

Supplementary Information

Table SII: Metadata for all sites in the compilation including: Peatland site name, country, latitude (degrees), longitude (degrees), dominant vegetation (NA – no information), peatland type (fen, bog, paramo, rich/poor fen, permafrost, raised bog, eutrophic arctic fen, thermokast, etc), a simplification of the peatland type into high nutrient (fen) or low nutrient (bog) peatland, dating resolution (high >4 dates, low >2 dates in the last millennium, this includes any dating ²¹⁰Pb or ¹⁴C), contributor and reference.

Name	Country	Lat.	Lon.	Dominant Vegetation	Peatland type	Type Simpl.	Res.	Contributor	Reference
Aeroport	Canada	54.1	-72.52	NA	Poor fen	Fen	LOW	M. Garneau	Garneau, M. et al. (2017)
Aeroport	Canada	54.1	-72.52	NA	Poor fen	Fen	LOW	M. Garneau	Garneau, M. et al. (2017)
Aeroport	Canada	54.1	-72.52	NA	Poor fen	Fen	LOW	M. Garneau	Garneau, M. et al. (2017)
Aeroport	Canada	54.1	-72.52	NA	Poor fen	Fen	LOW	M. Garneau	Garneau, M. et al. (2017)
Aeroport	Canada	54.1	-72.52	NA	Poor fen	Fen	LOW	M. Garneau	Garneau, M. et al. (2017)
Aeroport	Canada	54.1	-72.52	NA	Poor fen	Fen	LOW	M. Garneau	Garneau, M. et al. (2017)
Aeroport	Canada	54.1	-72.52	NA	Fen	Fen	LOW	M. Garneau & S. van Bellen	van Bellen, S. et al (2013)
Altay	China	48.8	86.93	Sedges	Fen	Fen	LOW	Y. Zhao	Zhao, Y.; unpublished
Altay	China	48.12	88.35	Sedges	Fen	Fen	LOW	Y. Zhao	Zhao, Y.; unpublished
Antisana A2	Ecuador	-0.51	-78.24	Cushion plants	Paramo	Bog	LOW	J. Hribljan & R. Chimner	Hribljan, J. et al. (2016)
Aucayacu	Peru	-3.94	-74.39	Pole forest	Bog	Bog	LOW	G. Swindles	Swindles, G. et al. (2014)
Bagna nad Stążką	Poland	53.6	17.96	Vascular plants & brown mosses	Rich Fen	Fen	HIGH	M. Lamentowicz	Lamentowicz, M. et al. (2013)
Bagno Mikoleska	Poland	50.56	18.82	<i>Sphagnum</i>	Fen	Fen	HIGH	B. Fialkiewicz-Kozieł	Fialkiewicz-Kozieł et al.(2014)
Baie	Canada	49.1	-68.25	<i>Sphagnum</i>	Bog	Bog	LOW	M. Garneau & G. Magnan	Magnan & Garneau (2014)
Baie	Canada	49.1	-68.24	<i>Sphagnum</i>	Bog	Bog	HIGH	N. Sanderson	PhD thesis: Sanderson, N. (2016)
Baie	Canada	49.07	-68.23	<i>Sphagnum</i>	Bog	Bog	HIGH	M. Garneau	Pratte et al. (2013)
Ballyduff	Ireland	53.09	-6.01	<i>Sphagnum</i>	Bog	Bog	HIGH	F. Mitchell	Charman et al (2013)
Beretta Bog	Canada	66.68	-130.97	Trees	Permafrost	Bog	HIGH	D. Beilman	Beilman (2016)
Borralleiras da Cal Grande	Spain	43.59	-7.51	<i>Ericaceae</i> , blanket bog	Bog	Bog	LOW	A. Martínez Cortizas	Mighall et al (2006)
Borth Bog (Cors Fochno)	UK	52.5	-3.99	<i>Sphagnum</i>	Bog	Bog	LOW	T. Mighall	Mighall et al. (2009)
Borth Bog (Cors Fochno)	UK	52.5	-4.01	<i>Sphagnum</i>	Bog	Bog	LOW	L. Orme	Orme et al. (2015)
Burns Bog	Canada	49.11	-122.97	<i>Sphagnum</i>	Bog	Bog	HIGH	M. Clifford & B. Booth	Clifford, M. & Booth B.; unpublished
Burnt Village	USA	51.13	-55.93	<i>Sphagnum</i>	Bog	Bog	LOW	D. Charman	Charman et al (2015)
Burnt Village Bog	USA	51.13	-55.93	<i>Sphagnum</i>	Bog	Bog	LOW	D. Charman	Charman et al (2015)
C_site_01	Russia	60.17	72.83	NA	Bog	Bog	LOW	Z. Yu	Yu, Z., Beilman, D.W. & Jones, M.C. (2009)
C_site_02	Russia	60.17	72.83	NA	Bog	Bog	LOW	Z. Yu	Yu, Z., Beilman, D.W. & Jones, M.C. (2009)
C_site_03	Russia	56.83	78.42	NA	Bog	Bog	LOW	Z. Yu	Yu, Z., Beilman, D.W. & Jones, M.C. (2009)
C_site_04	Russia	56.33	84.58	NA	Fen	Fen	LOW	Z. Yu	Yu, Z., Beilman, D.W. & Jones, M.C. (2009)

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C_site_05	USA	60.45	-151.25	NA	Fen	Fen	LOW	Z. Yu	Yu, Z., Beilman, D.W. & Jones, M.C. (2009)
C_site_06	USA	60.64	-151.08	NA	Fen	Fen	LOW	Z. Yu	Yu, Z., Beilman, D.W. & Jones, M.C. (2009)
C_site_07	USA	60.42	-150.9	NA	Fen	Fen	LOW	Z. Yu	Yu, Z., Beilman, D.W. & Jones, M.C. (2009)
C_site_08	USA	60.78	-150.82	NA	Fen	Fen	LOW	Z. Yu	Yu, Z., Beilman, D.W. & Jones, M.C. (2009)
C_site_09	USA	64.88	-147.77	NA	Fen	Fen	LOW	Z. Yu	Yu, Z., Beilman, D.W. & Jones, M.C. (2009)
C_site_10	Canada	54.15	-130.25	NA	Bog	Bog	LOW	Z. Yu	Yu, Z., Beilman, D.W. & Jones, M.C. (2009)
C_site_11	Canada	53.58	-118.02	Brown mosses	Fen	Fen	LOW	Z. Yu	Yu, Z., Beilman, D.W. & Jones, M.C. (2009)
C_site_12	Canada	52.45	-116.2	<i>Cyperaceae</i> & moss	Fen	Fen	LOW	Z. Yu	Yu, Z., Beilman, D.W. & Jones, M.C. (2009)
C_site_13	Canada	55.02	-114.15	NA	Bog	Bog	LOW	Z. Yu	Yu, Z., Beilman, D.W. & Jones, M.C. (2009)
C_site_14	Canada	61.8	-121.4	NA	Fen	Fen	LOW	Z. Yu	Yu, Z., Beilman, D.W. & Jones, M.C. (2009)
C_site_15	Canada	68.29	-133.25	NA	Fen	Fen	LOW	Z. Yu	Yu, Z., Beilman, D.W. & Jones, M.C. (2009)
C_site_16	Canada	69.49	-132.67	NA	Fen	Fen	LOW	Z. Yu	Yu, Z., Beilman, D.W. & Jones, M.C. (2009)
C_site_17	Canada	55.85	-107.68	NA	Bog	Bog	LOW	Z. Yu	Yu, Z., Beilman, D.W. & Jones, M.C. (2009)
C_site_18	Canada	64.71	-105.58	NA	Fen	Fen	LOW	Z. Yu	Yu, Z., Beilman, D.W. & Jones, M.C. (2009)
C_site_19	Canada	66.45	-104.84	NA	Fen	Fen	LOW	Z. Yu	Yu, Z., Beilman, D.W. & Jones, M.C. (2009)
C_site_20	Canada	59.88	-104.2	NA	Bog	Bog	LOW	Z. Yu	Yu, Z., Beilman, D.W. & Jones, M.C. (2009)
C_site_21	Canada	45.68	-74.05	NA	Bog	Bog	LOW	Z. Yu	Yu, Z., Beilman, D.W. & Jones, M.C. (2009)
C_site_22	Canada	82.33	-68.25	NA	Fen	Fen	LOW	Z. Yu	Yu, Z., Beilman, D.W. & Jones, M.C. (2009)
C_site_23	Canada	47.93	-64.5	NA	Bog	Bog	LOW	Z. Yu	Yu, Z., Beilman, D.W. & Jones, M.C. (2009)
C_site_24	Canada	45.2	-60.27	<i>Sphagnum</i> & dwarf shrubs	Raised Bog	Bog	LOW	Z. Yu	Yu, Z., Beilman, D.W. & Jones, M.C. (2009)
C_site_25	Scotland	57.52	-5.16	NA	Bog	Bog	LOW	Z. Yu	Yu, Z., Beilman, D.W. & Jones, M.C. (2009)
C_site_26	Scotland	57.56	-5.38	NA	Bog	Bog	LOW	Z. Yu	Yu, Z., Beilman, D.W. & Jones, M.C. (2009)
C_site_27	Scotland	57.69	-5.69	NA	Bog	Bog	LOW	Z. Yu	Yu, Z., Beilman, D.W. & Jones, M.C. (2009)
C_site_28	Finland	68.4	23.55	NA	Bog	Bog	LOW	Z. Yu	Yu, Z., Beilman, D.W. & Jones, M.C. (2009)
C_site_29	Finland	68.4	23.55	NA	Fen	Fen	LOW	Z. Yu	Yu, Z., Beilman, D.W. & Jones, M.C. (2009)
C_site_30	Finland	60.82	26.95	NA	Bog	Bog	LOW	Z. Yu	Yu, Z., Beilman, D.W. & Jones, M.C. (2009)
C_site_31	Finland	65.65	27.32	NA	Fen	Fen	LOW	Z. Yu	Yu, Z., Beilman, D.W. & Jones, M.C. (2009)
C_site_32	Finland	65.65	27.32	NA	Fen	Fen	LOW	Z. Yu	Yu, Z., Beilman, D.W. & Jones, M.C. (2009)
C_site_33	Finland	65.65	27.32	NA	Fen	Fen	LOW	Z. Yu	Yu, Z., Beilman, D.W. & Jones, M.C. (2009)
Caribou Bog	Canada	66.68	-130.97	<i>Sphagnum fuscum</i> & lichen	Permafrost	Bog	HIGH	D. Beilman	Beilman (2016)
Cayambe-Coca_C2	Ecuador	-0.32	-78.2	<i>Plantago rigida</i> & <i>Sitichia muscoides</i>	Paramo Bog	Bog	LOW	J. Hribljan & R. Chimner	Hribljan, J. et al. (2016)
Cayambe-Coca_C3	Ecuador	-0.31	-78.19	<i>Plantago rigida</i> & <i>Sitichia muscoides</i>	Paramo Bog	Bog	LOW	J. Hribljan & R. Chimner	Hribljan, J. et al. (2016)
Cayambe-Coca_C5	Ecuador	-0.33	-78.2	<i>Plantago rigida</i> & <i>Sitichia muscoides</i>	Paramo Bog	Bog	HIGH	J. Hribljan & R. Chimner	Hribljan, J. et al. (2016)

