

# $^{14}\text{C}$ in Air

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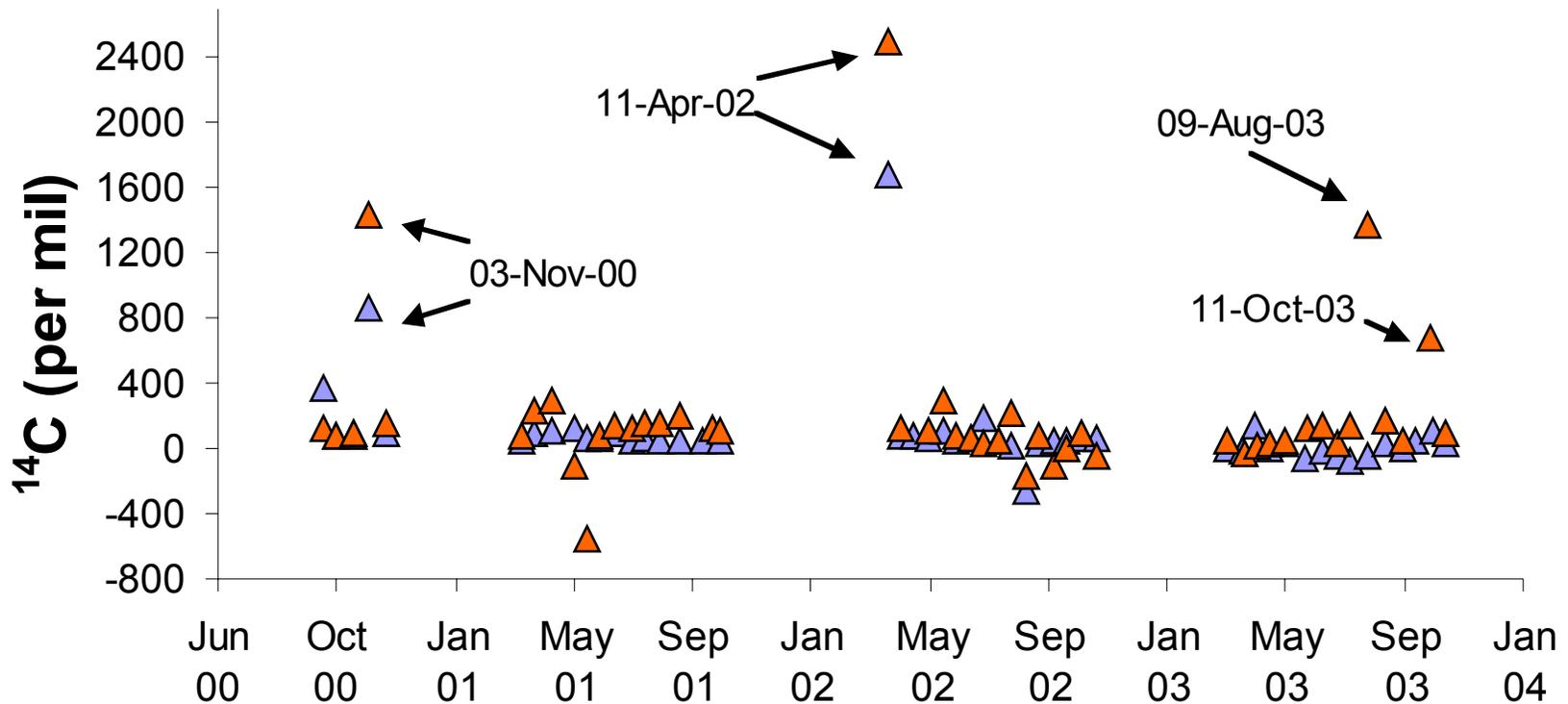
EBIS meeting, Jan 20-21, 2005

