

**Table S2.** Site location database information tabulated prior to incorporation in plotting/QGIS mapping for September 2022 literature search papers.

**Table S2.1: “Pure Hydrology”**

Author(s)	Approx. Latitude	Approx. Longitude	Approx. Regional location	Climate region	Notes
Archarya et al. (2)	25.7459	-80.555	Florida Everglades	Am	
Ala-aho et al.	65.2	27	Rokua Esker, Finland	Dfc	
Ala-aho et al.	57	-3.46	Scotland	Cfc	
Autio et al.			None		
Baird et al.			None		
Ballard et al.	54.231667	-2.2525	UK	Cfb	
Belyea	58.087	-5.05	Scotland	Cfb	Another site for this study was farther south: (55.117, -4.4); same climate region
Binet et al.	47.317	2.267	France	Cfb	
Bourgault et al.	45.97	-73.33	Quebec, Canada	Dfb	
Brandyk et al.	52	21.3	Poland	Cfb	
Brust et al.	53.263	8.2675	Germany	Cfb	
Camporese et al. (2)	45.167	12.15	Venice, Italy	Cfa	
Condro et al.	-2.8	110.9	Indonesia	Af	
Couwenberg			None		
Couwenberg et al.	-54.75	-68.33	South Argentina	ET	
Dimitrov et al.	54	-105.1	Saskatchewan, Canada	Dfc	
DIMITROV ET AL.	45.4	-75.5	Ottawa, Canada	Dfb	
DURANEL ET AL.	46.01	1.42	France	Cfb	
GAO ET AL. (3)	54.683	-2.383	UK	Cfc, Cfb, Cfb	2 more study sites included in Wales, around (52.51, -3.81)
GONG ET AL.	65	27	Finland (full country)	Dfc	
GOUZARDI ET AL.	53.5	-1.9	UK	Cfb	
GUERTIN ET AL.	47.2	-93.3	Minnesota, USA	Dfb	
HAAHTI ET AL. (2)	63.88	28.677	Finland	Dfc	
HASSELQUIST ET AL.	64.21	19.84	Sweden	Dfc	
HEFFERNAN ET AL.	25.7459	-80.555	Florida Everglades	Am	
HOKANSON ET AL.	56	-115	Alberta, Canada	Dfc	
HWANG ET AL.	55	-113	Alberta, Canada	Dfc	
IKKALA ET AL.	64.6	28.1	Finland	Dfc	
JAENICKE ET AL.	-2.42	113.63	Indonesia	Af	
JAROS ET AL.	65.07	27.15	Finland	Dfc	
JUTRAS ET AL.	53.7	-78.17	Quebec, Canada	Dfc	
KAPLAN ET AL.	25.7459	-80.555	Florida Everglades	Am	Studied the site conceptually but the model does not draw from actual measurements
KENNEDY AND PRICE	48.783	-72.167	Quebec, Canada	Dfb	
KOIVUSALO ET AL.	64.85	27.7	Finland	Dfc	
LEVISON ET AL.	45	-74	Quebec, Canada	Dfb	
LEWIS ET AL.	51.967	-9.9	Ireland	Cfb	
LI ET AL.	33.5	102.5	Central China	Dwc	
LUSCOMBE ET AL.	51.13	-3.79	UK	Cfb	
MARTTILA ET AL.	67.5	26.5	Finland	Dfc	
MORRIS ET AL.			None		
MUSTAMO ET AL.	64.489	26.395	Finland	Dfc	
NIEMINEN ET AL.	60.45	24.95	Finland	Dfb, Dfc	Study also had a northern site with coordinates (64.72, 26). This is in a different climate region.
NIJP ET AL.	64.183	19.55	Sweden	Dfc	
POVILAITIS AND QUERNER	54.45	23.57	Lithuania	Dfb	
PRICE ET AL.	53.93	-111.2	Alberta, Canada	Dfc	
PULLENS ET AL.	46.02	11.03	Italy	Dfb	
PUTRA ET AL.	-2.42	113.63	Indonesia	Af	
QUERNER ET AL.	52.972	6.582	Netherlands, Poland, Lithuania (see note for other coords)	Cfb, Cfb, Dfb	Note: Poland (53.38, 22.53); Lithuania (54.45, 23.57)
QUERNER ET AL.	54.45	23.57	Lithuania	Dfb	
QUILLET ET AL.	47.52	-75.25	Quebec, Canada	Dfb	
REEVE ET AL.	60.333	-150.83	Alaska, USA	Dsc	
REEVE ET AL.	44.9	-68.75	Maine, USA	Dfb	

