

Appendix: ^{14}C ages from varves in New England. Possible problems with individual ages are indicated below age listing in parentheses. Missing $\delta^{13}\text{C}$ values are ages for which no value was recorded. All dates are AMS ^{14}C ages unless specified as beta counting dates.

Laboratory Number	Age (^{14}C yr BP)	$\delta^{13}\text{C}$ PDB(‰)	NEVC/ NAVC yr	Material dated	Reference
<u>East Windsor Hills, South Windsor, Connecticut (outcrop - Kelsey Ferguson Plant, Redlands Brick Co.)</u>					
OS-77140	14,300 $\pm$ 60	-26.23	3505/ 3513	Terrestrial plant leaves, mostly <i>Dryas integrifolia</i> (split with below)	Unpublished
OS-77141	14,300 $\pm$ 70	-27.79	3505/ 3513	Terrestrial plant leaves, mostly <i>Dryas integrifolia</i> (split with above)	Unpublished
OS-76979	14,200 $\pm$ 70	-27.24	3726/ 3739	Terrestrial plant leaves, includes <i>Dryas integrifolia</i> , <i>Salix</i> , <i>Populus</i>	Unpublished
OS-77139	12,700 $\pm$ 50 (Younger than contemporaneous samples by ~1500 yr)	-26.19	3763/ 3776	Terrestrial plant leaves, includes <i>Dryas integrifolia</i> , <i>Salix</i> , <i>Populus</i>	Unpublished
OS-76978	13,050 $\pm$ 60 (Younger than contemporaneous samples by ~1000 yr)	-27.29	3820/ 3833	Terrestrial plant leaves, includes <i>Dryas integrifolia</i> , <i>Salix</i> , <i>Populus</i>	Unpublished
GX-32114	14,120 $\pm$ 80	-27.5	3826/ 3839	Terrestrial plant leaves, mostly <i>Salix</i> and <i>Dryas integrifolia</i> (20%)	Unpublished
OS-76905	14,450 $\pm$ 70	-27.57	3896/ 3909	Terrestrial plant leaves, includes <i>Dryas integrifolia</i> , <i>Salix</i> , <i>Populus</i>	Unpublished
OS-76904	13,550 $\pm$ 55	-25.65	3922/ 3935	Terrestrial plant leaves, includes <i>Dryas integrifolia</i> , <i>Salix</i> , <i>Populus</i>	Unpublished
OS-76903	14,000 $\pm$ 70	-27.44	3969/ 3982	Terrestrial plant leaves, 10% <i>Dryas Integrifolia</i> with <i>Salix</i> and <i>Populus</i>	Unpublished
OS-76902	11,950 $\pm$ 55 (Younger than contemporaneous samples by ~1500 yr, low sample mass)	-27.22	3989/ 4002	Terrestrial plant leaves and stems, includes <i>Salix</i> and <i>Populus</i>	Unpublished
OS-77228	13,300 $\pm$ 130	-27.45	3997/ 4010	Terrestrial plant leaves and stems, includes <i>Salix</i> and <i>Populus</i>	Unpublished
GX-32113	13,950 $\pm$ 90	-28.5	4113/ 4126	Terrestrial plant leaves, mostly <i>Salix</i> and <i>Dryas integrifolia</i> (33%)	Unpublished
<u>Amherst, Massachusetts (UMass campus long core)</u>					
Beta-124780	12,370 $\pm$ 120	-27.1	5761-5768/ 5776-5783	Plant fragments from core	Rittenour, 1999

North Hatfield, Massachusetts (long core)

OS-77149	10,150 $\pm$ 50	-27.13	5627/ 5646	Plant fragments from core, includes <i>Dryas integrifolia</i> , <i>Salix</i> and mosses (Younger than contemporaneous samples by >2500 yr)	Unpublished
OS-77150	12,800 $\pm$ 60	-25.26	5713/ 5728	Plant fragments from core, includes <i>Dryas integrifolia</i> , <i>Salix</i> and mosses	Unpublished

Aldrich Brook, Westmoreland, New Hampshire (long core)

