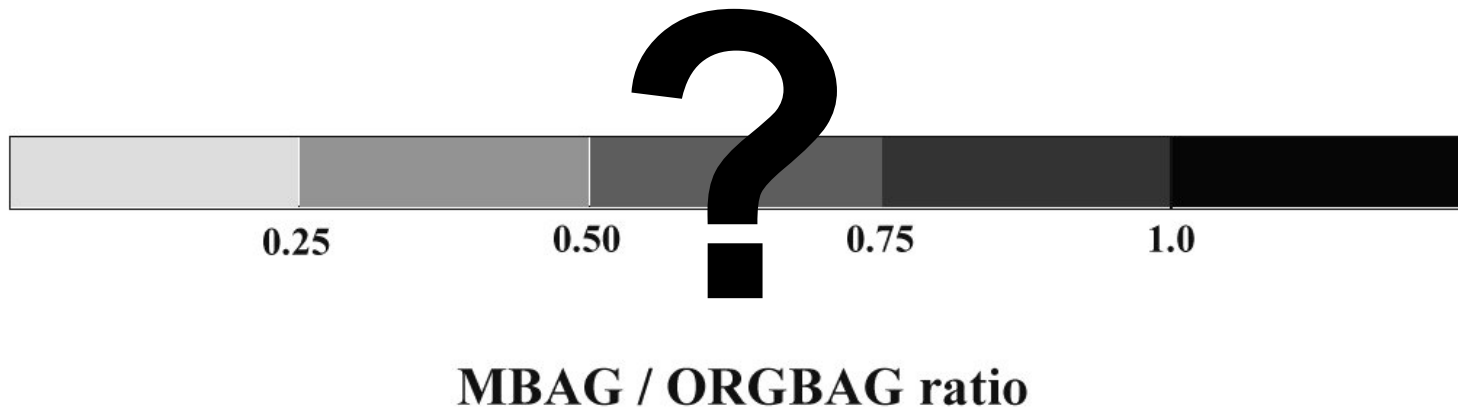
Stand Growth Assessment Tool Interpretation

- **Growth Impact plots**
 - 10-30 yrs



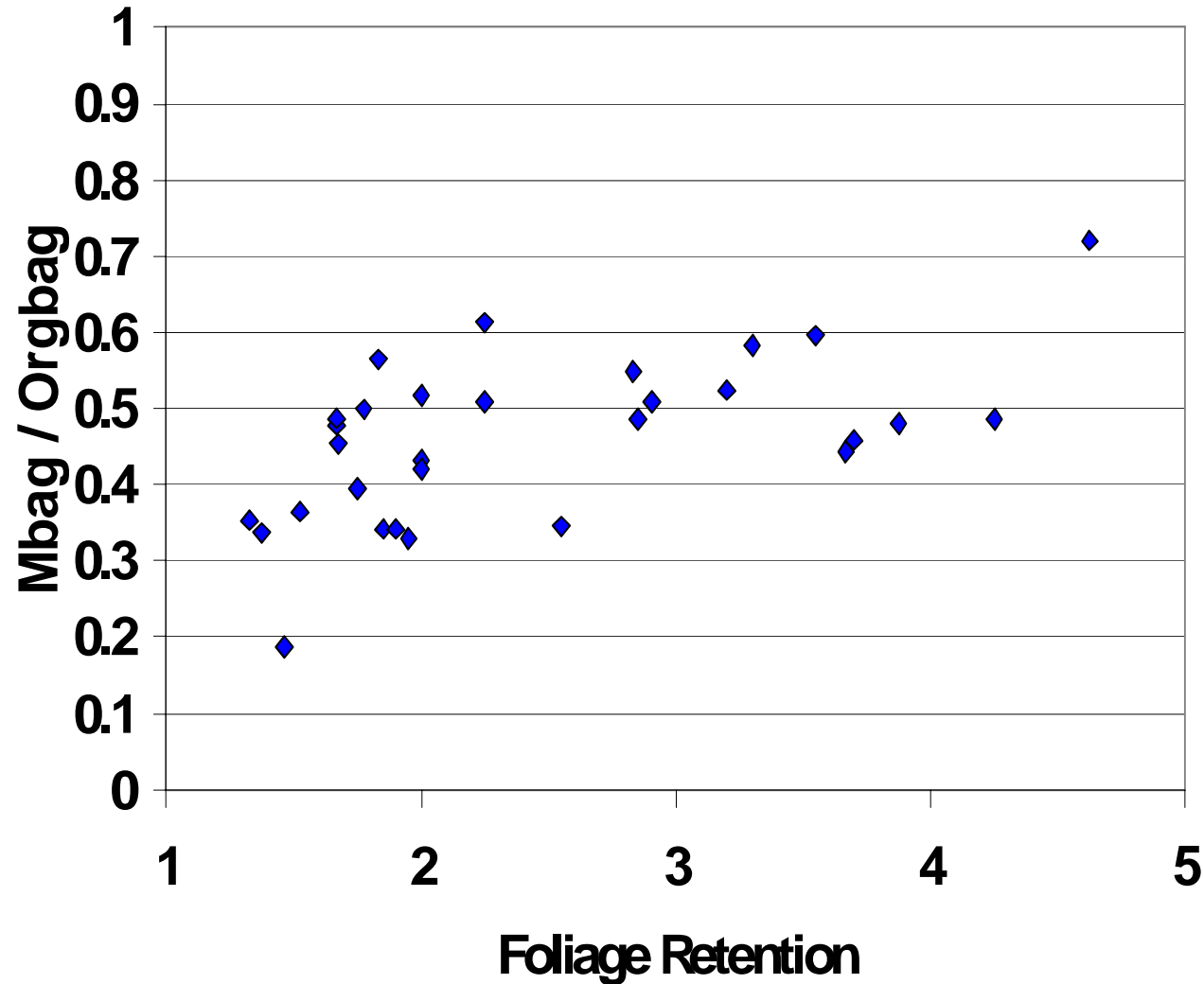
Stand Growth Assessment Tool Interpretation

- We have not established a cut/leave threshold
- Probably best used to rank the relative performance of numerous stands



Stand Growth Assessment Tool Interpretation

- **Commercial thinning plots**
 - 20-60 yrs
 - Based on 2 yrs of measured growth (x 2.5)



Thanks