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Cayambe-Coca_C6	Ecuador	-0.33	-78.22	<i>Disterigma, Hypericum, Ranunculus spp.</i>	Paramo Fen	Fen	LOW	J. Hribljan & R. Chimner	Hribljan, J. et al. (2016)
Cerro Negro	Patagonia	-52.07	-72.03	<i>Sphagnum</i>	Bog	Bog	HIGH	J. Loisel	Loisel J. & Yu Z. (2013)
Colesdalen	Svalbard	78.09	14.98	Bryophyte	Eutrophic Arctic	Fen	HIGH	D. Beilman	Beilman, D.; unpublished
Corser Bog	USA	60.59	-145.45	<i>Sphagnum</i>	Bog	Bog	LOW	J. Nichols	Nichols, J et al. (2014)
Covey Hill	Canada	45	-73.49	<i>Sphagnum</i>	Bog	Bog	LOW	M. Lavoie	Lavoie, M. et al. (2013)
Craig y Cilau	UK	51.84	-3.18	<i>Sphagnum, Ericacea</i>	Bog	Bog	LOW	D. Carless	PhD Thesis: Carless, D. (2016)
Cruz do Bocelo	Spain	42.98	-8.02	<i>Sedges, Sphagnum & Ericaceae</i>	Fen	Fen	LOW	N. Silva-Sánchez	Silva-Sánchez et al. (2014)
D122	Russia	65.58	73.01	NA	Bog	Bog	LOW	D. Beilman	Beilman et al. (2009)
D127	Russia	64.31	70.29	NA	Bog	Bog	LOW	D. Beilman	Beilman et al. (2009)
Dead Island bog	Ireland	54.89	-6.55	<i>Sphagnum</i>	Raised Bog	Bog	HIGH	G. Swindles	Swindles et al. (2010)
Dhakuri	India	30.05	79.93	Sedges	Fen	Fen	HIGH	N. R. Phadtare	Charman et al (2013)
Dhakuri	India	30.05	79.93	Sedges	Fen	Fen	LOW	N. R. Phadtare	Charman et al (2013)
Durres Maar	Germany	50.12	6.87	<i>Sphagnum</i>	Kettle Hole	Fen	HIGH	R. Moschen	Moschen, R. et al. (2009)
E110	Russia	66.47	76.99	NA	Bog	Bog	LOW	D. Beilman	Beilman et al. (2009)
E113	Russia	66.45	79.32	NA	Bog	Bog	LOW	D. Beilman	Beilman et al. (2009)
E115	Russia	67.81	75.43	NA	Bog	Bog	LOW	D. Beilman	Beilman et al. (2009)
E119	Russia	65.5	75.5	NA	Bog	Bog	LOW	D. Beilman	Beilman, D. et al. (2009)
Escondido	Patagonia	-54.62	-67.77	<i>Sphagnum</i>	Bog	Bog	HIGH	J. Loisel	Loisel J, Yu Z. (2013)
Fallison Bog	USA	46	-89.61	<i>Sphagnum</i>	Bog	Bog	HIGH	A. Ireland	Ireland, A. et al. (2013)
Fenvyestető	Romania	47.67	24.03	<i>Sphagnum, sedge</i>	Bog	Bog	HIGH	D. Charman	Charman, D.; unpublished
Fish Creek	USA	58.34	-134.56	<i>Sphagnum</i>	NA	Bog	HIGH	E. Klein and B. Booth	Klein & Booth; unpublished
Framboise Bog	Canada	45.72	-60.55	<i>Sphagnum</i>	Bog	Bog	HIGH	H. Mackay	Mackay, H. et al. (2016)
G136	Russia	64.15	75.36	NA	Bog	Bog	LOW	D. Beilman	Beilman et al. (2009)
G137	Russia	63.75	75.77	NA	Bog	Bog	LOW	D. Beilman	Beilman et al. (2009)
Galvarne Moraine Ridge	Argentina	-53.19	-63.49	<i>Astelia pumila, Caltha dionaeifolia</i>	Bog	Bog	LOW	S. Björck	Björck, S. et al. (2012)
Glen Carron	Scotland	57.53	-5.15	<i>Sedges, grasses, Sphagnum</i>	Bog	Bog	LOW	D. Anderson	Anderson (1998) ; Anderson (2002)
Glen Torridon	Scotland	57.56	-5.37	<i>Sedges, grasses, Sphagnum</i>	Bog	Bog	LOW	D. Anderson	Anderson (1998) ; Anderson (2002)
Goldeye	Canada	52.46	116.19	<i>Scorpidium scorpioides & Carex sp.</i>	Fen	Fen	LOW	Z. Yu	Yu, Z. (2006)
Great Heath	USA	44.7	-67.81	<i>Sphagnum</i>	Bog	Bog	HIGH	M. Clifford	Clifford and Booth (2013)
Gwaun Nant Ddu	UK	51.83	-3.33	<i>Sphagnum, Ericaceous</i>	Bog	Bog	LOW	D. Carless	PhD Thesis: Carless, D. (2016)
Hanhijanka	Finland	69.17	27.15	<i>Sphagnum, Sedges</i>	Fen	Fen	HIGH	M. Makila	Makila, M.; unpublished
Harberton Bog	Patagonia	-54.87	-67.28	<i>Sphagnum</i>	Bog	Bog	HIGH	J. Loisel	Loisel J. and Yu Z. (2013)
Harjavalta	Finland	61.35	22.18	<i>Sphagnum</i>	Bog	Bog	HIGH	N. Rausch	Ukonmaanaho et al. (2006) ; Rausch et al. (2005)
Haukkasuo	Finland	60.82	26.9	<i>Sphagnum</i>	Concentric raised bog	Bog	HIGH	M. Makila	Mäkilä, M. (1997)
Hautasuo Tupakkisuo	Finland	65.65	27.05	<i>Sedges, Sphagnum</i>	Aapa mire	Mire	HIGH	M. Makila	Makila, M.; unpublished

