

Bulk ^{14}C Trends and Analyses

EBIS 1-Year Project Meeting

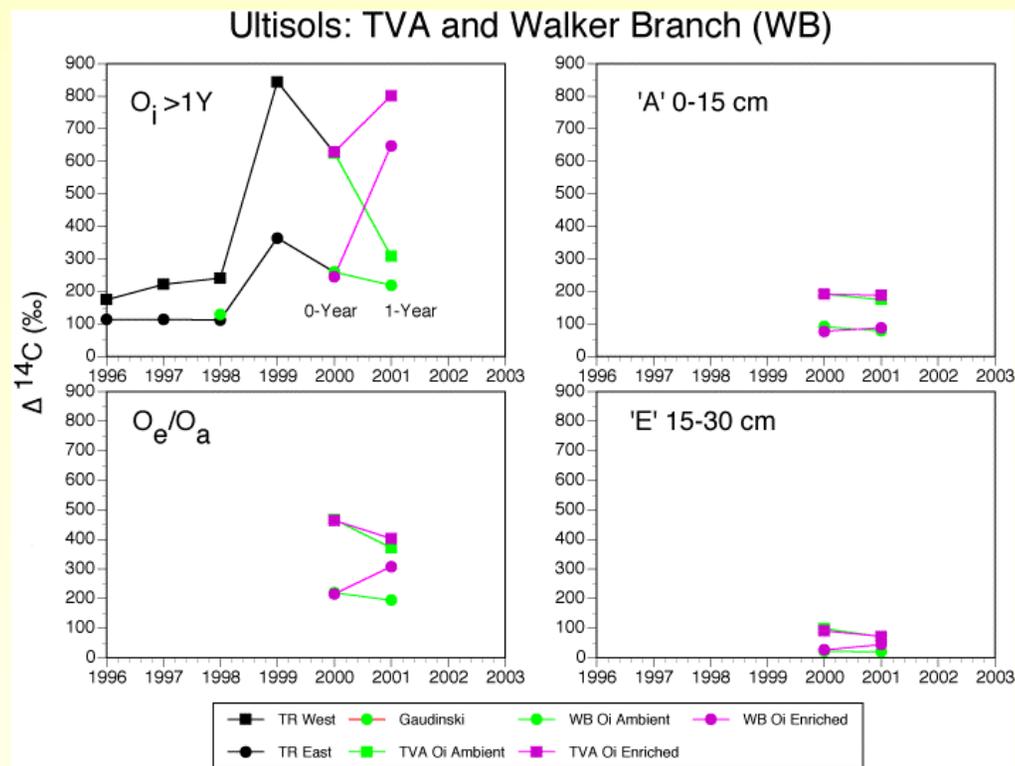
January 27 and 28, 2003

Chris Swanston (LLNL-CAMS)

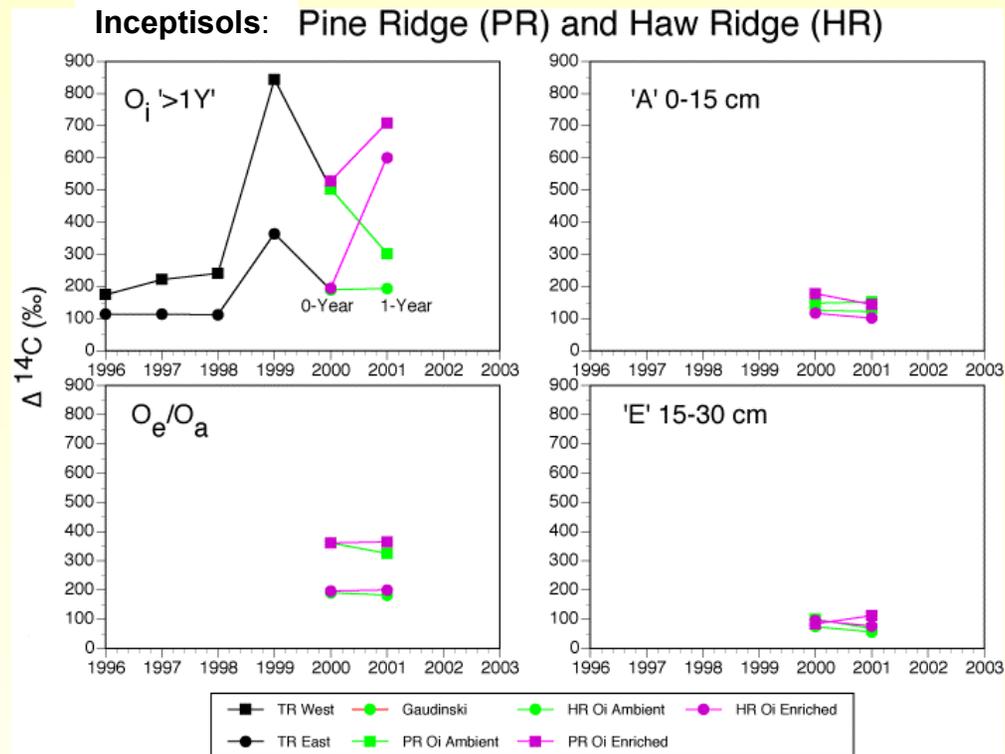
Paul Hanson (ORNL)

John Southon (UCI)





- Tree rings show enrichment in radiocarbon, with litter probably peaking in 1999, then declining.
- Addition of enriched O_i in 0-Year reverses downward trend in $O_i > 1Y$ (reddish lines).
- Addition of ambient O_i in 0-Year continues downward trend in $O_i > 1Y$ (green lines).
- In TVA, lower horizons show little change, or continued dilution of label (roots?)
- In WB, the O_e/O_a shows response to the label



- Inceptisols and Ultisols have same basic trends in $O_i > 1Y$.
- Inceptisols also show little change in lower horizons.

Multiple AMS Runs of Soil Samples from EBIS Plots

SITE	PLOT	DEPTH	STATUS	$\Delta^{14}\text{C}$			
				FIRST	SECOND	THIRD	PLOT MEAN*
0-Year							
Pine Ridge	4	0-15	Back	100.1	105.9	98.8	172.0
Pine Ridge	7	60-75	Back	41.1	205.0	60.6	71.4
Pine Ridge	6	30-45	Enrich	18.8	130.1	16.3	50.0
1-Year							
Pine Ridge	2	Oi	Back	146.6	203.8		217.7
Pine Ridge	2	Oa	Back	629.6	354.3		287.9
Haw Ridge	8	Oe	Enrich	791.5	777.5		546.1
TVA	4	Oe	Enrich	1023.9	940.9		738.7
TVA	2	60-90	Back	-9.5	-34.5		-77.6
Walker Branch	6	60-90	Enrich	119.8	-55.8		-43.1
TVA	6	30-60	Enrich	-105.5	-95.1		-3.0
Pine Ridge	3	60-90	Enrich	-30.4	-37.8		74.5
TVA	1	60-90	Enrich	40.7	-24.1		-112.6

*mean of remaining three plots at a site.