REEVE ET AL.	50.8	-88.1	Ontario, Canada	Dfc	
REEVE ET AL.			None		
REEVE ET AL.	48.35	-94.57	Minnesota, USA	Dfb	
Schmalz et al.	54.35	9.431	Germany	Cfb	
Stenberg et al.	66.5	26.7	Finland	Dfc	
Sterte et al.	64.23	19.77	Sweden	Dfc	
Suryadi et al.	-2.42	113.63	Indonesia	Af	
Sutton and Price	53.93	-111.2	Alberta, Canada	Dfc	
Taufik et al. (2)	-2.382	112.74	Indonesia	Af	Six separate sites, all within the same climate region.
Thompson et al. (2)	56.07	115.5	Alberta, Canada	Dwc	
Tiemeyer et al.	54.05	12.75	Germany	Cfb	
Tilak et al.			None		
Urzainki et al.	0.9525	102.184	Indonesia	Af	
Weiss et al.	61.783	24.3	Finland	Dfc	
Zi et al.	51.983	-8.753	Ireland	Cfb	

**Table S2.2: GHG Dynamics**

Author(s)	Approx. Latitude	Approx. Longitude	Approx. Regional location	Climate region	Notes
Arroyo-Mora et al.	45.4	-75.5	Ontario, Canada	Dfb	
Berrittella and van Huissteden	53.8	23.3	Europe (full continent)	Dfb	
Bona et al.	56.13	-106.35	Canada (full country)	Dfc	
Bosio et al.					15 locations all within the same climate region. The northernmost site is at (69.642,18.76) and the southernmost site is at (68.1, 19.9). Many sites along the Sweden-Finland border. The most inland site is at (68.48, 22.31)
	68.3	20.4	Fennoscandia (Norway, Sweden, and Finland)	Dfc	
Chamberlain et al.	38.05	121.765	California, USA	Csa	
Chang et al.	68.2	19.03	Sweden	ET	
Chaudhary et al.					This is a supplement to a <i>Biogeosciences Discussions</i> paper. The Sweden site is Stordalen (appearing quite often), and Canadian site is Mer Bleue (45.5, -75.5)
	68.2	19.03	Sweden and Canada	ET, Dfb	
Deng et al.	68.2	19.03	Sweden	ET	
Deng et al.	64.7	-148.1	Alaska, USA	Dfb	
Dinsmore & Billett	55.8	-3.24	Scotland	Cfb	
Evrendilek	40.79	32.09	Turkey	Cfb	
Farmer et al.			None		
Farmer et al.	-0.715	114.7	SE Asia (region)	Af	
Grant et al.	71.3	-156.5	Alaska, USA	ET	
Henman and Poulter	35.625	-76.04	North Carolina, USA	Cfa	
Lai	45.4	-75.5	Ontario, Canada	Dfb	
LIPPMANN			None		
PARKKARI ET AL.	63.9	26.7	Finland (full country)	Dfc	
PETRESCU ET AL.	52.89	6.62	The Netherlands	Cfb	
PETRESCU ET AL.	70	147	Russia and Sweden	Dsc, ET	The Russian site is Kytalyk reserve in Siberia. Sweden site is Stordalen (68.2, 19.03)
POTTER	68.64	-149.57	Alaska, USA	Dfc	Parameter measurements also taken near Fairbanks (64.8, -147.8)
PREMROV ET AL.	53.297	-7.966	Ireland	Cfb, Cfb	The second site is at (53.347, -8.515)
ROULET & WANG	55.333	-77.5	Quebec, Canada	Dfc	
SHANIN ET AL.	61	24.75	Finland	Dfb, Dfc	Second site is at (62.45, 29.05)
SONNENTAG ET AL.	45.4	-75.5	Ontario, Canada	Dfb	
THIELE ET AL.	52.1	27.13	Belarus	Dfb	Unable to find exact site coordinates, peatlands described generally occur in south Belarus.
WALTER ET AL.	42.46	-84.01	Michigan, USA	Dfa	Inferred that the Michigan peatlands are the same site as in Wania et al., just because the authors overlap.
WANIA ET AL.					Additional sites: Minnesota (47.5,-93.47); Manitoba, Canada (55.75,-99); Finland (63.31); Degero Sweden (64,20); Abisko Sweden (68,19); Central China (33,103)
	42.46	-84.01	Michigan and Minnesota, USA; Canada, Finland, Sweden (2 sites), China	Dfa, Dfb, Dfc, Dfc, Dfc, Dfc, ET, Dwc	
WORRALL & CLAY	54.65	-2.25	UK	Cfb	
WU ET AL.	64.183	19.55	Sweden	Dfc	

