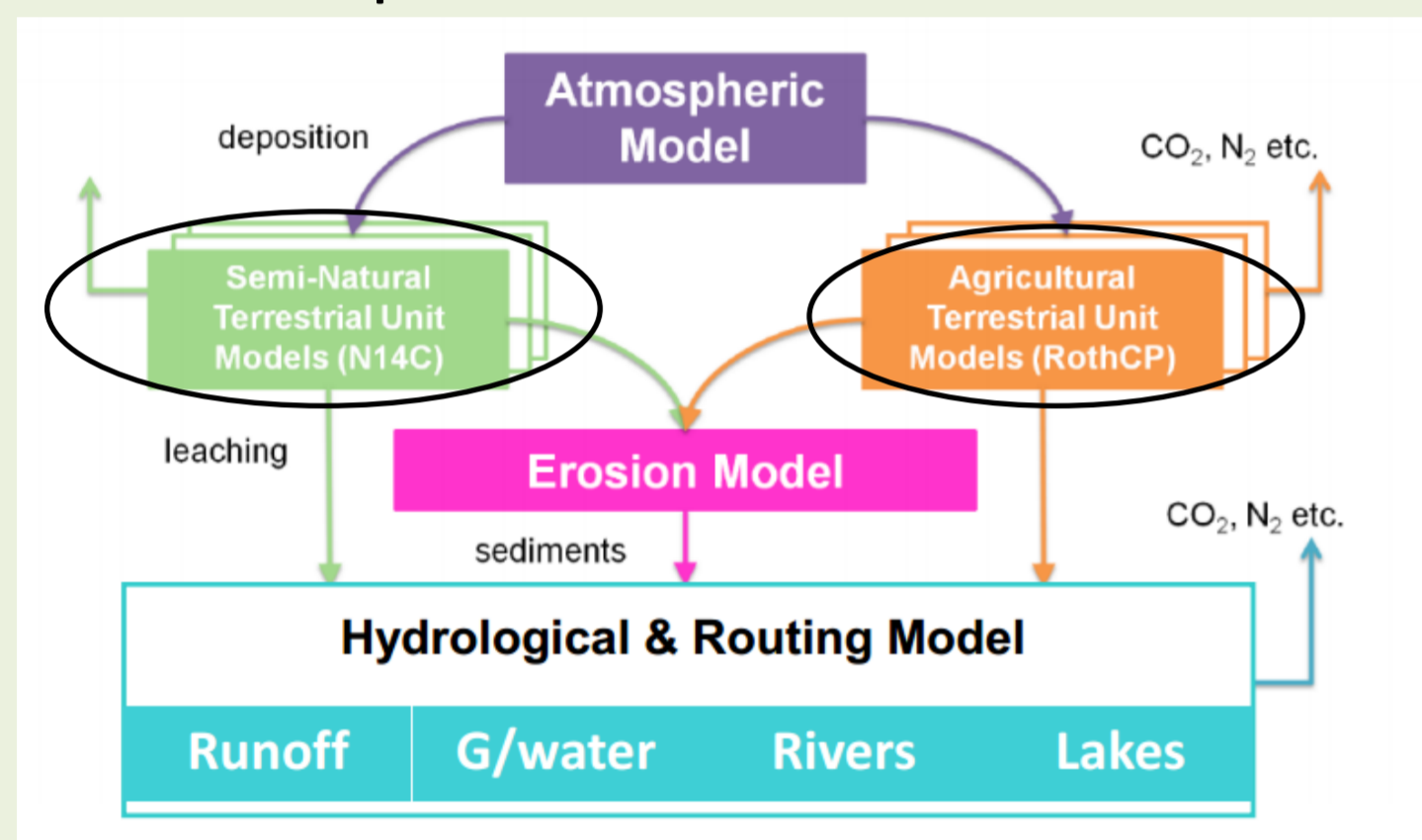


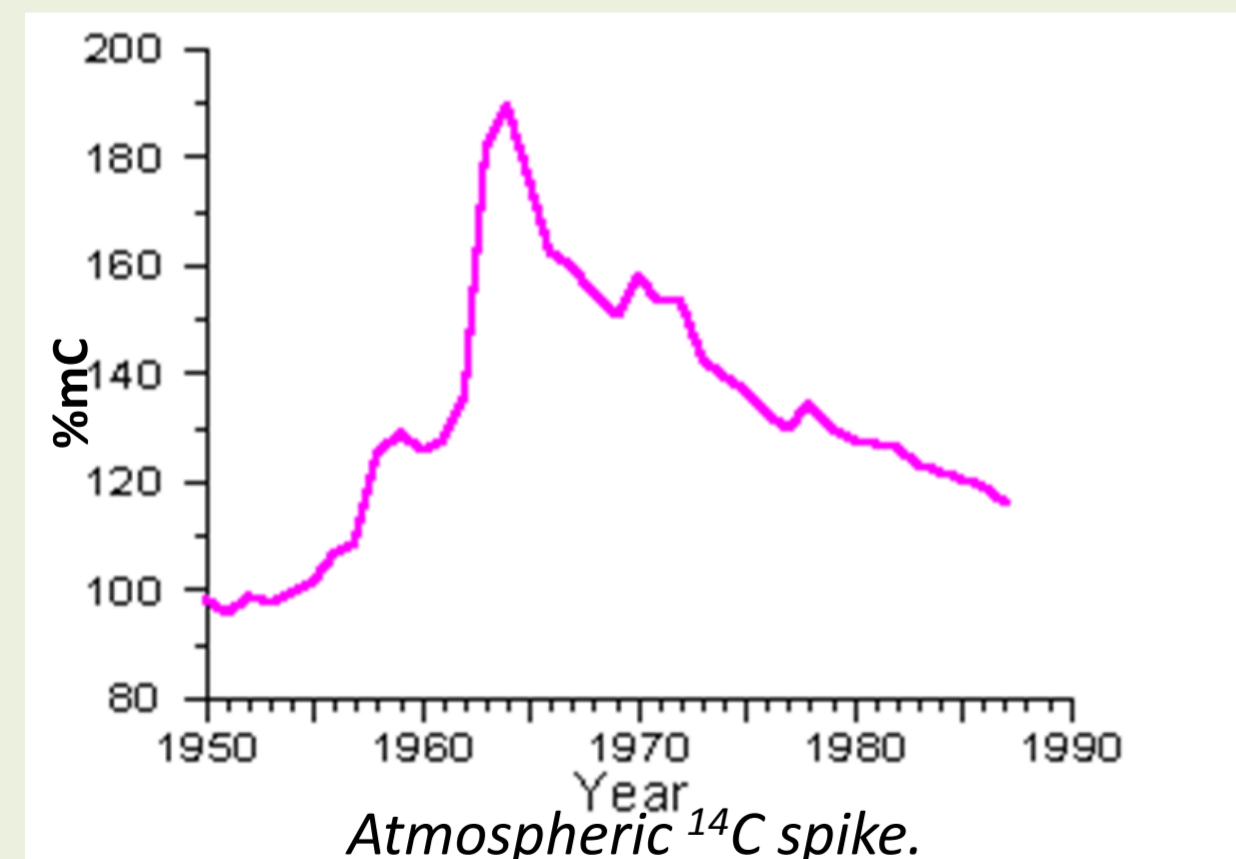
A Comparison of $DO^{14}C$ and $PO^{14}C$ in The Ribble Catchment

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The Long-Term, Large Scale Project is the first national scale assessment of C transport using ^{14}C . New data will be used in the sub models circled below to test predictions.



Atmospheric weapons testing created a **Bomb carbon** spike in ^{14}C concentrations, giving the ability to measure radiocarbon on millennial and decadal timescales.