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Hietajärvi	Finland	63.15	30.67	<i>Sphagnum</i>	Bog	Bog	HIGH	N. Rausch	Ukonmaanaho et al. (2006) ; Rausch et al. (2005)
Hill Top Bog	UK	57.17	-7.35	sedge	Bog	Bog	LOW	L. Orme	Orme et al. (2016)
Hongyuan	China	32.77	102.52	<i>Carex muliensis</i>	Bog	Bog	LOW	D. Large	Large et al. (2009)
Horse Trail	USA	60.42	-150.9	NA	Fen	Fen	LOW	M. Jones	Jones & Yu (2010); Jones, M.C., Wooller, M. & Peteet, D.M., (2014)
Hudson Bay Lowlands1	Canada	54.68	-84.6	NA	Bog	Bog	LOW	M. Packalen	Packalen, M. and Finkelstein, S. (2014)
Hudson Bay Lowlands2	Canada	54.61	-84.6	NA	Fen	Fen	LOW	M. Packalen	Packalen, M. and Finkelstein, S. (2014)
Hyltemossen Bog	Sweden	56.4	13.17	<i>Sphagnum</i>	Bog	Bog	LOW	S. Björck	Björck, S. Clemmensen, L (2004)
Indico	Russia	67.28	49.89	dwarf shrubs, <i>Sphagnum</i>	Permafrost	Bog	LOW	M. Välranta & P. Mathijssen	Välranta M. & Mathijssen, P.; unpublished
Indico	Russia	67.27	49.88	dwarf shrubs, <i>Sphagnum</i>	Permafrost	Bog	LOW	M. Välranta & P. Mathijssen	Välranta M. & Mathijssen, P.; unpublished
Irwin Smith Bog	USA	45.03	-83.62	<i>Sphagnum</i>	Kettle Hole	Fen	LOW	R.K. Booth	Booth et al. (2012)
James Bay Lowland1	Canada	51.07	-89.8	<i>Sphagnum</i>	Bog	Bog	HIGH	J. Holmquist	Holmquist, JR, MacDonald, G. & Gallego-Sala, A. (2014)
James Bay Lowland2	Canada	52.02	-90.13	<i>Sphagnum</i>	Bog	Bog	HIGH	J. Holmquist	Holmquist, JR, MacDonald, G. & Gallego-Sala, A. (2014)
James Bay Lowland3	Canada	52.86	-89.93	<i>Sphagnum</i>	Bog	Bog	LOW	J. Holmquist	Holmquist, JR, MacDonald, G. & Gallego-Sala, A. (2014)
James Bay Lowland4	Canada	55.27	-88.93	<i>Sphagnum</i>	Bog	Bog	HIGH	J. Holmquist	Holmquist, JR, MacDonald, G. & Gallego-Sala, A. (2014)
James Bay Lowland5	Canada	55.42	-88.95	<i>Sphagnum</i>	Bog	Bog	LOW	J. Holmquist	Holmquist, JR, MacDonald, G. & Gallego-Sala, A. (2014)
James Bay Lowland6	Canada	54.77	-89.32	<i>Sphagnum</i>	Bog	Bog	HIGH	J. Holmquist	Holmquist, JR, MacDonald, G. & Gallego-Sala, A. (2014)
James Bay Lowland7	Canada	54.4	-89.52	<i>Sphagnum</i>	Bog	Bog	HIGH	J. Holmquist	Holmquist, JR, MacDonald, G. & Gallego-Sala, A. (2014)
James Bay Lowland8	Canada	50.47	-89.93	<i>Sphagnum</i>	Bog	Bog	HIGH	J. Holmquist	Holmquist, JR, MacDonald, G. & Gallego-Sala, A. (2014)
Jeffrey's Bog	Canada	48.21	-58.82	<i>Sphagnum</i>	Bog	Bog	HIGH	H. Mackay	Mackay, H. et al. (2016)
Joey_core12	Canada	55.47	-98.15	<i>Sphagnum</i>	Permafrost	Bog	HIGH	P. Camill	Camill et al (2009)
Joey_core15	Canada	55.47	-98.15	<i>Sphagnum</i>	Permafrost	Bog	LOW	P. Camill	Camill et al (2009)
Joey_core2	Canada	55.47	-98.16	<i>Sphagnum</i>	Permafrost	Bog	LOW	P. Camill	Camill et al (2009)
Joey_core5	Canada	55.46	-98.16	<i>Sphagnum</i>	Permafrost	Bog	LOW	P. Camill	Camill et al (2009)
Joey_core7	Canada	55.46	-98.16	<i>Sphagnum</i>	Permafrost	Bog	LOW	P. Camill	Camill et al (2009)
KAM12-B1	Russia	53.91	155.94	<i>Sphagnum linderbergii</i>	Bog	Bog	HIGH	C. Bochicchio	Yu, Z. & Bochicchio, C.; unpublished
KAM12-B3	Russia	53.11	158.62	<i>Sphagnum and Cyperaceae</i>	Fen	Fen	LOW	C. Bochicchio	Yu, Z. & Bochicchio, C.; unpublished
KAM12-C1	Russia	54.9	156.6	<i>S. linderbergii & Myrica tormentosa</i>	Bog	Bog	LOW	C. Bochicchio	Yu, Z. & Bochicchio, C.; unpublished
KAM12-C4	Russia	54.01	156.08	<i>S. linderbergii & Myrica tormentosa</i>	Bog	Bog	LOW	C. Bochicchio	Yu, Z. & Bochicchio, C.; unpublished
Karukinka A	Chile	-53.86	-69.58	<i>Sphagnum magellanicum</i>	Bog	Bog	HIGH	T. Roland & D. Mauquoy	van Bellen, S. et al. (2016)
Kenai_Gasfield	USA	60.45	-151.25	NA	Fen	Fen	HIGH	Z. Yu & M. Jones	Jones, M. and Yu, Z. (2010)
Kimana	Kenya	-2.54	37.68	Sedge	Grassland swamp	Bog	HIGH	R. Marchant, C. Mustaphi & E. Githumbi	PhD thesis: Githumbi, E. (2017)
Kitulu	Tanzania	9.35	34.66	graminoids	Swamp	Bog	HIGH	R. Marchant, C. Mustaphi & E. Githumbi	Marchant, R., Mustaphi, C. & Githumbi, E.; unpublished
KJ2-3	Canada	51.59	-81.76	NA	Fen	Fen	LOW	M. Packalen	Packalen, M. and Finkelstein, S. (2014)

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KJ4-3	Canada	51.59	-81.78	NA	Fen	Fen	LOW	M. Packalen	Packalen, M. and Finkelstein, S. (2014)
Kohala, Hawaii	USA	20.06	-155.67	<i>Sphagnum</i>	Fen	Fen	LOW	D. Beilman	Beilman, D.; unpublished
Kohlhuten Moor	Germany	47.93	8.18	<i>Sphagnum</i>	Raised Bog	Bog	LOW	G. Le Roux	Le Roux, G.; unpublished
Kontolanrahka	Finland	60.78	22.78	<i>Sphagnum</i>	Bog	Bog	HIGH	M. Väiliranta	Väiliranta et al (2007)
KUJU_BF2	Canada	55.23	-77.7	NA	Palsa mire	Fen	HIGH	M. Garneau & A. Lamarre	Lamarre, A. Garneau, M. Asnong, H. (2012)
KUJU_PD2	Canada	55.23	-77.7	NA	Palsa mire	Bog	HIGH	M. Garneau & A. Lamarre	Lamarre, A. Garneau, M. Asnong, H. (2012)
La Grande 2	Canada	53.65	-77.73	<i>Sphagnum</i> ,	Bog	Bog	LOW	M. Garneau	Beaulieu-Audy et al. (2009)
La Grande 3	Canada	53.57	-76.13	<i>Sphagnum</i> , <i>Ericaceae</i>	Bog	Bog	LOW	M. Garneau	Beaulieu-Audy et al. (2009)
La Grande Riviere (LG1)	Canada	53.9	-78.77	<i>Sphagnum</i>	Fen	Fen	LOW	M. Garneau	Beaulieu-Audy et al. (2009)
La Grande Riviere (LG2)	Canada	53.65	-77.73	<i>Sphagnum</i> , <i>Ericaceae</i> , <i>Picea mariana</i>	Bog	Bog	HIGH	M. Garneau	Beaulieu-Audy et al. (2009)
La Grande Riviere (LG2)	Canada	53.65	-77.73	<i>Sphagnum</i> , <i>Ericaceae</i> , <i>Picea mariana</i>	Bog	Bog	LOW	M. Garneau	Beaulieu-Audy et al. (2009)
La Grande Riviere (LG3)	Canada	53.57	-76.13	sedges, brown mosses, <i>Sphagnum</i>	Bog	Bog	HIGH	M. Garneau	Beaulieu-Audy et al. (2009)
Lac Le Caron	Canada	52.29	-75.84	<i>Sphagnum</i> , <i>Cyperaceae</i> , <i>Ericaceae</i>	Bog	Bog	LOW	M. Garneau	Loisel, J. & Garneau, M. (2010)
Lac Le Caron	Canada	52.28	-75.83	<i>Sphagnum</i> , <i>Cyperaceae</i> , <i>Ericaceae</i>	Bog	Bog	HIGH	M. Garneau	Loisel, J. & Garneau, M. (2010)
Lac Le Caron	Canada	52.58	-75.83	<i>Sphagnum</i> , <i>Cyperaceae</i> , <i>Ericaceae</i>	Bog	Bog	HIGH	S. van Bellen	van Bellen et al. (2011)
Lac Le Caron	Canada	52.29	-75.84	<i>Sphagnum</i> , <i>Cyperaceae</i> , <i>Ericaceae</i>	Bog	Bog	LOW	S. van Bellen	van Bellen et al. (2011)
Lac Le Caron	Canada	52.29	-75.84	<i>Sphagnum</i> , <i>Cyperaceae</i> , <i>Ericaceae</i>	Bog	Bog	LOW	S. van Bellen	van Bellen et al. (2011)
Lac Le Caron	Canada	52.29	-75.84	<i>Sphagnum</i> , <i>Cyperaceae</i> , <i>Ericaceae</i>	Bog	Bog	LOW	S. van Bellen	van Bellen et al. (2011)
Lac Le Caron	Canada	52.28	-75.83	<i>Sphagnum</i> , <i>Cyperaceae</i> , <i>Ericaceae</i>	Bog	Bog	LOW	S. van Bellen	van Bellen et al. (2011)
Lake 396	Canada	59.58	-98.57	NA	Permafrost	Bog	LOW	P. Camill	Camill, P. et al (2017)
Lake 785	Canada	59.11	-97.4	NA	Permafrost	Bog	LOW	P. Camill	Camill, P. et al (2017)
Lappmyran	Sweden	64.16	19.58	<i>Sphagnum</i> , <i>Cyperaceae</i> , <i>Ericaceae</i>	Bog	Bog	HIGH	M. van der Linden	van der Linden et al. (2008)
Lebel	Canada	49.11	-68.24	<i>Sphagnum</i> , <i>Ericaceae</i> , <i>Picea mariana</i>	Bog	Bog	HIGH	M. Garneau & G. Magnan	Magnan and Garneau (2014)
Lebel	Canada	49.1	-68.25	<i>Sphagnum</i>	Bog	Bog	HIGH	N. Sanderson	PhD thesis: Sanderson, N. (2016)
Left Boot Bog	Canada	55.93	-112.06	<i>Sphagnum</i>	Bog	Bog	LOW	D. Beilman	Beilman, D.; unpublished
LG1 peatland	Canada	54.06	-78.46	<i>Sphagnum</i>	Fen	Fen	LOW	M. Garneau	Beaulieu-Audy et al. (2009)
Liffey Head Bog	Ireland	53.15	-5.72	NA	Bog	Bog	LOW	F. Mitchell	BD data: Mitchell, F.; unpublished. Dating published in: Cole, E.E. & Mitchell, F.J.G. (2003)
Linje	Poland	53.19	18.31	<i>Eriophorum sp.</i> , <i>Sphagnum</i>	Poor Fen	Fen	HIGH	K. Marcisz	Marcisz, K., et al, (2015)