**Table S2.3: Peat Accumulation**

Author(s)	Approx. Latitude	Approx. Longitude	Approx. Regional location	Climate region	Notes
Bauer	54	-113	Alberta, Canada	Dfb	

Belyea & Malmer	57.25	13.917	Sweden	Cfb	
Chimner et al.	39.56	-105.81	Colorado, USA	ET	
Frolking et al.	45.4	-75.5	Ontario, Canada	Dfb	
Larsen et al.	25.7459	-80.555	Florida Everglades	Am	
Quillet et al.	45.4	-75.5	Ontario, Canada	Dfb	Parameters were informed by Mer Bleue data for model initiation, but no new monitoring occurred.
Rennermalm et al.	57.5	74.5	West Siberia, Russia (whole region)	Dfb	
Swindles et al.	54.1	-2.17	UK	Cfb	
Wang et al.	60.35	-150.66	Alaska, USA	Dsc	
Wu	45.4	-75.5	Ontario, Canada	Dfb	Parameters were informed by Mer Bleue data for model initiation, but no new monitoring occurred.

**Table S2.4: Global Models**

Author(s)	Approx. Latitude	Approx. Longitude	Approx. Regional location	Climate region	Notes
Bechtold et al.	45 to 65	(internal link to excel)	Northern hemisphere		
Bechtold et al.	45 to 70	-170 to 95	Northern hemisphere		13 locations for in-situ measurements are included in Appendix Table S1.
Bechtold et al.	51	10.3	Germany (throughout whole country)	Cfb	
Burdun et al.	see notes	see notes	Canada, USA, Estonia, Sweden, Finland	Dfb, Dfb, Dfc, Dfc, Dfb	Estonia: (58.88, 26.2); Canada Mer Bleue: (45.41, -75.52); Degero Stormyr Sweden: (64.18, 19.55); Finland: (67.99, 24.2); Lost Creek UA: (46.08, -89.97)
Dietrich et al.			None		
Gong et al.	65.81	26.91	Finland (whole country)	Dfc	
Graham et al.	47.5	-93.45	Minnesota, USA (SPRUCE within Marcell Forest)	Dfb	
Hall et al.	69.817	27.2	Finland	Dfc	
Humpenoeder et al.			None (world)		
Largeron et al.	64.18	19.55	Sweden, Finland	Dfc, Dfc, Cfb	The other Swedish site is Fajemyr (56.25,13.55) and the Finnish site is Siikaneva (61.817, 24.183)
Nungesser et al.	25.7459	-80.555	Florida Everglades	Am	
Petrescu et al.			None (northern hemisphere)		
Qiu et al.		(link to appendix)	Northern hemisphere		30 NH sites taken from FLUXNET/AmeriFlux databases.
Qiu et al.		(link to appendix)	Northern hemisphere		60 NH sites taken from HPPB database.
Spahni et al.			None (northern hemisphere)		

