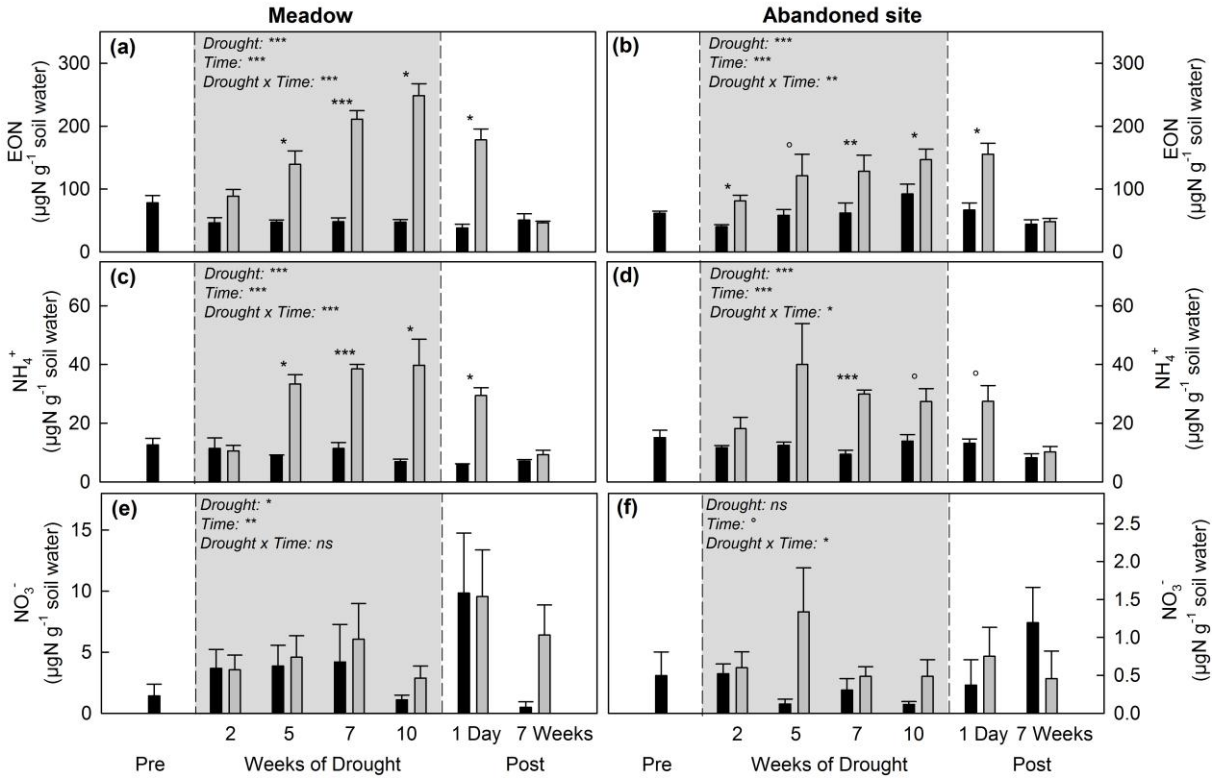

Figure 3. Soil N concentrations per g^{-1} soil water over the course of the experiment at the meadow (left panels) and the abandoned site (right panels) in controls (black bars) and drought treated plots (grey bars). (a,b) Extractable organic N (EON), (c, d) ammonium (NH_4^+) and (e, f) nitrate (NO_3^-, note the different scaling!). The grey background indicates the period of drought treatment. Differences between control and drought at single sampling points were assessed by t-tests with Bonferroni corrected levels of significance; °p<0.1; *p<0.05; **p<0.01, ***p<0.001, (*n=4*, respectively, bars show means; error bars indicate standard error). Effects of drought and sampling time were assessed by two-way repeated measures ANOVA, for further details see Table 3.

Table 1. Soil parameters, nitrogen pools (µg N g^{-1}DW soil and in µg N g^{-1} soil water: *water sol.*), nitrogen turnover rates (µg N g^{-1} DW soil d^{-1}), mean residence times (MRT) of ammonium and nitrate (h), as well as microbial abundances (gene copies g^{-1} DW soil) in soils of the meadow and the abandoned site (*n=28*; means ±standard error). Effects of site and sampling time, as well as their interaction were assessed by repeated-measures ANOVA for non drought-treated controls. Asterisks mark levels of significance: °=<0.1; *=p<0.05; **=p<0.01;***=p<0.001 ([1]differences between sites for WHC_{max}; *n=16,* and SOM content *n=12* were analysed by t-tests).

