

Supplemental Table 1: Details for 34 sites used in the analysis. Cited references are included in Table 1.

LTAR Site	EC Tower Name	Phenocam	LTAR Site Type	MAT	MAP	EC Processing Reference	EC Data Source	EC Site Name
ABS-UF	archboldpnot	archboldpnot	grazing	22.7	1000	Gomez-Casanovas et al., 2020	LTAR	US-IL1
ABS-UF	ufona	ufona	grazing	22.2	1007	Gomez-Casanovas et al., 2020	LTAR	US-ONA
CAF	boydnorth	cafboydnorthltar01	cropland	8.6	424	Russell et al., 2019	Ameriflux	US-CF1
CAF	cookeast	cafcookeastltar01	cropland	8.5	456	Russell et al., 2019	Ameriflux	US-CF2
CAF	cookwest	cafcookwestltar01	cropland	8.5	456	Russell et al., 2019	Ameriflux	US-CF3
CMRB	asp	goodwater	cropland	12.1	1015	Wood et al., 2019	LTAR	US-Mo1
CPER	agm	cperagm	grazing	8.2	320	NA	LTAR	US-CX2
CPER	tgm	cpertgm	grazing	8.2	320	NA	LTAR	US-CX1
GACP	arsgacp1	arsgacp1	integrated	19.0	1073	Russell et al., 2019	LTAR	NA
GACP	arsgacp2	arsgacp2	integrated	19.1	1084	Russell et al., 2019	LTAR	NA
GB	arsgreatbasinltar098	arsgreatbasinltar098	grazing	8.5	335	Flerchinger et al., 2020	LTAR	US-Rws
JORN	jerbajada	jerbajada	grazing	15.3	248	Wutzler et al. 2018	LTAR	US-Jo1
JORN	neon	NEON.D14.JORN.DP1.00033	grazing	15.4	235	Metzger et al., 2019	NEON	NEON.D14.JORN.DP4.00200.001
KBS	T3	kelloggcorn	cropland	9.5	867	Abraha et al., 2014	LTAR	US-KM1
KONA	KONA	NEON.D06.KONA.DP1.00033	cropland	12.3	843	Metzger et al., 2019	NEON	NEON.D06.KONA.DP4.00200.001
LCB	op3	arsope3ltar	cropland	12.8	1045	NA	LTAR	US-OPE
NP	mandanh	mandanh5	cropland	5.8	439	Saliendra et al., 2018	LTAR	US-NP1
NP	mandani	mandani2	cropland	5.6	431	Saliendra et al., 2018	LTAR	US-NP2
PRHPA	mead1	mead1	cropland	10.2	727	Suyker et al., 2005	LTAR	US-Ne1
PRHPA	mead2	mead2	cropland	10.2	727	Suyker et al., 2005	LTAR	US-Ne2
PRHPA	mead3	mead3	cropland	10.2	727	Suyker et al., 2005	LTAR	US-Ne3
PRHPA	meadpasture	meadpasture	grazing	10.2	726	Suyker et al., 2005	LTAR	NA
SEG	grasslands	sevilletagrass	grazing	13.9	200	Anderson-Teixeira et al., 2011	Ameriflux	US-Seg
SEG	shrublands	sevilletashrub	grazing	14.0	201	Anderson-Teixeira et al., 2011	Ameriflux	US-Ses
TG	tworfpr	tworfpr	integrated	19.0	863	NA	LTAR	US-Tx2
UCB	hawbeckerreddy	hawbeckerreddy	integrated	9.8	922	Skinner, 2008	LTAR	US-HWB
UMRB	morrisnorth	arsmorris1	cropland	5.8	565	Saliendra et al., 2018	LTAR	NA
UMRB	morrisouth	arsmorris2	cropland	5.8	565	Saliendra et al., 2018	LTAR	NA
UMRB	rosemountcons	rosemountcons	cropland	7.3	802	Griffis et al., 2005	Ameriflux	US-Ro4
UMRB	rosemountconv	rosemountconv	cropland	7.3	802	Griffis et al., 2005	Ameriflux	US-Ro5
UMRB	rosemountnprs	rosemountnprs	cropland	7.3	765	Griffis et al., 2005	Ameriflux	US-Ro6
WGEW	Kendall Grassland	kendall	grazing	17.1	278	Scott et al., 2015	Ameriflux	US-Wkg
WGEW	Lucky Hills Shrubland	luckyhills	grazing	17.5	263	Scott et al., 2015	Ameriflux	US-Whs
NEON-Wood	USxWD	NEON.D09.WOOD.DP1.00033	grazing	4.5	430	Metzger et al., 2019	NEON	NEON.D09.WOOD.DP4.00200.001