**Table S2.5: Model Combinations**

Author(s)	Approx. Latitude	Approx. Longitude	Approx. Regional location	Climate region	Notes
Aleina et al.	61.93	50.217	Russia	Dfc	
Bernard-jannin et al.	47.317	2.267	France	Cfb	
Bohn et al.	56.483	83.15	Russia	Dfb	
Booth et al.	43.5	-89.1	Wisconsin, USA	Dfb	
De wit et al.	69.133	16.017	Norway	Dfc	
Eppinga et al.			None		
Hahti et al.	63.883	28.667	Finland	Dfc	
Ju et al.			Saskatchewan & Ontario, Canada		Mer Bleue coordinates in sheet. BOREAS super site near Prince Albert National Park SASK: (53.9, -106.1)
Kurylyk et al.	45.4	-75.5	Northern Territories, Canada	Dfb, Dfc	
Wilson et al.	61.313	-121.31	Ireland	Dfc	
Xu et al.	53.347	-8.582	Central UK	Cfb	
	53.421	-1.704			Multiple sites; same climate region

**Table S2.6: Coupled Models**

Author(s)	Approx. Latitude	Approx. Longitude	Approx. Regional location	Climate region	Notes
Brooks et al.	47.5	-93.5	Minnesota, USA	Dfb	
Dimitrov et al.	45.4	-75.5	Ontario, Canada	Dfb	
Gong et al.	62.5	30.5	Finland	Dfc	
Gong et al.	61.783	24.3	Finland	Dfc	
Gong et al.	62.5	30.5	Finland	Dfc	
He et al.	58.383	12.15	Sweden	Cfb	
Heinemeyer et al.	54.68	-2.37	UK	Cfc	
Hilbert et al.			None		
Ise et al.	55.9	-98.35	Manitoba, Canada (BOREAS)	Dfc	
Kasimir et al.	58.383	12.15	Sweden	Cfb	
Lauren et al.	62	26	Finland	Dfc	
Mahdiyasa et al.			None		
Melaku et al.	55	-113	Alberta, Canada	Dfc	
Metzger et al.	64.182	19.557	Sweden	Dfc	
Mezbahuddin et al.	54.95	112.47	Alberta, Canada	Dwc	
Mezbahuddin et al.	-2.345	114.036	Kalimantan, Indonesia	Af	
MI ET AL.	70.817	147.483	Siberia, Russia	Dfc	Weather station data came from an ET (polar tundra) zone.
MORRIS ET AL.			None		
MORRIS ET AL.	60.044	17.327	Sweden	Cfb	
MORRIS ET AL.	54.098	2.173	UK	Cfb	
NAKAYAMA	43.16	144.47	Japan	Dfb	
NAKAYAMA	65.916	70.1	Siberia, Russia	Dfc	
NUNGESSER			Maine and Minnesota, USA;	Dfb, Dfc, Dfb,	Maine location listed. Sweden: (68.367, 19.05);
	44.833	-68.75	Ontario, Canada; Sweden	Dfb	Minnesota Marcell: (47.5, -93.5); Canada: (52.1, -

					81.55)
<b>SHI ET AL.</b>	47.5	-93.5	Minnesota, USA	Dfb	
<b>SULMAN ET AL.</b>			Wisconsin, USA; Alberta and		Mer Bleue listed. Lost Creek WI: (46.082, -89.98);
	45.4	-75.5	Ontario, Canada	DFb, Dfb, Dfc	western peatland AL: (54.95, -112.47)
<b>TANG ET AL.</b>	68.35	19.05	Sweden	Dfc	
<b>TREPEL AND KLUGE</b>	54.217	10.035	Germany	Cfb	
<b>WEBSTER ET AL.</b>	48.35	-83.35	Ontario, Canada	Dfb	
<b>WU ET AL.</b>	45.4	-75.5	Ontario, Canada	Dfb, Dfc	Also at Degero Stormyr, (64.183, 19.55)
<b>YOUNG ET AL.</b>					General model without a specific site, but the paper attempts to model blanket bogs which are the most extensive in central UK.
	52.5	-1.5	UK	Cfb	
Yuan et al.	47.5	-93.5	Minnesota, USA	Dfb	
Zhang et al.			Saskatchewan, Canada;		
	53.95	-105.95	Minnesota, USA	Dfb, Dfc	The other site is Marcell: (47.5, -93.5)