	Meadow	**Abandoned site**	**Site**		**Time**		**Site x Time**	
	Mean (± SE)	Mean (± SE)	*F(1)*	*p*	*F(6)*	*p*	*F(1,6)*	*p*
SOM content (%)	13.3 (± 0.8)	22.5 (± 1.5)		***[1]				
WHC_{max} (g H_2O g^{-1} DW)	1.5 (± 0.1)	2.0 (± 0.3)		***[1]				
SWC (% of WHC_{max})	44.2 (± 1.7)	45.4 (± 1.8)	0.8		5.2	***	2.6	*
C_{tot} (%)	7.0 (± 0.2)	11.2 (± 0.7)	33.0	***	1.5		0.9	
N_{tot} (%)	0.7 (± 0.1)	0.9 (± 0.1)	15.2	***	1.3		0.8	
C_{tot}:N_{tot}	10.1 (± 0.1)	12.0 (± 0.2)	73.7	***	1.3		0.2	
$\delta^{13}C$ (‰) *bulk soil*	-26.5 (± 0.2)	-25.6 (± 0.1)	44.1	***	0.9		1.4	
$\delta^{15}N$ (‰) *bulk soil*	4.9 (± 0.2)	4.1 (±0.2)	11.2	**	1.4		0.9	
EON	31.4 (± 1.5)	55.6 (± 5.5)	33.5	***	2.1		2.9	*
NH_4^+	5.7 (± 0.6)	11.1 (± 0.9)	42.7	***	2.1		2.8	*
NO_3^-	2.2 (± 0.6)	0.4 (± 0.1)	14.2	***	1.1		3.6	**
MRT_{NH4+}	27.4 (± 6.8)	33.3 (± 6.1)	1.7		2.2	°	1.3	
MRT_{NO3-}	30.3 (±10.0)	2.2 (± 0.7)	29.4	***	1.8		2.5	*
EON *water sol.*	51.3 (± 3.4)	60.6 (± 4.6)	3.8	°	3.9	*	2.5	*
NH_4^+ *water sol*	9.2 (± 0.8)	12.0 (± 0.7)	12.0	**	2.3	°	2.0	°
NO_3^- *water sol*	3.3 (± 0.9)	0.5 (± 0.1)	20.1	***	0.7		4.0	**
Gross N Min	8.5 (± 1.0)	11.1 (± 2.0)	0.1		0.9		1.4	
Gross NH_4^+ Immo	8.1 (± 0.8)	13.4 (± 1.7)	1.1		0.5		1.4	
GrossNit	5.9 (± 0.7)	11.1 (± 1.4)	12.4	**	2.9	*	1.7	
Gross NO_3^-Immo	4.6 (± 0.9)	12.4 (± 1.1)	47.4	***	4.7	***	2.9	
AOA	$1.79x10^6$	$1.82x10^6$	0.0		0.5		0.5	
AOB	$8.68x10^5$	$2.25x10^5$	37.2	***	1.3		0.4	
AOA:AOB ratio	2.8 (± 0.6)	26.3 (±13.2)	27.0	***	0.4		0.7	

Table 3. Effects of the drought simulation and sampling time on all measured soil parameters and microbial abundances for the meadow and the abandoned site assessed by repeated-measures ANOVA (*n=28*), within-factor was plot identity (*n=4*); asterisks mark levels of significance: °=p<0.1; *=p<0.05; **=p<0.01; ***=p<0.001.

	Meadow						**Abandoned site**					
	Drought		Time		Drought x Time		Drought		Time		Drought x Time	
	F(1)	*p*	*F(6)*	*p*	*F(1,6)*	*p*	*F(1)*	*p*	*F(6)*	*p*	*F(1,6)*	*p*
SWC	175.2	***	5.5	***	7.7	***	69.2	***	4.4	**	8.5	***
C_{tot}	3.3		1.4		1.0		2.2		3.8	**	2.1	°
N_{tot}	2.7		1.3		1.0		1.8		3.5	**	1.9	°
C_{tot}:N_{tot}	2.2		1.5		0.6		6.4	*	6.2	***	1.9	
$\delta^{13}C$ (‰) *bulk soil*	3.6	°	1.1		0.7		3.9	°	1.9		0.3	
$\delta^{15}N$ (‰) *bulk soil*	14.9	***	3.6	**	1.8		<0.1		2.8	*	1.0	
EON	2.9	°	4.4	**	3.4	**	1.1		11.3	***	1.1	
NH_4^+	0.4		2.0	°	2.3	°	<0.1		4.0	**	1.3	
NO_3^-	0.2		2.8	*	3.6	**	0.1		0.6		1.2	
MRT_{NH4+}	3.7	°	1.4		1.6		1.8		2.0		2.8	
MRT_{NO3-}	<0.1		1.0		2.3		0.6		1.3		0.4	
EON *water sol.*	82.2	***	5.1	***	6.0	***	66.1	***	15.0	***	4.0	**
NH_4^+ *water sol*	47.6	***	4.3	**	4.7	**	42.2	***	5.7	***	3.2	*
NO_3^- *water sol*	4.2	*	2.2	**	1.8		4.0		0.8	°	2.7	*
Gross N Min	1.9		3.6	**	1.2		<0.1		2.8	*	0.9	
Gross NH_4^+ Immo	4.5	*	2.8	*	1.5		<0.1		0.3		0.5	
GrossNit	0.1		1.2		0.6		4.9	***	3.6	°	4.1	**
Gross NO_3^- Immo	1.1		1.5		3.3	**	7.5	**	8.6	***	2.2	°
AOA	10.8	**	0.8		0.7		0.1		1.1		0.4	
AOB	2.4		1.6		0.8		0.1		0.5		1.2	
AOA:AOB	19.9	***	1.1		1.0		2.5		1.1		0.4	