# Sampling method



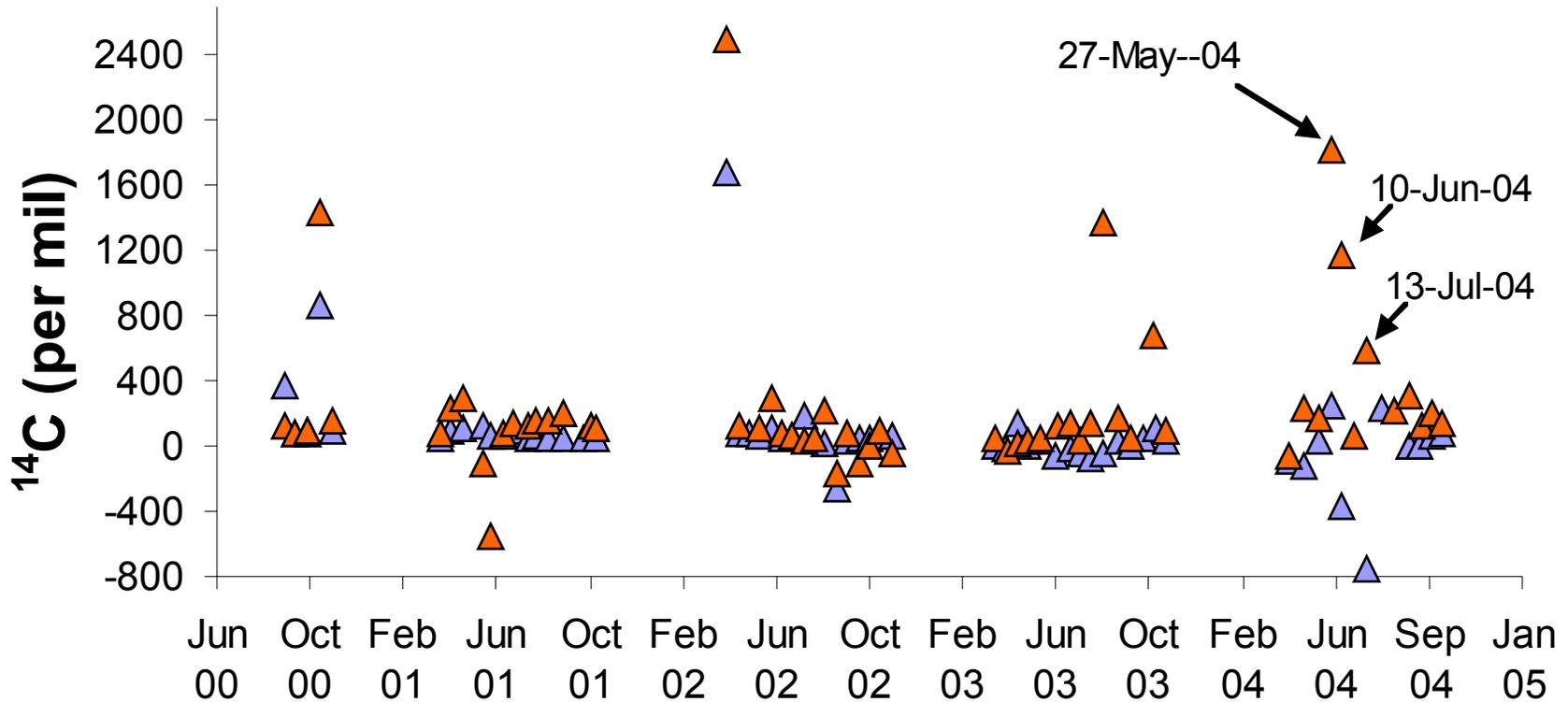
- An evacuated canister is filled with ambient air through a capillary restrictor over a period of two weeks, 24-hr a day
- Air inlet is located at approximately 1.5 m above the ground
- Air samples have been taken continuously during the growing season (March to November) since September 2000
- Monitoring takes place at both, western and eastern sides of ORR (Pine Ridge and Walker Branch respectively)