Name	Country	Lat.	Lon.	Dominant Vegetation	Peatland type	Type Simpl.	Res.	Contributor	Reference
Luala	Tanzania	9.29	34.56	<i>Sphagnum</i>	Swamp	Bog	HIGH	R. Marchant, C. Mustaphi & E. Githumbi	Marchant, R., Mustaphi, C. & Githumbi, E.; unpublished
Luovuoma	Finland	68.4	23.43	Sedge	Northern fen	Fen	LOW	M. Makila	Mäkilä, M. and Moisanen, M. (2007)
M179	USA	60.59	-149.53	<i>Sphagnum</i>	Fen	Fen	HIGH	Z. Yu & M. Jones	Yu, Z., Hunt, S. and Jones, M.; unpublished
M179	USA	60.59	-149.53	<i>Sphagnum</i>	Fen	Fen	LOW	Z. Yu & M. Jones	Yu, Z., Hunt, S. and Jones, M.; unpublished
Malham Tarn Moss	UK	54.1	-2.18	<i>Eriophorum & Sphagnum</i>	Bog	Bog	HIGH	E. Turner	Turner, Swindles and Roucoux (2016)
Manic	Canada	49.12	-68.3	<i>Eriophorum</i> & other sedges	Bog	Bog	LOW	M Garneau & G. Magnan	Magnan, G. Garneau, M. Payette, S (2014)
Männikjärve bog	Estonia	58.88	26.26	<i>Sphagnum, Ericaceae</i>	Bog	Bog	HIGH	Karofeld, E.	Karofeld, E, Alm, J. & Sillasoo, Ü.; partly unpublished; Sillasoo et al. (2007)
Mariana	USA	56.02	-111.93	<i>Sphagnum</i>	Fen	Fen	HIGH	Z. Yu	Yu, Z. et al. (2014)
Mariana Lake	USA	56.02	-111.93	NA	Fen	Fen	HIGH	D. H. Vitt	Yu, Z. et al. (2014)
Marooned	Sweden	67.96	19.99	<i>Eriophorum, Sphagnum & Rubus Chamaemorus</i>	Poor fen/Bog	Mixed	LOW	G. Swindles	Swindles, G. et al. (2015)
Martin	Canada	61.8	-121.4	<i>Sphagnum</i>	Bog	Bog	LOW	S. Robinson	Robinson, S. (2006)
Mawnbwll du Mawr	UK	51.93	-3.73	NA	Bog	Bog	LOW	D. Carless	PhD Thesis: Carless, D. (2016)
Mer Bleue	Canada	45.68	-75.8	<i>Sphagnum, Ericaceae</i>	Bog	Bog	HIGH	M. Garneau	Pratte et al (2013)
Mgundamrajia	Kenya	-1.2	34.55	<i>Sphagnum</i> & shubs	Paramo	Bog	LOW	R. Marchant, C. Mustaphi & E. Githumbi	Marchant, R., Mustaphi, C. & Githumbi, E.; unpublished
Misten bog	Belgium	50.56	6.16	Graminoid	Bog	Bog	HIGH	F De Vleeschouwer	De Vleeschouwer et al. (2012)
Mlanga	Tanzania	9.46	34.15	<i>Sphagnum</i>	Swamp	Bog	LOW	R. Marchant, C. Mustaphi & E. Githumbi	Marchant, R., Mustaphi, C. & Githumbi, E.; unpublished
Moon Point	Australia	-24.78	153.06	Graminoid	Fen	Fen	LOW	P. Moss	Moss, P. et al. (2016)
Morts	Canada	50.26	-63.67	<i>Sphagnum</i>	Bog	Bog	HIGH	M. Garneau & G. Magnan	Magnan and Garneau (2014)
Morts	Canada	50.27	-63.67	<i>Sphagnum</i>	Bog	Bog	HIGH	N. Sanderson	PhD thesis: N. Sanderson (2016)
Mosaik peat land	Canada	51.98	-75.4	<i>Sphagnum</i>	Bog	Bog	LOW	S. van Bellen	van Bellen, S., et al. (2011)
Mosaik peatland	Canada	51.98	-75.4	<i>Ericaceae, Sphagnum</i>	Bog	Bog	LOW	M. Garneau	Loisel, J. Garneau, M. (2010)
Mosaik peatland	Canada	51.98	-75.4	<i>Ericaceae, Sphagnum</i>	Bog	Bog	LOW	S. van Bellen	van Bellen, S., et al. (2011)
Mosaik peatland	Canada	51.98	-75.4	<i>Ericaceae, Sphagnum</i>	Bog	Bog	LOW	S. van Bellen	van Bellen, S., et al. (2011)
Mosaik peatland	Canada	51.98	-75.4	<i>Ericaceae, Sphagnum</i>	Bog	Bog	LOW	S. van Bellen	van Bellen, S., et al. (2011)
Mosaik peatland	Canada	51.97	-75.4	<i>Ericaceae, Sphagnum</i>	Bog	Bog	LOW	S. van Bellen	van Bellen, S., et al. (2011)
Mukhrino	Russia	60.9	68.7	<i>Sphagnum</i>	Raised Bog	Bog	HIGH	B. Fialkiewicz-Kozieł	Lamentowicz M. et al. (2015)
N001	Russia	63.16	74.82	<i>Sphagnum</i>	Bog	Bog	LOW	D. Beilman	Beilman et al. (2009)
N015	Russia	63.65	74.27	NA	Bog	Bog	LOW	D. Beilman	Beilman et al. (2009)
Nadym	Russia	65.32	72.87	<i>Sphagnum, Eriophorum & sedges</i>	Palsa mire	Fen	HIGH	T. Blyakharchuk	Blyakharchuk, T.; unpublished
No Name Creek	USA	60.63	-151.08	<i>Sphagnum</i>	Fen	Fen	LOW	Z. Yu and M. Jones	Jones and Yu (2010)
Nordan's Pond	Canada	49.15	-53.58	NA	Bog	Bog	LOW	P. Hughes	Hughes, P.D.M. et al. (2006)

