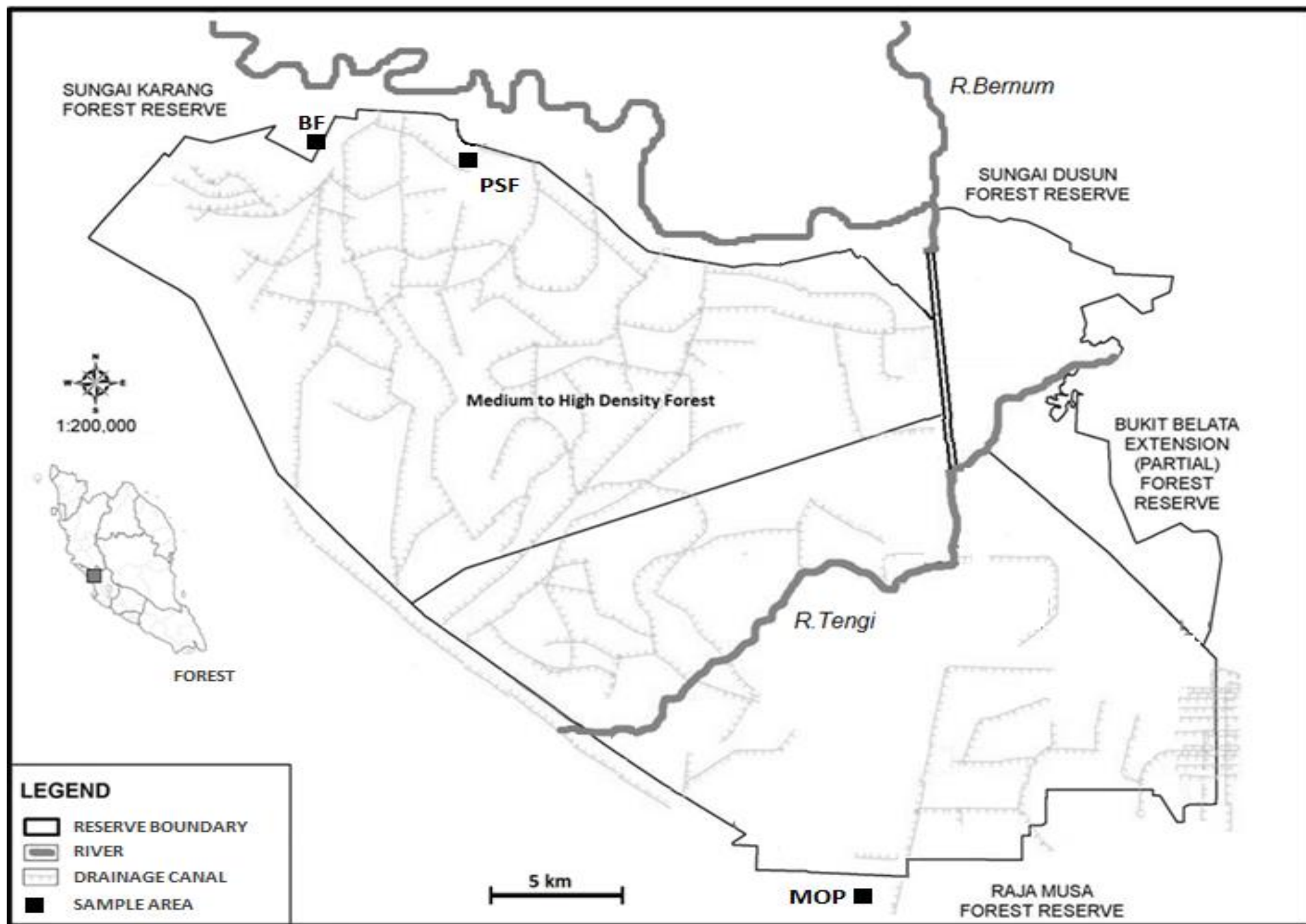


Multi-millennia old carbon fluxes from degraded tropical peatland soils via respiration and peat fires

Stephanie Evers*, Thomas EL Smith, Massimo Lupascu, Mark Garnett, Selvakumar Dhandapani, Catherine Yule

*S.L.Evers@ljmu.ac.uk, School of Biological and Environmental Sciences, Liverpool John Moores University



Molecular sieve apparatus



Take Home Messages...

- Degradation of tropical peatlands via drainage-based agriculture and drainage-based burning, results in soil CO₂ 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 than surface soil ages
- Restoration of PSF via drain blocking and deforestation monitoring can result in recovery of peat storage and sequestration capability
- ¹⁴C analysis and data can help provide end-member for haze origin identification
- ¹⁴C analysis may prove a useful tracer tool for identification of effective restoration approaches