

The Carbon Cycle of Switchgrass

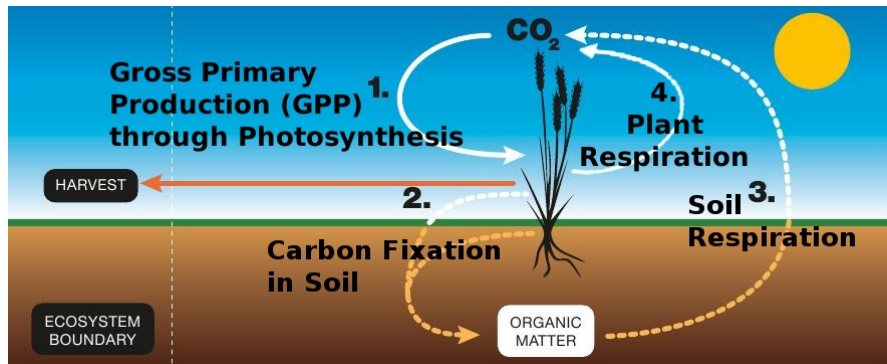
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University of Guelph

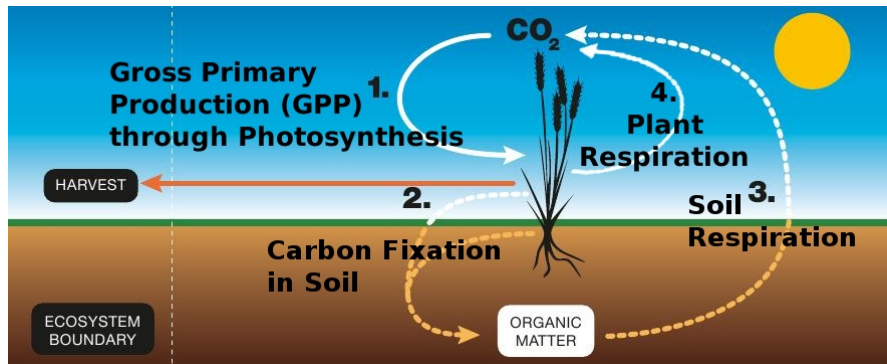
5th September 2014



The Terrestrial Carbon Cycle

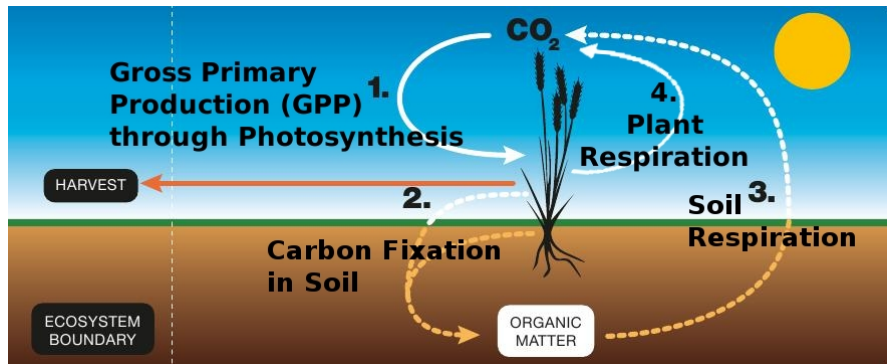


The Terrestrial Carbon Cycle



Switchgrass has the potential to sequester large amounts of CO_2 via its extensive root system

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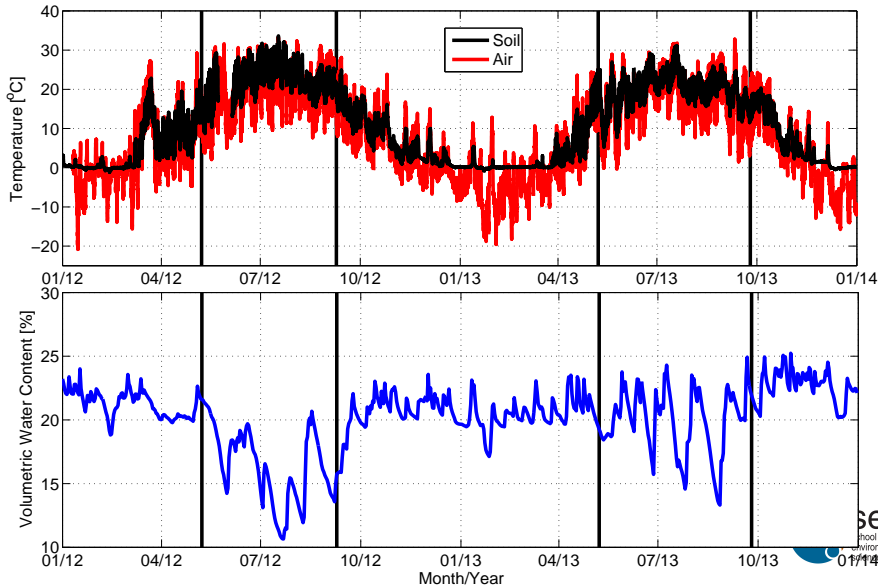
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What is the net carbon budget of Switchgrass?

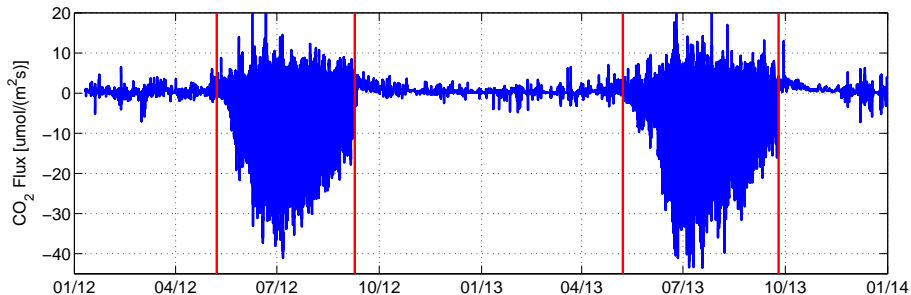
The Measurement Setup



Climatic Conditions in 2012 and 2013



CO₂ Flux Measurements



Results: Annual Budgets

Carbon Budget	2012	2013
Plant C Uptake [kgC/ha]	-13540	-14299
Respiration C Loss [kgC/ha]	9737	10001
Net [kgC/ha]	- 3803	- 4298
Yield [kg/ha]	10900	7900
C removed [kgC/ha]	4860	3713
Net C Balance [kgC/ha]	1057	- 585

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 - In **2013** the field was a net carbon **sink**
- Carbon budget varies greatly between years
- Need to assess long term budget with more measurements and modelling

Acknowledgements

Many thanks to Don Nott for letting us work on his field



Thanks to my advisors Claudia Wagner-Riddle and Jon Warland and everybody in the Agmet group