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Nuikluk (Core 2)	USA	64.83	-163.45	<i>Sphagnum</i>	Thermokast	Fen	LOW	Z. Yu	Hunt et al. (2013)
Nyabuiyabui	Kenya	-0.44	35.8	Sedge and <i>Sphagnum</i>	Paramo	Bog	LOW	C. Mustaphi, R. Marchant, E. Githumbi	PhD Thesis: Githumbi, E. (2017); Courtney Mustaphi et al. (2016).
Old Black Spruce	Canada	54	-105.12	Graminoids	Fen	Fen	LOW	I. Bauer	Bauer et al., (2009)
Old Black Spruce	Canada	54	-105.12	Graminoids	Fen	Fen	LOW	I. Bauer	Bauer et al., (2009)
Ours	Canada	54.06	-72.46	<i>Gramineae</i> and <i>Sphagnum</i>	Poor fen	Fen	LOW	M. Garneau	Garneau et al. (2017)
Ours	Canada	54.06	-72.46	<i>Gramineae</i> and <i>Sphagnum</i>	Poor fen	Fen	LOW	M. Garneau	Garneau et al. (2017)
Ours	Canada	54.06	-72.46	<i>Gramineae</i> and <i>Sphagnum</i>	Poor fen	Fen	LOW	S. van Bellen & M. Garneau	van Bellen et al (2013)
Ours	Canada	54.06	-72.46	<i>Gramineae</i> and <i>Sphagnum</i>	Poor fen	Fen	LOW	S. van Bellen & M. Garneau	van Bellen et al (2013)
Ours	Canada	54.06	-72.45	<i>Gramineae</i> and <i>Sphagnum</i>	Poor fen	Fen	LOW	S. van Bellen & M. Garneau	van Bellen et al (2013)
Outokumpu	Finland	62.67	28.85	<i>Gramineae</i> and <i>Sphagnum</i>	Bog	Bog	HIGH	N. Rausch	Ukonmaanaho et al. (2006) ; Rausch et al. (2005)
P131	Russia	66.17	73.99	<i>Sphagnum</i>	Fen	Fen	LOW	D. Beilman	Beilman et al. (2009)
Pasada de Lamoso	Spain	43.52	-7.54	<i>Ericaceae</i> , blanket bog	Bog	Bog	LOW	A. Martínez Cortizas & N. Silva-Sánchez	A. Martínez Cortizas, unpublished
Patuanak	Canada	55.85	-107.68	Sedges, <i>Ericaceae</i> , blanket bog	Permafrost	Bog	LOW	Z. Yu	Yu, Z. and Beilman, D. ; unpublished
Pedrido Bog	Spain	43.45	-7.53	<i>Cyperaceae</i> , <i>Sphagnum</i>	Bog	Bog	HIGH	L. Orme	Orme et al. (2017)
Pena da Cadela	Spain	43.5	-7.55	<i>Ericaceae</i> , blanket bog	Bog	Bog	LOW	A. Martínez Cortizas	A. Martínez Cortizas, unpublished
Pena da Cadela	Spain	43.5	-7.55	Graminoids, <i>Ericaceae</i> , <i>Sphagnum</i>	Bog	Bog	HIGH	A. Martínez Cortizas	Martínez Cortizas A et al. (2005)
Penido Vello	Spain	43.54	-7.51	<i>Ericaceae</i> , blanket bog	Bog	Bog	HIGH	A. Martínez Cortizas	Martínez-Cortizas A et al. (1997)
Petersville	USA	62.42	-150.68	<i>E angustifolium</i> & <i>C. durieui</i>	Mixed	Mixed	LOW	J. Loisel	Loisel, J.; unpublished
Petite Bog	USA	45.15	-63.94	NA	Raised Bog	Bog	HIGH	D. Charman	Charman et al (2015)
Pinhook Bog	USA	41.62	-86.85	<i>Sphagnum</i> & dwarf shrubs	Kettle Hole	Fen	HIGH	R. Booth	Booth, B.; unpublished
Piyashiri	Japan	36.02	139.72	<i>Sphagnum</i>	Bog	Bog	LOW	P. Hughes	Hughes, P.; unpublished
Plaine	Canada	50.27	-63.54	<i>Sphagnum</i>	Bog	Bog	LOW	G. Magnan	Magnan, G. Garneau, M. Payette, S (2014)
Plaine	Canada	50.27	-63.54	<i>Sphagnum</i>	Bog	Bog	HIGH	N. Sanderson	PhD thesis: Sanderson, N. (2016)
Point Lena	USA	58.39	-134.75	<i>Sphagnum</i>	Bog	Bog	HIGH	E. S Klein and R. K Booth	Klein and Booth; unpublished
Port McNeill Bog	Canada	50.57	-127.07	<i>Ericaceae</i> , <i>Sphagnum</i>	Bog	Bog	LOW	T. Lacourse	Lacourse and Davies (2015)
Puścizna Mała	Poland	49.05	19.09	Brown moss	Bog	Bog	HIGH	B. Fialkiewicz-Kozieł	Fialkiewicz-Kozieł et al. (2014)
Qindelli	China	48.02	133.21	<i>Sphagnum</i>	NA	Bog	HIGH	G. Wang	Wang, G.; unpublished
Red Bay	Canada	51.76	-56.41	<i>Sphagnum</i>	Bog	Bog	LOW	N. Sanderson	PhD thesis: Sanderson, N. (2016)
Rogovaya_2	Russia	67.27	62.14	Lichen	Permafrost peat plateau	Bog	LOW	P. Oksanen	Oksanen et al. (2001)
Rogovaya_3	Russia	67.25	62.07	Lichen	Permafrost peat plateau	Bog	LOW	P. Oksanen	Oksanen et al. (2001)
Romaine	Canada	50.26	-63.68	<i>Sphagnum</i>	Bog	Bog	LOW	N. Sanderson	PhD thesis: Sanderson, N. (2016)
S009	Russia	62.12	73.84	<i>Sphagnum</i>	Bog	Bog	LOW	D. Beilman	Beilman et al. (2009)
S022	Russia	60.84	71.26	NA	Bog	Bog	LOW	D. Beilman	Beilman et al. (2009)

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Saarisuo B400	Finland	65.55	27.53	<i>Sphagnum, Carex</i>	Aapa mire	Mire	HIGH	M. Makila	Makila, M.; unpublished
Saco Heath	USA	43.55	-70.47	<i>Cyperaceae, Sphagnum</i>	Bog	Bog	HIGH	H. Mackay	Mackay, H. et al. (2016)
Sandhill Fen	Canada	53.83	-104.63	<i>Sphagnum</i>	Fen	Fen	LOW	I. Bauer	Bauer et al., (2009)
Sangarwe	Kenya	-1.17	34.58	Sedges, <i>Sphagnum</i>	Paramo	Bog	HIGH	R. Marchant, C. Mustaphi & E. Githumbi	Marchant, R., Mustaphi, C. & Githumbi, E.; unpublished
Saxnäs Mosse	Sweden	56.86	13.46	<i>Sphagnum, Cyperaceae, Ericaceae</i>	Bog	Bog	HIGH	M. van der Linden	van der Linden and van Geel (2006)
Sebangau1A	Indonesia	-2.32	113.89	Swamp forest	Swamp	Bog	LOW	D. Charman & A. Gallego-Sala	Charman D. & Gallego-Sala, A.; unpublished
Sebangau1B	Indonesia	-2.32	113.89	swamp forest	Swamp	Bog	HIGH	D. Charman & A. Gallego-Sala	Charman D. & Gallego-Sala, A.; unpublished
Sebangau2A	Indonesia	-2.32	113.88	swamp forest	Swamp	Bog	HIGH	D. Charman & A. Gallego-Sala	Charman D. & Gallego-Sala, A.; unpublished
Sebangau2B	Indonesia	-2.32	113.88	swamp forest	Swamp	Bog	LOW	D. Charman & A. Gallego-Sala	Charman D. & Gallego-Sala, A.; unpublished
Sebangau3A	Indonesia	-2.32	113.9	swamp forest	Swamp	Bog	LOW	D. Charman & A. Gallego-Sala	Charman D. & Gallego-Sala, A.; unpublished
Sebangau3B	Indonesia	-2.32	113.9	swamp forest	Swamp	Bog	HIGH	D. Charman & A. Gallego-Sala	Charman D. & Gallego-Sala, A.; unpublished
Sebangau4A	Indonesia	-2.33	113.9	swamp forest	Swamp	Bog	LOW	D. Charman & A. Gallego-Sala	Charman D. & Gallego-Sala, A.; unpublished
Sebangau4B	Indonesia	-2.33	113.9	swamp forest	Swamp	Bog	LOW	D. Charman & A. Gallego-Sala	Charman D. & Gallego-Sala, A.; unpublished
Sebangau5A	Indonesia	-2.34	113.89	swamp forest	Swamp	Bog	HIGH	D. Charman & A. Gallego-Sala	Charman D. & Gallego-Sala, A.; unpublished
Sebangau5B	Indonesia	-2.34	113.89	swamp forest	Swamp	Bog	LOW	D. Charman & A. Gallego-Sala	Charman D. & Gallego-Sala, A.; unpublished
Seida	Russia	67.03	62.55	Dwarf shrub & lichens	Permafrost peat plateau	Bog	LOW	M. Välranta & P. Mathijssen	Välranta M. & Mathijssen, P.; unpublished
Seida	Russia	67.03	62.55	Dwarf shrub & lichens	Permafrost peat plateau	Bog	LOW	M. Välranta & P. Mathijssen	Välranta M. & Mathijssen, P.; unpublished
Selwyn Lake	Canada	59.88	-104.2	<i>Ericaceae</i>	Permafrost peat plateau	Bog	LOW	B. Sannel	Sannel and Kuhry (2009)
Shestakovo	Russia	55.88	87.83	Sedges	Floodplain fen	Fen	HIGH	T. Blyakharchuk	Blyakharchuk, T.; unpublished
Shidodo	Kenya	-1.15	34.03	Sedges & <i>Sphagnum</i>	Paramo	Bog	HIGH	R. Marchant, C. Mustaphi & E. Githumbi	Marchant, R., Mustaphi, C. & Githumbi, E.; unpublished
Shuttle	Canada	59.86	-97.64	Graminoids	Bog	Bog	LOW	P. Camill	Camill, P. et al (2017)
SIB01	Russia	59.36	68.98	NA	Bog	Bog	LOW	D. Beilman	Beilman et al. (2009)
SIB02	Russia	61.06	70.06	NA	Bog	Bog	LOW	D. Beilman	Beilman et al. (2009)
SIB03	Russia	56.36	79.07	NA	Bog	Bog	LOW	D. Beilman	Beilman et al. (2009)
SIB04	USA	56.8	78.74	NA	Bog	Bog	HIGH	D. Beilman	Beilman et al. (2009)
SIB05	Russia	57.35	81.16	NA	Bog	Bog	LOW	D. Beilman	Beilman et al. (2009)
SIB06	Russia	58.44	83.43	NA	Bog	Bog	LOW	D. Beilman	Beilman et al. (2009)
SIB06	Russia	58.44	83.43	NA	Bog	Bog	HIGH	G. MacDonald	MacDonald, G.; unpublished
Sidnaw Bog	USA	46.56	-88.78	NA	Kettle Hole	Fen	HIGH	R. Booth	Booth, B.; unpublished
Sidney Bog	USA	44.39	-69.79	<i>Sphagnum</i>	Raised Bog	Bog	HIGH	D. Charman	Charman et al (2015)
Sidney Bog	USA	44.39	-69.79	<i>Sphagnum</i> & dwarf shrubs	Raised Bog	Bog	HIGH	D. Charman	Charman et al (2015)
Siikaneva	Finland	61.84	24.17	<i>Sphagnum</i> & dwarf shrubs	Mixed	Mixed	LOW	M. Välranta and P. Mathijssen	Mathijssen et al. (2016)
Słowińskie Błota	Poland	54.36	16.49	<i>Sphagnum</i>	Bog	Bog	HIGH	F. De Vleeschouwer	De Vleeschouwer et al., (2009)