OS-64787	11,950 $\pm$ 110	-28.55	6069/ 6084	10 <i>Salix</i> and <i>Populus</i> leaves	Unpublished
OS-65821	12,600 $\pm$ 65	-28.00	6069/ 6084	2 <i>Dryas</i> receptacles, 10 full <i>Dryas integrifolia</i> leaves and mixture of other leaves including <i>Populus</i> , <i>Salix</i> , and <i>Dryas</i> leaf fragments	Unpublished
OS-65780	12,300 $\pm$ 75	-26.74	6226/ 6241	~40 <i>Dryas integrifolia</i> leaves with additional <i>Dryas</i> fragments	Unpublished
OS-66121	11,150 $\pm$ 130	-28.29	6226/ 6241	~40 <i>Dryas integrifolia</i> leaves with additional <i>Dryas</i> fragments (other half of sample above) (Younger than contemporaneous samples by >1100 yr, small sample mass)	Unpublished

Walpole, New Hampshire (outcrop)

OS-64811	12,350 $\pm$ 190	-26.85	5958/ 5973	<i>Dryas integrifolia</i> leaves with two <i>Salix</i> and one <i>Populus</i> leaf	Unpublished
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Canoe Brook, Dummerston, Vermont (outcrop)

GX-25735	12,660 $\pm$ 50	-28.9	5858/ 5873	Woody twigs and <i>Dryas</i> leaves	Ridge and others, 2001
GX-32115	12,340 $\pm$ 80	-29.0	6072/ 6087	Terrestrial plant leaves, mostly <i>Salix</i> and <i>Dryas integrifolia</i> (10%)	Unpublished
GX-14231	12,355 $\pm$ 75	-27.2	6150/ 6165	Bulk sample of silt and clay with non-aquatic leaves and twigs (beta count)	Ridge and Larsen, 1990
GX-14780	12,455 $\pm$ 360	-27.6	6150/ 6165	Handpicked non-aquatic leaves and twigs, mostly <i>Dryas</i> and <i>Salix</i> (beta count)	Ridge and Larsen, 1990
CAMS-2667	12,350 $\pm$ 90	---	6150/ 6165	<i>Salix</i> twig	N. Miller, per. com. 1993
GX-14781	12,915 $\pm$ 175	-27.1	6156/ 6171	Bulk sample of silt and clay with fragments of peat and gyttja, likely contains aquatic plant material (beta count)	Ridge and Larsen, 1990

Newbury, Vermont (outcrop)

OS-64816	10700 ± 430	-25.35	7115/ 6797	Single <i>Dryas integrifolia</i> leaf (Younger than contemporaneous samples by >1500 yr, precision uncertainty high, small sample size)	Unpublished
OS-64812	11,550 ± 200	-27.75	7340/ 7022	<i>Populus balsamifera</i> leaf	Unpublished
OS-65777	11,450 ± 85	-26.80	7378/ 7060	<i>Dryas drummondii</i> leaf and many <i>Dryas integrifolia</i> leaves	Unpublished
OS-64466	11,950 ± 70	-19.39	7379/ 7061	<i>Populus balsamifera</i> leaf	Unpublished
OS-64461	13,250 ± 75	-24.45	7423/ 7105	<i>Populus balsamifera</i> leaf Re-dated as OS-65420) (Older than contemporaneous samples from same section by ~1300 yr)	Unpublished
OS-65420	13,250 ± 65	-25.84	7423/ 7105	<i>Populus balsamifera</i> leaf (OS-64461 re-dated) (Older than contemporaneous samples from same section by ~1300 yr)	Unpublished
GX-23765	11,530 ± 95	-27.0	7435-7452/ 7117-7134	Woody twig	Ridge and others, 1999
OS-64086	11,650 ± 50	-26.32	7441/ 7123	Woody stem	Unpublished
OS-65783	11,700 ± 55	-28.22	7442/ 7124	<i>Vaccinium</i> leaf and <i>Dryas integrifolia</i> leaves	Unpublished
OS-64463	11,900 ± 70	-26.84	7461-7462/ 7143-7144	<i>Populus balsamifera</i> leaf	Unpublished
OS-64818	13,250 ± 1300	-25.00	7516/ 7198	Single <i>Salix</i> leaf (Older than contemporaneous samples by >1200 yr, large precision uncertainty, small sample size)	Unpublished
GX-23766	11,045 ± 70	-27.5	8206/ 7888	Woody twig	Ridge and others, 1999
OS-77142	11,100 ± 50	-26.38	8310/ 7992	Chunk of wood	Unpublished
GX-23640	10,940 ± 70	-26.8	8357/ 8039	Woody twig	Ridge and others, 1999
GX-23641	10,080 ± 580	-26.7	8498-8500/ 8180-8182	Woody twig (beta count) (Precision uncertainty high, younger than contemporaneous samples by ~700 yr)	Ridge and others, 1999
GX-23767	10,685 ± 70	-26.3	8504/ 8186	Woody twig	Ridge and others, 1999
GX-23642	10,040 ± 230	-26.5	8542-8544/ 8224-8226	Chunk of wood (beta count) (Younger than contemporaneous samples by ~700 yr)	Ridge and others, 1999
GX-23643	10,440 ± 520	-26.8	8652-8662/ 8334-8344	Two woody twigs (beta count) (Large precision uncertainty)	Ridge and others, 1999

