Supplementary Table 1. Radiocarbon ages of bulk sediment organic matter, plant fragments and shell fragments in coastal lake sediment cores.

Sample ID	AMS Lab ID	Depth in core (cm)	Sample type	$\Delta^{14}C$ (‰)	±	^{14}C Age (^{14}C yr BP)	±	Calibrated ^{14}C age (cal yr BP)*					Source
								95.4% probability (2σ) From	to	Mean	1σ	Median	
EL052209-02:													
052209-02-003	OS-75163	0.3	bulk sediment	-121.5	4.1	985	35	960	795	880	50	890	Das et al. (2013)
052209-02-200	OS-75470	20	bulk sediment	-267.4	3.1	2440	35	2700	2360	2520	110	2490	Das et al. (2013)
052209-02-574	OS-75471	57	bulk sediment	-317.6	3.1	3010	35	3340	3080	3200	70	3200	Das et al. (2013)
EL09A-5.5-6	UCIT34652	5.5-6	plant fragments	555.6	2.8	>Modern		-15	-20	-20	1	-20	
EL09A-53-53.5	UCIT34651	53-53.5	plant fragments	-260.5	1.5	2360	20	2435	2340	2370	30	2355	
EL09A-58.5-59	UCIT34650	58.5-59	plant fragments	-276.6	1.3	2535	15	2740	2520	2670	80	2720	
EL052209-03:													
052209-03-003	OS-75472	0.3	bulk sediment	-65	3.2	480	25	540	500	520	10	520	
EL1-2st	UCIT27590	1.5	bulk sediment	-77.9	2.0	590	20	645	540	600	30	605	
052209-03-100	OS-77957	10	bulk sediment			1260	25	1280	1090	1215	40	1220	
052209-03-200	OS-75473	20	bulk sediment	-199.6	3.7	1730	35	1715	1555	1640	50	1640	
052209-03-400	OS-77958	40	bulk sediment			2930	25	3165	2995	3080	50	3080	
052209-03-573	OS-75474	57.3	bulk sediment	-275.3	2.8	2530	30	2750	2490	2620	80	2620	
052209-03-700	OS-77885	70	bulk sediment			3010	25	3330	3080	3200	50	3200	
EL85-88st	UCIT26417	85-88	bulk sediment	-282.8	1.6	2610	20	2765	2730	2750	10	2740	

052209-03-880	OS-75525	88	bulk sediment	-302.2	4.3	2830	50	3075	2790	2940	70	2940	
EL88-90st	UCIT26418	88-90	bulk sediment	-317.4	2.0	3005	25	3325	3080	3190	50	3190	
EL90-92st	UCIT26419	90-92	bulk sediment	-318.9	1.5	3025	20	3330	3160	3230	50	3220	
EL92-94st	UCIT26420	92-94	bulk sediment	-320.0	1.5	3040	20	3340	3170	3255	50	3243	
052209-03-1060	OS-75524	102-104	bulk sediment	-340.1	3.9	3280	45	3610	3400	3510	50	3510	
EL 1-2 wd	UCIT27586	1.5	plant fragments	53.2	1.8	>Modern		-55		-55	10	-55	
EL09-0-2	UCIT34664	0-2	plant fragments	245.7	2.0	>Modern		-10	-30	-25	10	-30	
EL09B-21-21.5	UCIT34655	20-21	plant fragments	-138.1	2.2	1130	20	1070	970	1025	35	1020	
EL09B-42-42.5	UCIT34646	42-42.5	plant fragments	-183.8	1.4	1570	15	1525	1410	1470	35	1470	
EL09B-51.5-52	UCIT34653	51.5-52	plant fragments	-227.7	1.3	2010	15	1995	1900	1960	20	1960	
EL85-88wd	UCIT26428	85-88	plant fragments	-260.2	1.4	2360	20	2435	2340	2370	30	2355	Das et al. (2013)
EL88-90wd	UCIT26429	88-90	plant fragments	-267.7	1.5	2445	20	2700	2360	2530	110	2490	Das et al. (2013)
EL90-92wd	UCIT26430	90-92	plant fragments	-275.5	1.4	2530	20	2740	2500	2640	80	2630	Das et al. (2013)
EL92-94wd	UCIT26431	92-94	plant fragments	-274.6	1.4	2520	20	2740	2500	2610	80	2590	Das et al. (2013)
EL09B-102-102.5	UCIT34645	102-104	plant fragments	-280.3	1.3	2580	15	2750	2720	2740	10	2740	
WL052109-03:													
052109-03-010	OS-76901	0-1	bulk sediment	-136.1	3.7	1120	35	1170	955	1030	50	1020	
WL8st	UCIT26415	8	bulk sediment	-159.3	1.6	1335	20	1300	1185	1275	25	1280	
052109-03-140	OS-77259	14	bulk sediment	-135.9	3.3	1120	30	1175	955	1025	45	1020	
052109-03-300	OS-77258	30	bulk sediment	-134.2	3.1	1100	30	1065	935	1010	40	1005	
WL49.5st-	UCIT26416	50	bulk sediment	-261.2	2.6	2370	30	2490	2340	2400	60	2390	
052109-03-680	OS-77260	68	bulk sediment	-251.6	2.9	2270	30	2350	2160	2270	60	2300	
052109-03-750	OS-77261	75	bulk sediment	-273	4.4	2500	45	2740	2380	2590	90	2580	

