Multi-millennia old carbon fluxes from degraded tropical peatland soils via respiration and peat fires

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Molecular sieve apparatus
Take Home Messages...

• Degradation of tropical peatlands via drainage-based agriculture and drainage-based burning, results in soil CO$_2$ emissions which prove millennia-old carbon reserves now being lost to modern, rapid C cycles in tropical peatlands.

• Both soil oxidation and peat fire-based smoke release ancient carbon

• Soil deep instability clear as C lost is older then surface soil ages

• Restoration of PSF via drain blocking and deforestation monitoria can result in recovery of peat storage and sequestration capability

• $^{14}$C analysis and data can help provide end-member for haze origin identification

• $^{14}$C analysis may prove a useful tracer tool for identification of effective restoration approaches