

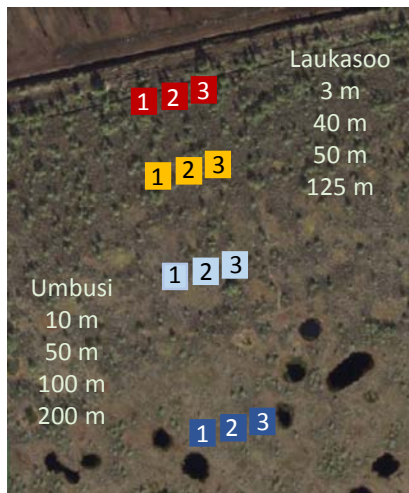
# Net ecosystem exchange of CO<sub>2</sub> and ecosystem respiration along disturbance gradient in two bogs in Estonia

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This study presents the annual estimates of net ecosystem exchange (NEE) of CO<sub>2</sub> in two ombrotrophic bogs along disturbance gradient from deeply drained towards natural background site in Estonia.

Scheme of study sites:



Models:

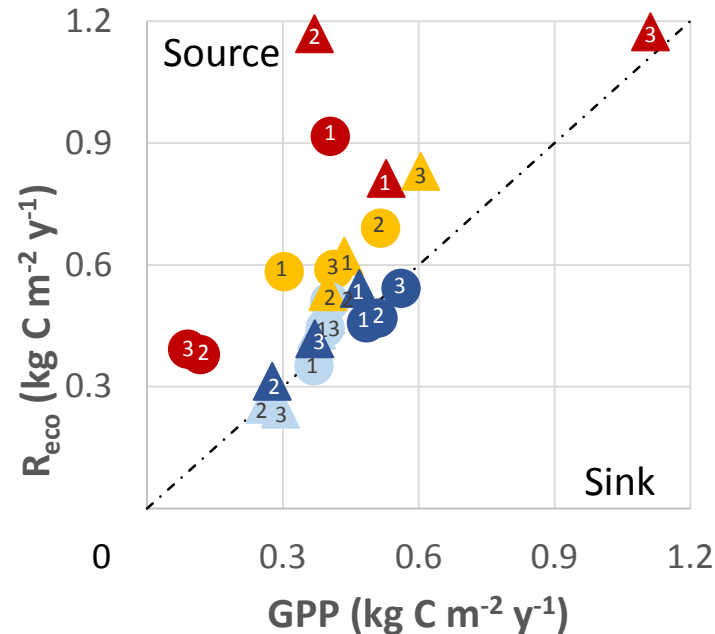
$$NEE = R_{eco} - GPP$$

$$R_{eco} = \exp(T_{air}) \times \mathcal{N}(Pp) \times \mathcal{N}(WTD)$$

$$GPP = rec.hyp(PAR) \times \mathcal{N}(Pp)$$

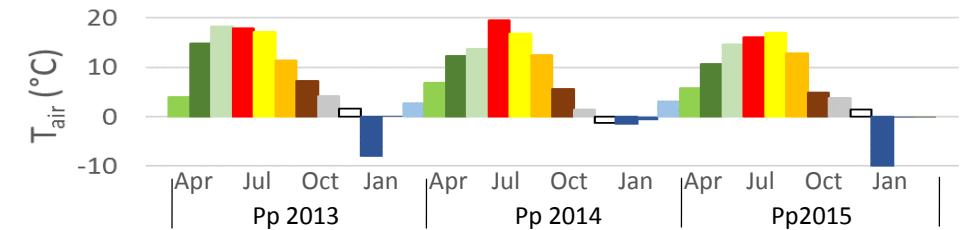
$p < 0.005$ ; adj.  $R^2$  0.52 – 0.87;  $\mathcal{N}$  - Gaussian curve function;  
Pp - Phenological period (day); WTD - water table depth (cm)

Results:



■ P1 ■ P2 ■ P3 ■ P4 △ Laukasoo ○ Umbusi

**Fig 1.** Annual  $R_{eco}$  and GPP in study sites in 2015.



**Fig 2.** Monthly average air temperature from April 2013 to March 2016.

**Table 1.** Annual mean NEE (kg C m<sup>-2</sup> y<sup>-1</sup>) and WTD (cm) in Laukasoo and Umbusi bog along disturbance gradient during phenological period 2013-2015.

	Laukasoo						Umbusi					
	Pp 2013		Pp 2014		Pp 2015		Pp 2013		Pp 2014		Pp 2015	
	NEE	WTD	NEE	WTD	NEE	WTD	NEE	WTD	NEE	WTD	NEE	WTD
P1	0.46	-114	0.45	-101	0.39	-101	0.40	-99	0.38	-87	0.36	-85
P2	0.36	-22	0.36	-23	0.38	-26	0.30	-31	0.27	-31	0.21	-36
P3	0.05	-11	0.04	-12	<b>0.00</b>	-15	0.12	-16	0.12	-14	0.06	-16
P4	0.12	-16	0.11	-16	0.05	-16	0.04	-17	0.05	-17	<b>-0.02</b>	-16