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Sterne Bog	Canada	52.04	-75.17	<i>Sphagnum</i>	Bog	Bog	LOW	S. van Bellen	van Bellen et al. (2011)
Sterne Bog	Canada	52.04	-75.17	<i>Sphagnum</i>	Bog	Bog	LOW	S. van Bellen	van Bellen et al. (2011)
Sterne Bog	Canada	52.04	-75.17	<i>Sphagnum</i>	Bog	Bog	LOW	S. van Bellen	van Bellen et al. (2011)
Sterne Bog	Canada	52.04	-75.17	<i>Sphagnum</i>	Bog	Bog	LOW	S. van Bellen	van Bellen et al. (2011)
Sterne Bog	Canada	52.04	-75.17	<i>Sphagnum</i>	Bog	Bog	LOW	S. van Bellen	van Bellen et al. (2011)
Stordalen	Sweden	68.35	19.05	<i>Eriophorum, Sphagnum</i>	Fen	Fen	HIGH	U. Kokfelt	Kokfelt et al. (2010)
Stordalen	Sweden	68.35	19.05	<i>Eriophorum, Sphagnum</i>	Fen	Fen	HIGH	G. Swindles	Swindles et al. (2015)
Stordalen	Sweden	68.36	19.05	<i>Eriophorum, Sphagnum</i>	Fen	Fen	HIGH	G. Swindles	Swindles et al. (2015)
Store Mosse Bog	Sweden	57.09	12.43	<i>Sedges, Sphagnum</i>	Bog	Bog	HIGH	R. De Jong & S. Björck	De Jong et al. (2007)
Struban Bog	UK	57.56	-7.35	<i>Sphagnum</i>	Bog	Bog	LOW	L. Orme	Orme et al. (2016)
Surrey Bog	Canada	49.21	-122.75	swamp forest	Bog	Bog	HIGH	M. Clifford	Clifford, M.; unpublished
Swanson	USA	60.79	-150.83	<i>Sphagnum</i>	Poor Fen	Fen	LOW	M. Jones	Jones et al., 2009; Jones and Yu (2010)
Tasiusaq	Greenland	61.14	-45.56	<i>Sphagnum</i>	Fen	Fen	HIGH	C. Massa	Shotyk et al. (2003)
Teuravuoma	Finland	65.65	27.05	<i>Sphagnum, Sedges</i>	Aapa Mire	Fen	HIGH	M. Makila	Makila, M.; unpublished
The Great Heath	USA	44.7	-67.81	<i>Sphagnum & dwarf shrubs</i>	Bog	Bog	HIGH	M. Clifford	Clifford and Booth (2013)
Tierra Australis	Argentina	-54.62	-67.77	<i>Sphagnum magellanicum</i>	Bog	Bog	HIGH	D. Mauquoy & P. Hughes	van Bellen, S., et al. (2016)
Titus Bog	USA	41.95	-79.76	<i>Sphagnum</i>	Mat	Bog	HIGH	A. Ireland & B. Booth	Ireland and Booth (2011)
Tremoal do Pedrido	Spain	43.45	-7.53	<i>Sedges & Sphagnum</i>	Bog	Bog	HIGH	A. Martínez Cortizas & N. Silva-Sánchez	A. Martínez Cortizas, unpublished
Undarsmosse Bog	Sweden	56.79	12.66	<i>Molinia, sedges, grasses</i>	Bog	Bog	HIGH	R. De Jong & S. Björck	De Jong et al. (2006)
Unit	Canada	59.42	-97.48	<i>Sphagnum</i>	Bog	Bog	LOW	P. Camill	Camill, P. et al (2017)
Upper Andorra Valley	Patagonia	-54.75	-68.33	<i>Sphagnum</i>	Bog	Bog	HIGH	J. Loisel	Loisel J. and Yu Z. (2013)
Upper Pinto	Canada	53.58	-118.02	<i>Sphagnum</i>	Fen	Fen	HIGH	Z. Yu	Yu et al. (2003)
Usinsk	Russia	57.42	65.67	lichens	Permafrost peat plateau	Bog	LOW	P. Oksanen	Oksanen et al. (2003)
Utasai Bog	Japan	42.63	140.31	NA	Bog	Bog	HIGH	P. Hughes	Hughes, P.D.M. et al. (2013)
Utikuma	Canada	55.84	-115.09	<i>Sphagnum</i>	Fen	Fen	HIGH	Z. Yu	Yu, Z. et al. (2014)
V026	Russia	61.03	76.47	<i>Sphagnum</i>	Bog	Bog	LOW	D. Beilman	Beilman et al. (2009)
V034	Russia	61.47	79.46	NA	Bog	Bog	LOW	D. Beilman	Beilman et al. (2009)
V038	Russia	60.8	74.54	NA	Bog	Bog	LOW	D. Beilman	Beilman et al. (2009)
V039	Russia	61.09	79.38	NA	Bog	Bog	LOW	D. Beilman	Beilman et al. (2009)
Vallee (BS Vallee)	Canada	51.49	-57.19	<i>Sphagnum</i>	Bog	Bog	LOW	N. Sanderson	PhD thesis: Sanderson, N. (2016)
VC04-06	Canada	52.71	-84.18	<i>S. fuscum & Cladonia sp.</i>	Bog	Bog	LOW	J. Bunbury	Bunbury, B. et al. (2012)
Villagedale Bog	Canada	43.55	-65.53	<i>S. fuscum & Cladonia sp.</i>	Bog	Bog	HIGH	H. Mackay	Mackay, H. et al. (2016)
VM2-5	Canada	52.72	-83.94	<i>Sphagnum</i>	Fen	Fen	LOW	M. Packalen & S. Finkelstein	Packalen and Finkelstein (2014); Packalen et al (2016); Packalen et al (2014)
VM3-2	Canada	52.71	-84.17	NA	Poor Fen	Fen	LOW	M. Packalen & S. Finkelstein	Packalen and Finkelstein (2014); Packalen et al (2016); Packalen et al (2014)

Name	Country	Lat.	Lon.	Dominant Vegetation	Peatland type	Type Simpl.	Res.	Contributor	Reference
VM4-1	Canada	52.71	-84.19	NA	Bog	Bog	LOW	M. Packalen & S. Finkelstein	Packalen and Finkelstein (2014); Packalen et al (2016); Packalen et al (2014)
Walton Moss	UK	54.98	-1.23	<i>Sphagnum</i>	Raised Bog	Bog	HIGH	D. Mauquoy & P. Hughes	Hughes, P.D.M. et al, (2000)
Wylde Lake Bog	Canada	43.9	-80.41	<i>Sphagnum</i>	Bog	Bog	LOW	S. Finkelstein	Shiller et al (2014)
Zoige Wagen	China	33.72	102.12	<i>Sphagnum</i>	Fen	Fen	HIGH	Y. Zhao	Zhao, Y.; unpublished
Zoige Wagen	China	33.1	102.67	sedge	Fen	Fen	HIGH	Y. Zhao	Zhao, Y.; unpublished
Zoige Wagen	China	32.78	102.52	sedge	Fen	Fen	HIGH	Y. Zhao	Zhao, Y.; unpublished