WL83.5st	UCIT26421	84	bulk sediment	-362.6	5.2	3560	70	4080	3650	3850	100	3850	
WL94.3-94.5st	UCIT26422	94	bulk sediment	-347.3	1.5	3365	20	3685	3565	3610	30	3605	
WL94.5-95st	UCIT26423	95	bulk sediment	-381.5	3.2	3800	45	4410	4010	4190	80	4190	
052109-03-1000	OS-77262	95-100	bulk sediment	-291	2.6	2700	30	2855	2755	2800	30	2800	
WL102st	UCIT26424	102.5	bulk sediment	-471.0	3.8	5050	60	5910	5660	5800	75	5800	
WL121st	UCIT26425	121	bulk sediment	-442.3	3.6	4630	60	5580	5070	5360	110	5390	
052109-03-1270	OS-77263	127	bulk sediment	-350.3	3.3	3410	40	3830	3570	3670	60	3660	
052109-03-1580	OS-77264	158	bulk sediment	-355.5	2.6	3470	30	3830	3640	3750	50	3750	
WL09-3.5-5.5	UCIT34661	3.5-4.5	charred stems/grass	-53.7	1.5	380	15	500	330	450	60	470	
WL09-5.5-7.5	UCIT34662	6.5	plant fragments	-39.8	1.7	260	15	420	155	300	40	300	
WL09-7.5-11.5	UGIT34663	7.5	plant fragments	-44.4	1.4	300	15	430	300	380	40	400	
WL8wd	UCIT26426	8	plant fragments	-53.2	1.6	380	15	500	330	450	60	470	Das et al. (2013)
YW3026-WL09	UCIT35755	41-41.5	plant fragments	-87.0	2.0	665	20	670	560	620	40	640	
WL49.5wd	UCIT26427	50	plant fragments	-135.4	1.5	1110	15	1060	970	1015	30	1010	Das et al. (2013)
WL09,109.5-110	UCIT34199	109.5-110	plant fragments	-250.6	1.1	2255	15	2340	2180	2260	60	2240	
WL09, 131-131.5	UCIT34200	131-131.5	plant fragments	-265.6	5.9	2420	70	2720	2350	2520	120	2500	
WL83.5sh	UCIT26435	83.5	shell fragments	-253.3	1.6	2285	20	2350	2185	2310	40	2330	Das et al. (2013)
WL94.3-94.5sh	UCIT26433	94.3-94.5	shell fragments	-258.5	1.4	2340	20	2365	2325	2350	10	2350	Das et al. (2013)
WL94.5-95sh	UCIT26432	94.5-95	shell fragments	-259.1	1.4	2350	20	2425	2335	2355	20	2350	Das et al. (2013)
WL102.5s	UCIT26434	102.5	shell fragments	-298.9	1.5	2795	20	2955	2850	2895	30	2895	
WL09-109.5-	UCIT34194	109.5-110	shell fragments	-275.4	1.1	2525	15	2740	2500	2630	80	2625	

