



## **Mineralization of soil carbon stored by forest trees during exposure to elevated atmospheric carbon dioxide**

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Large scale Free Air Carbon Enrichment experiments have shown that generally there is a substantial increase in forest tree productivity when trees are exposed to elevated atmospheric CO<sub>2</sub>. It is often assumed that this increase in productivity will result in increased C storage in the soil, thus partially mitigating the rise in atmospheric CO<sub>2</sub>. We measured C mineralization rates in soils taken from forest plots exposed to either: ambient conditions, elevated CO<sub>2</sub>, elevated ozone, or elevated CO<sub>2</sub> plus ozone for 12 years. Soils were incubated for one year and the rate of C mineralization was measured. C isotope ratios were also measured in the respired CO<sub>2</sub> to detect the fate of the added CO<sub>2</sub> used during fumigation. The percentage of soil C mineralized during the incubation was significantly greater in soils from CO<sub>2</sub> enriched plots, but it was not enough to account for the fate of the increased production in CO<sub>2</sub> enriched plots. A substantial amount of C from the CO<sub>2</sub> enrichment remained in the refractory fraction of soil C.