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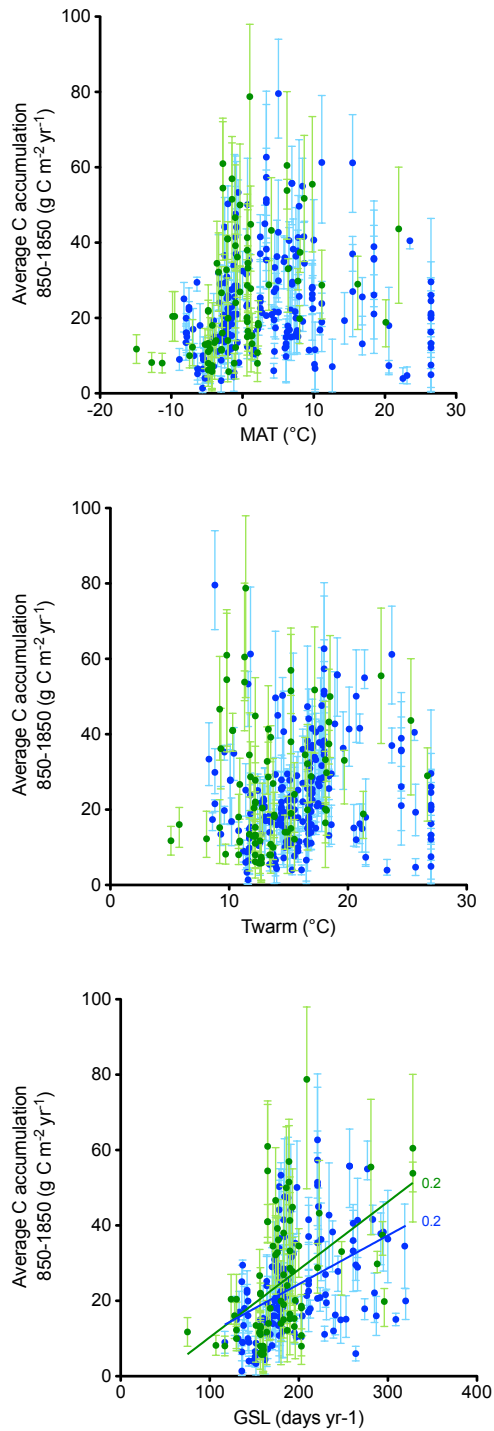


Figure S11: Climate controls on the carbon accumulation rate for bogs (blue) and fens (green). The average yearly accumulation rate over the last millennium at each site compared to: a) mean annual temperature (°C) b) mean temperature of the warmest month (°C) and c) growing season length (days yr⁻¹). Note that for c) the sites with GSL=365 have been omitted, and the best fitting line for the remaining fens and bogs separately is shown in the diagram (R² next to the line).

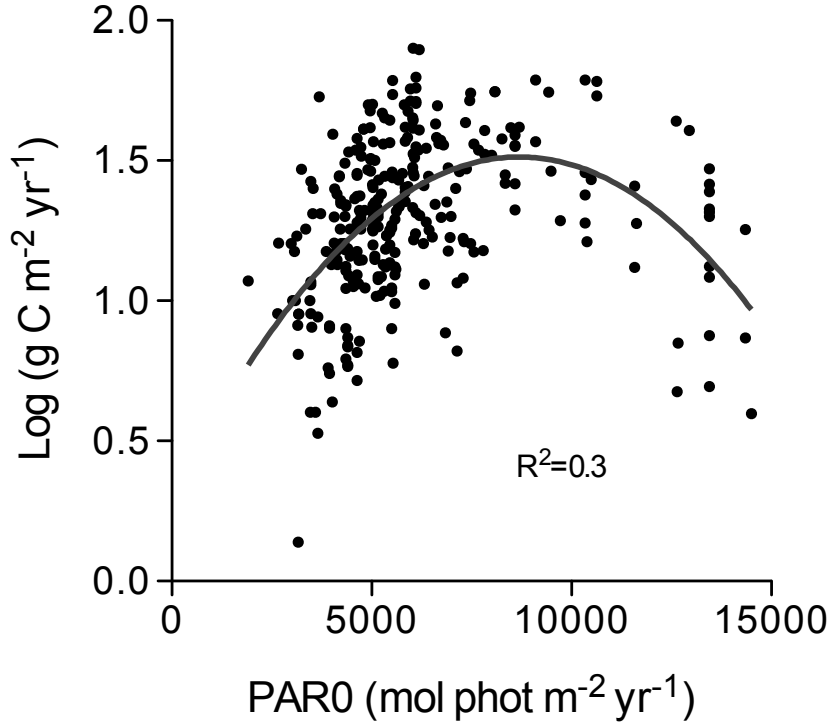


Figure SI2: Binomial relationship between PAR0 and the logarithm of the carbon accumulation rate used in the spatial analysis of the data. The best fitting line is shown in the diagram (R^2 next to the line).

Table SI2: Statistical significance of the regression model of carbon accumulation vs. PAR0 when tested against the null model. Model tested are those containing: a) all sites, where the carbon accumulation data has not been transformed; b) all sites, where the carbon accumulation data has been log transformed; c) only fen sites included, carbon accumulation data has been log transformed; and finally d) only bog sites included, carbon accumulation has been log transformed.

Model	R^2	F-stat	d.f.1	d.f.2	p-value
a. All: Quadratic no log transform	0.2123	39.34	2	292	7.439×10^{-16}
b. All: Quadratic log transform	0.2526	49.35	2	292	2.572×10^{-19}
c. Fen: Quadratic log transform	0.2792	13.95	2	72	7.591×10^{-6}
d. Bog: Quadratic log transform	0.2437	33.84	2	210	1.823×10^{-13}

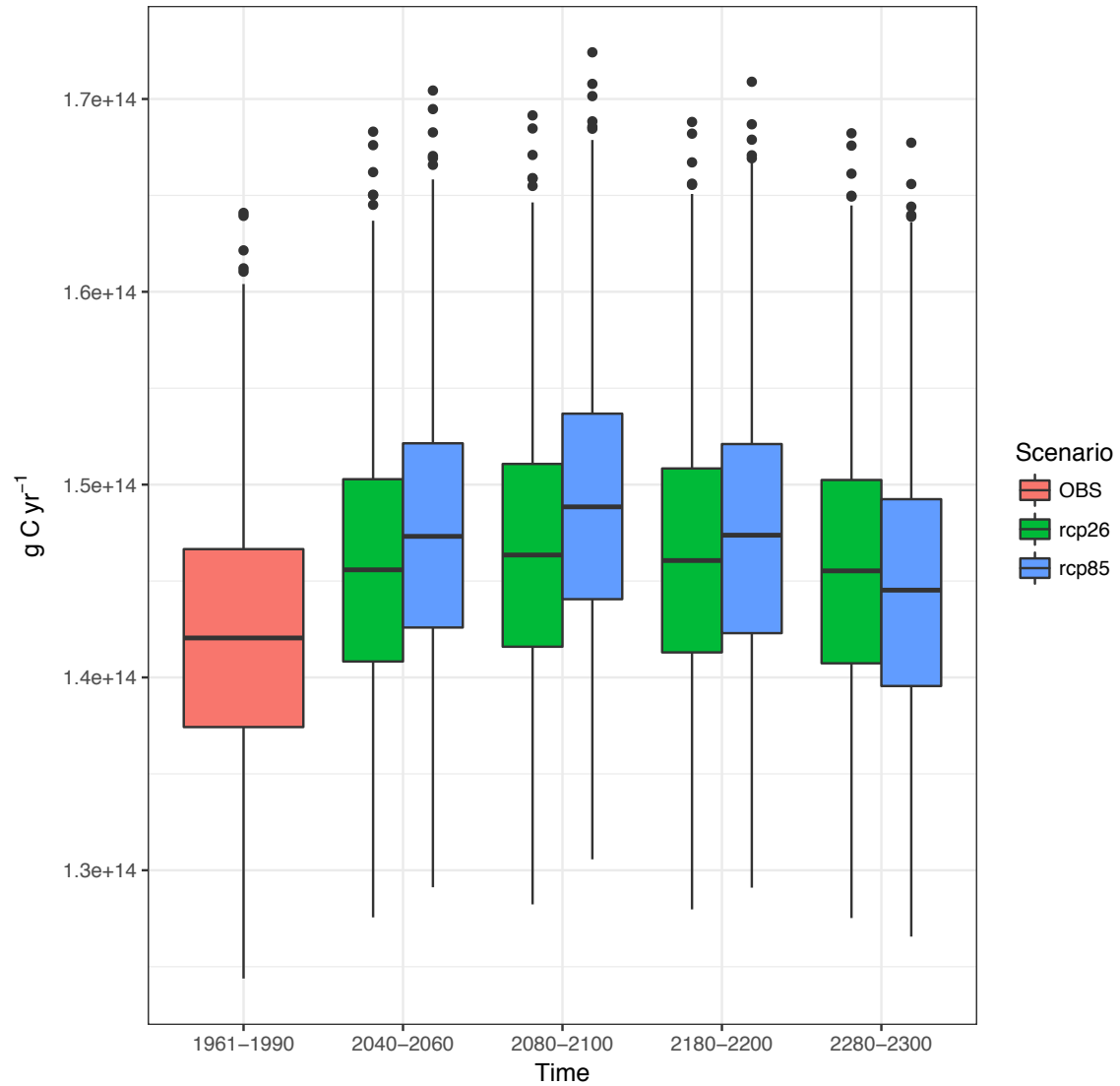


Figure S13: Global historic value of the global peatland carbon sink (1961-1990, in red), and future trends of the global peatland carbon sink for time spans 2040-2060, 2080-2100, 2180-2200 and 2280-2300 and for two different representative concentration pathways: RCP26 (in green) and RCP85 (in blue)

Table SI3: Results of a Tukey post-hoc test or pairwise comparison of means on the differences in global peatland carbon accumulation between different periods for the two representative concentration pathways (RCP26 and RCP85). The columns show for each comparison: the difference in means, the 95% confidence interval (upper & lower limits) and an adjusted p-value.