Wells River, Vermont (outcrop)

OS-66132	12,100 ± 200	-26.05	7391/ 7073	<i>Dryas drummondii</i> leaf	Unpublished
OS-64475	11,950 ± 65	-27.22	7396/ 7078	Woody twig	Unpublished
OS-65809	11,950 ± 50	-27.77	7396/ 7078	Thin woody twig	Unpublished
OS-65810	11,800 ± 50	-27.25	7396/ 7078	Thin twigs and twig fragments	Unpublished
OS-64474	11,850 ± 70	-26.78	7414/ 7096	Two woody twigs	Unpublished
OS-65620	11,900 ± 45	-3.61	7494/ 7176	Snail, genus <i>Fossaria</i> in family <i>Lymnaeidae</i> (Note: this age may have a reservoir error but is essentially the same as ages for twig samples that may have a lag time error.)	Unpublished

East Barnet, Passumpsic River valley, Vermont (outcrop - site PAS2)

OS-64814	9,540 ± 250	-27.51	7330/ 7012	Two leaves: <i>Dryas integrifolia</i> and <i>Dryas drummondii</i> (Small sample size, younger than contemporaneous samples by ~2500 yr)	Unpublished
OS-64817	10,950 ± 620	-25.00	7528/ 7210	<i>Salix</i> leaf (Precision uncertainty high, small sample size, younger than contemporaneous samples by >700 yr)	Unpublished
OS-64815	11,600 ± 400	-28.64	7585/ 7267	<i>Salix</i> leaf fragments	Unpublished
GX-26456	11,220 ± 50	-27.1	7754/ 7436	Woody twig	Unpublished

Columbia Bridge, Vermont (outcrop)

WIS-961	11,540 ± 110	-29.0	(>7400)/(> 7082)	Wood fragments (beta count) (Sample not matched to varve chronologies)	Miller and Thompson, 1979
WIS-919	11,390 ± 115	-27.5	(>7400)/(> 7082)	Wood fragments (beta count) (Sample not matched to varve chronologies)	Miller and Thompson, 1979
WIS-925	20,500 ± 250	-	(>7400)/(> 7082)	bulk sediment w <i>Potamogeton</i> leaves (beta count) (Sample not matched to varve chronologies, <i>Potamogeton</i> is aquatic and acquires carbon from non-atmospheric sources)	Miller and Thompson, 1979

REFERENCES

- Miller, N.G., and Thompson, G.G., 1979, Boreal and western North American plants in the late Pleistocene of Vermont: Journal of the Arnold Arboretum, v. 60, p. 167-218.
- Ridge, J.C., Larsen, F.D., 1990, Re-evaluation of Antevs' New England Varve Chronology and new radiocarbon dates of sediments from glacial Lake Hitchcock: Geological Society of America Bulletin, v. 102, p. 889-899.
- Ridge, J.C., Besonen, M.R., Brochu, M., Brown, S.L., Callahan, J.W., Cook, G.J., Nicholson, R.S., and Toll, N.J., 1999, Varve, Paleomagnetic, and 14C Chronologies for Late Pleistocene Events in New Hampshire and Vermont, U.S.A.: Géographie physique et Quaternaire, v.53, 79-108.

- Ridge, J.C., Canwell, B.A., Kelly, M.A., and Kelley, S.Z., 2001, An atmospheric ^{14}C chronology for Late Wisconsinan deglaciation and sea level change in eastern New England using varve and paleomagnetic records, in T. Weddle and M. Retelle (eds.), "Deglacial History and Relative Sea-level Changes, Northern New England and Adjacent Canada": Geological Society of America Special Paper 351, p. 171-189.
- Rittenour, T.M., 1999, Drainage history of glacial Lake Hitchcock, northeastern USA: Unpublished M.S. Thesis, Univ. of Massachusetts, Amherst, 179 p.
- Wilson, B.R., 2000, A chronology and environmental interpretation of glacial to non-glacial lacustrine varves in the Passumpsic Valley, Barnet, Vermont: Unpublished B.S. Thesis, Tufts University, Medford, Massachusetts, 83 p.