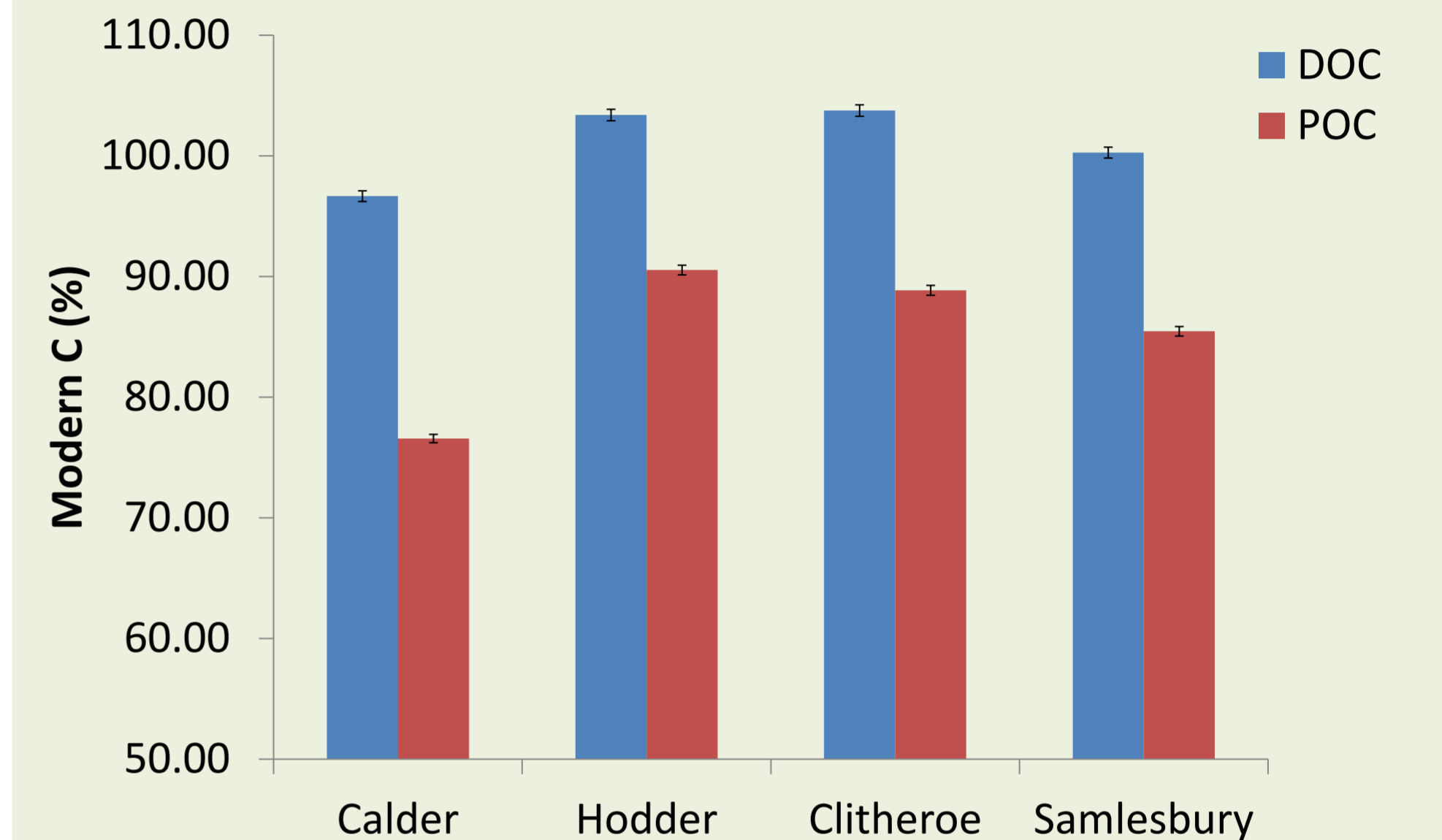


Ribble catchment – NW England
 •2777Km², population 1.25 million, 90% urban.
 •Invariable geology – Mudstone, glacial deposits, sandstone.

River Hodder sub-catchment
 •261Km²
 •Rural - moorland, forestry



River Calder sub-catchment
 244Km², urban, industry – mining, two major cities present, history of industrial pollution.



Results: Average of 4 storm flows collected winter 13/14.

Calder DOC & POC show portion of depleted ^{14}C , from industrial fossil C inputs. Hodder & Clitheroe sites show portions of bomb C, likely from topsoil. Samlesbury represents a mixture of the three upstream sites.

Next Steps

Sampling: Low/summer flow DOC

Model Parameterizing : Simulate river $DO^{14}C$ and $PO^{14}C$ for UK current data. Compare model outputs & observations.