RCP and period	Difference	Upper limit	Lower limit	p-adjusted
RCP26_2090-RCP26_2050	8.00 x10 ¹¹	1.31 x10 ⁹	1.60 x10 ¹²	4.94 x10 ⁻²
RCP26_2190-RCP26_2050	5.13 x10 ¹¹	-2.86 x10 ¹¹	1.31 x10 ¹²	3.50 x10 ⁻¹
RCP26_2290-RCP26_2050	-4.51 x10 ¹⁰	-8.44 x10 ¹¹	7.54 x10 ¹¹	9.99 x10 ⁻¹
RCP26_2190-RCP26_2090	-2.87 x10 ¹¹	-1.09 x10 ¹²	5.12 x10 ¹¹	7.92 x10 ⁻¹
RCP26_2290-RCP26_2090	-8.45 x10 ¹¹	-1.64 x10 ¹²	-4.65 x10 ¹⁰	3.32 x10 ⁻²
RCP26_2290-RCP26_2190	-5.58 x10 ¹¹	-1.36 x10 ¹²	2.41 x10 ¹¹	2.75 x10 ⁻¹
RCP85_2090-RCP85_2050	1.55 x10 ¹²	7.29 x10 ¹¹	2.37 x10 ¹²	7.45 x10 ⁻⁶
RCP85_2190-RCP85_2050	-7.67 x10 ¹⁰	-8.97 x10 ¹¹	7.43 x10 ¹¹	9.95 x10 ⁻¹
RCP85_2290-RCP85_2050	-2.90 x10 ¹²	-3.72 x10 ¹²	-2.08 x10 ¹²	2.49 x10 ⁻⁸
RCP85_2190-RCP85_2090	-1.63 x10 ¹²	-2.45 x10 ¹²	-8.06 x10 ¹¹	2.19 x10 ⁻⁶
RCP85_2290-RCP85_2090	-4.45 x10 ¹²	-5.27 x10 ¹²	-3.63 x10 ¹²	2.49 x10 ⁻⁸
RCP85_2290-RCP85_2190	-2.82 x10 ¹²	-3.64 x10 ¹²	-2.00 x10 ¹²	2.49 x10 ⁻⁸

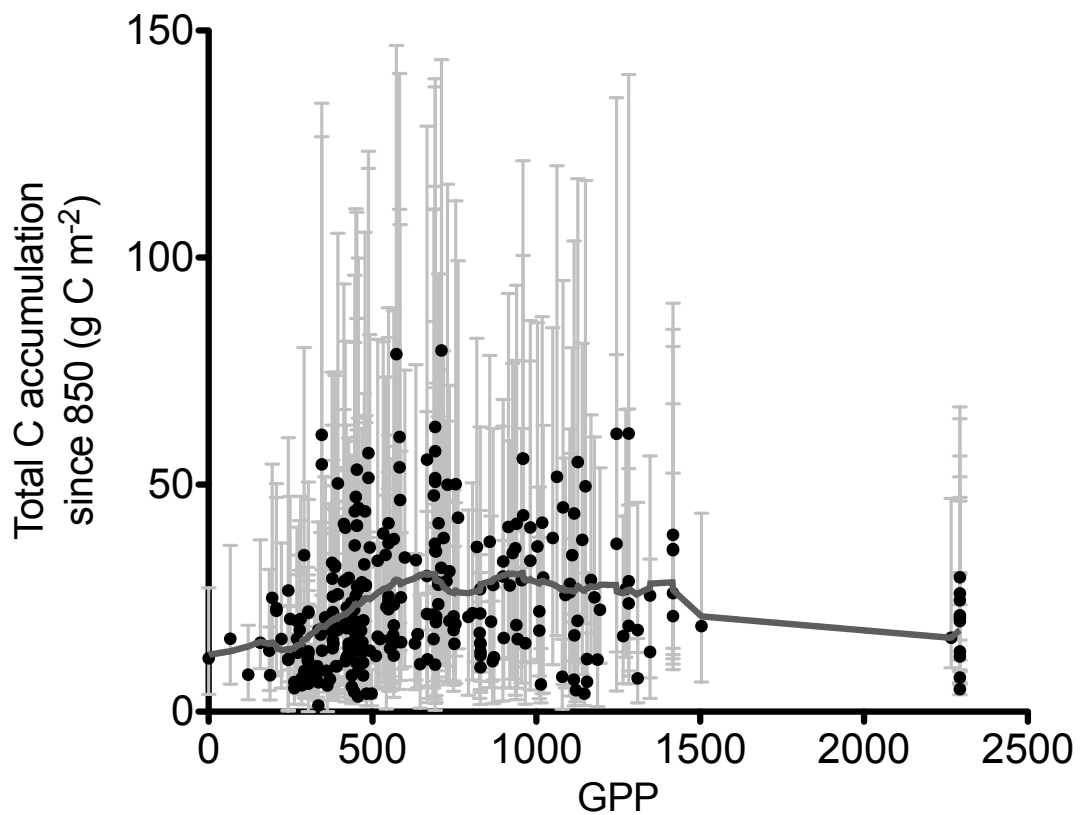


Figure S14: Relationship between the total accumulation over the last millennium and gross primary productivity (GPP) values at each peatland site. The GPP values are derived from FLUXNET observations upscaled using a machine learning technique (MTE) (Jung et al, 2011).

Jung, M., *et al.* (2011), Global patterns of land-atmosphere fluxes of carbon dioxide, latent heat, and sensible heat derived from eddy covariance, satellite, and meteorological observations, *J. Geophys. Res.*, 116, *G00J07*, doi:[10.1029/2010JG001566](https://doi.org/10.1029/2010JG001566).

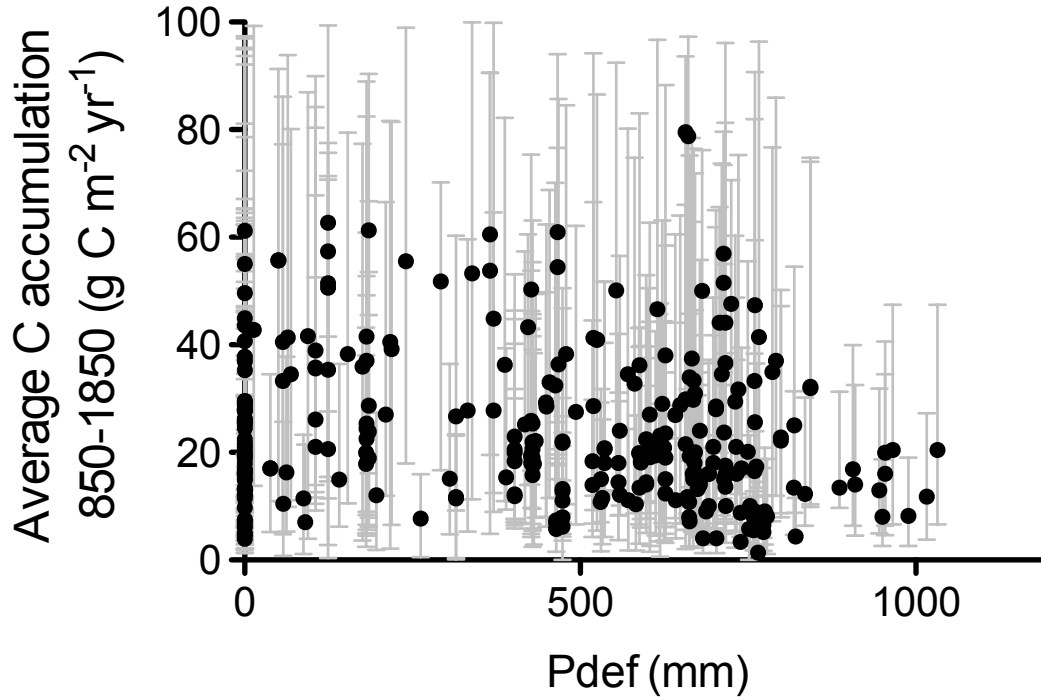


Figure S15: The average yearly accumulation rate over the last millennium at each site compared to the precipitation deficit (Pdef) computed as the difference between the annual potential evapotranspiration and annual precipitation (PET-P) where PET-P cannot go below zero (if negative, it is set to zero).