

## Supplementary materials

5 **Table S1: Linear regression coefficient of determination ( $r^2$ ) between Ecosystem Respiration (ER), Gross Primary Production (GPP) and methane emissions ( $\text{CH}_4$ ) measurements with air (Ta) and soil temperature (Ts) at 5 and 20 cm depth, water table level (WTL), photosynthetic active radiation (PAR) and the number of *Molinia caerulea* leaves (N=52) . The number in bold is the highest determination coefficient for each variable in *Sphagnum* and *Sphagnum* + *Molinia* plots. Significance levels of correlation are expressed as  $^+p < 0.05$ ,  $^{++}p < 0.01$ ,  $^{+++}p < 0.001$ .  $^-$  represents a negative or positive relationship, respectively.**

	Determination coefficient ( $r^2$ )					
	<i>Sphagnum</i>			<i>Sphagnum</i> + <i>Molinia</i>		
	ER	GPP	$\text{CH}_4$	ER	GPP	$\text{CH}_4$
Ta	<b>0.73<sup>+++</sup></b>	<b>0.31<sup>--</sup></b>	0	<b>0.51<sup>+++</sup></b>	0.16 <sup>--</sup>	0.09 <sup>+</sup>
Ts at 5 cm	0.65 <sup>+++</sup>	0.19 <sup>--</sup>	0.25 <sup>+++</sup>	0.39 <sup>+++</sup>	0.15 <sup>-</sup>	0.62 <sup>+++</sup>
Ts at 20 cm	0.47 <sup>+++</sup>	0.18 <sup>--</sup>	0.18 <sup>++</sup>	0.40 <sup>+++</sup>	0.28 <sup>-</sup>	<b>0.73<sup>+++</sup></b>
WTL	0.55 <sup>--</sup>	0.12 <sup>+</sup>	<b>0.47<sup>--</sup></b>	0.28 <sup>--</sup>	0.11 <sup>+</sup>	0.12 <sup>-</sup>
PAR	0.48 <sup>+++</sup>	0.28 <sup>--</sup>	0.15 <sup>++</sup>	0.28 <sup>+++</sup>	0.06	0.31 <sup>+++</sup>
<i>Molinia caerulea</i> leaves	NA	NA	NA	0.44 <sup>+++</sup>	<b>0.80<sup>--</sup></b>	0.08 <sup>+</sup>