# $^{14}\text{C}$ in two-week air samples 2000-2003

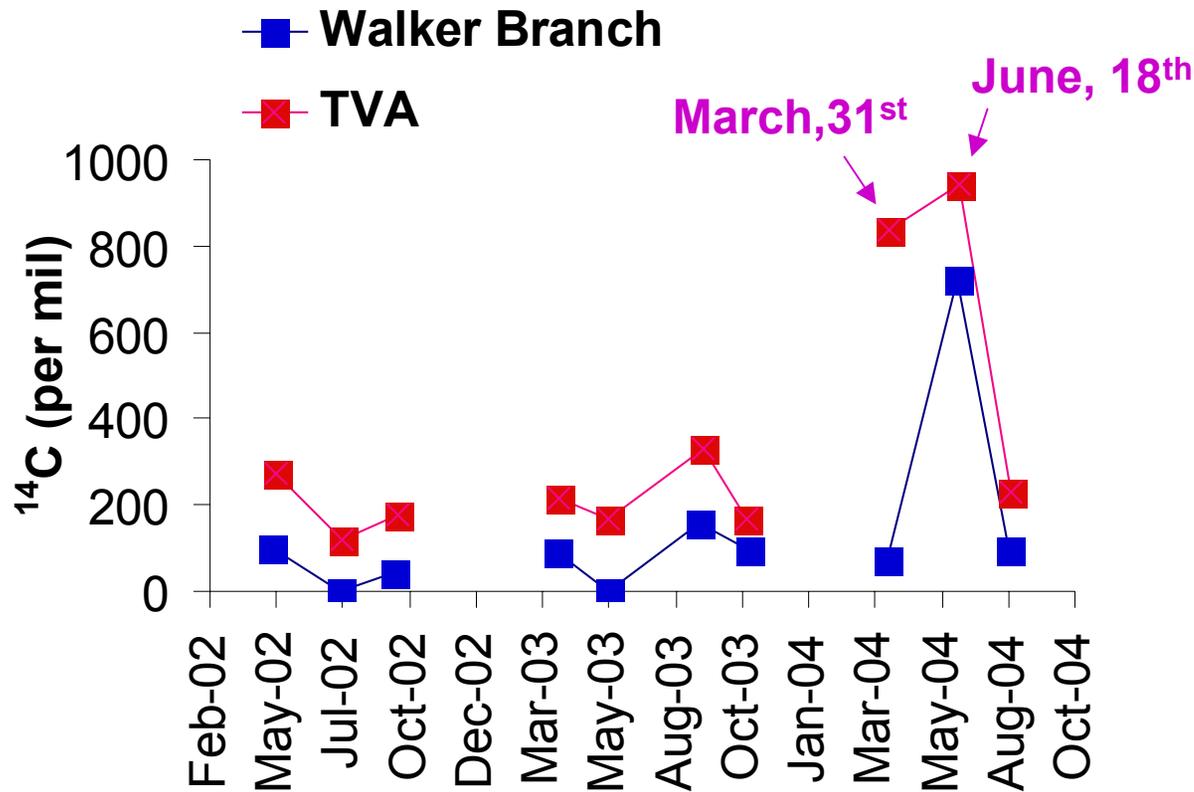


# $^{14}\text{C}$ in two-week air samples 2000-2004

▲ Walker Branch  
▲ Pine Ridge



# $^{14}\text{C}$ in $\text{CO}_2$ from root respiration

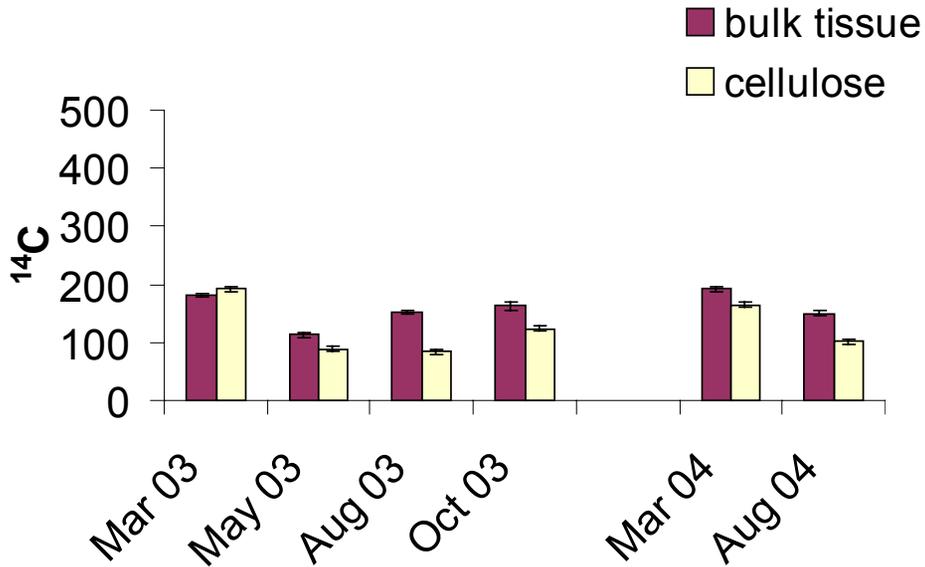


- Earliest release in 2004 not captured in air sample?

- $^{14}\text{C}$  in total soil respiration was immeasurably high at TVA in March (3 chambers out of 6), and similarly high to root respiration at both sites in June

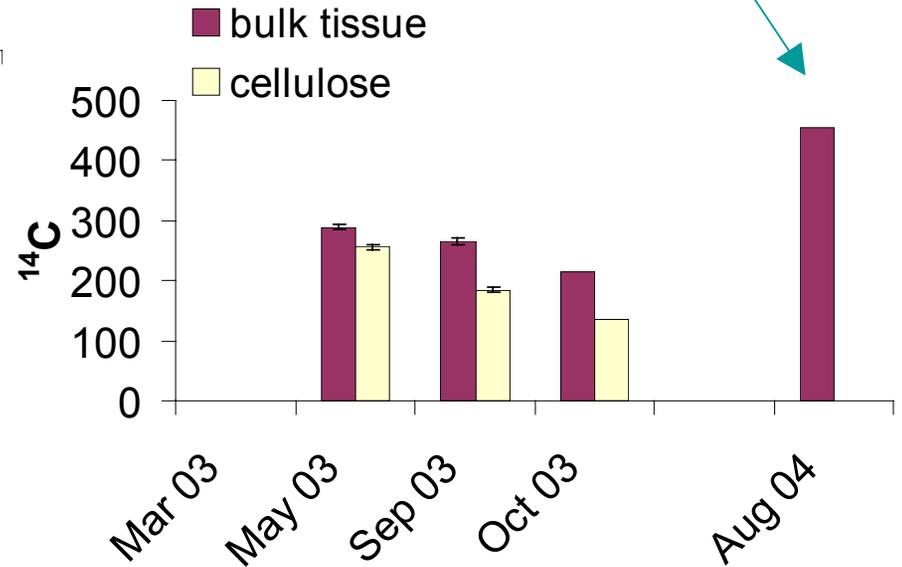
# $^{14}\text{C}$ in root tissue

## Walker Branch



Incorporation of 2004 releases clearly observed at TVA

## TVA



# Conclusions

- New local releases (at least two, in March and May-June) in 2004 that were likely incorporated into trees
- Incorporation of the 2<sup>nd</sup> release (May-June) took place probably at both sites according to values of  $^{14}\text{C}$  in root respiration