110cm,S													
WL121sh	UCIT26436	121	shell fragments	-285.1	1.5	2635	20	2775	2740	2755	10	2755	Das et al. (2013)
WL09_130.5-131cm,S	UCIT34195	130.5-131	shell fragments	-303.0	1.0	2835	15	2990	2880	2930	30	2935	
WL070910-03:													
070910-02	OS-83029	0	bulk sediment			230	15	300	150	230	70	290	
070910-03-9.5	OS-83030	10	bulk sediment			1020	20	965	920	940	14	940	
WL16-18 st	UCIT27587	17	bulk sediment	-276.5	1.5	2540	20	2740	2510	2670	80	2710	
WL18-20 st	UCIT27588	19	bulk sediment	-242.9	2.8	2175	30	2310	2070	2210	70	2230	
070910-03-36	OS-83031	36	bulk sediment			2120	20	2150	2005	2095	40	2095	
070910-03-75	OS-83032	75	bulk sediment			3270	25	3565	3445	3500	40	3500	
070910-03-88	OS-83033	88	bulk sediment			3410	25	3715	3585	3660	40	3660	
070910-03-127	OS-83034	127	bulk sediment			3630	25	4070	3865	3940	40	3940	
WL 16-18 shell	UCIT27580	17	shell fragments	-142.8	1.5	1180	15	1175	1060	1115	40	1115	
WL 18-20 shell	UCIT27581	19	shell fragments	-138.1	2.0	1135	20	1170	970	1030	40	1020	
WL shell hash	UCIT27577		shell fragment from shell hash on lake shore	-552.3	0.8	6395	15	7415	7270	7330	45	7320	
Mullet Pond 052416-02B:													
MP-75s	UCIT35771	18.8	bulk sediment	-134.9	1.4	1100	15	1055	965	1010	30	1000	
MP-378s	UCIT35772	94.5	bulk sediment	-193.9	1.4	1665	15	1605	1535	1565	20	1560	
MP-75	UCIT34665	18.8	Plant fragments	-108.5	1.4	860	15	790	730	760	20	760	
MP-378	UCIT34658	94.5	Plant fragments	-183.6	1.2	1565	15	1525	1410	1470	35	1470	
Mullet Pond 052416-01A:													
052416-01A-RC-1	OS-128140	5.4	bulk sediment	-113.67		905	15	910	765	850	40	865	
052416-	OS-128141	27.4	bulk sediment	-148.34		1230	15	1,260	1080	1170	50	1175	

01A-RC-2												
052416-01A-RC-3	OS-128142	52.4	bulk sediment	-158.6		1320	15	1,295	1185	1265	30	1275
052416-01A-RC-4	OS-128143	78.4	bulk sediment	-179.12		1520	20	1,515	1355	1405	40	1395
Mullet Pond 120916-01B:												
MP-TOP	UCIT35735	0.1	Plant fragments	180.7	1.8	-1395	15	-10	-40	-35	10	
MP-9	UCIT35736	2.3	Plant fragments	72.1	1.6	-620	15	-5	-55	-10	10	
MP-29	UCIT35737	7.3	Plant fragments	63.3	1.6	-555	15	-5	-55	-5	10	
MP-83	UCIT35738	20.8	Plant fragments	-41.9	1.4	280	15	430	290	350	50	315
MP-157	UCIT35739	39.3	Plant fragments	-154.4	1.5	1280	15	1275	1180	1230	30	1235
MP-222	UCIT35740	55.5	Plant fragments	-238.4	1.3	2125	15	2150	2040	2105	40	2110
MP-254	UCIT35741	63.5	Plant fragments	-277.6	1.5	2545	20	2750	2510	2680	70	2720
Cedar Key Lake core 070617-02:												
	OS-135055	50.5	bulk sediment			3,350	20	3,680	3,510	3595	30	3595
CK-02B-14	UCIT36587	5	Plant fragments	129.5	1.9	Modern		-5	-45	-40	10	-40
CK-02B-153	UCIT36588	39.75	Plant fragments	-219.0	1.1	1920	15	1,895	1,825	1865	20	1870
CK-02B-196	UCIT36589	50.5	Plant fragments	-253.8	1.2	2285	15	2,350	2,210	2320	30	2330

* The ^{14}C ages were calibrated using the online OxCal 4.3 program (Ramsey, 2009) and the IntCal13 curve (Reimer et al., 2013), with range expressed at 2σ (95.4%) confidence level. All ^{14}C ages are rounded according to Stuiver and Polach (1977). Calibrated dates reported are referred to as "cal yr BP".

Supplementary Table 2. Radiocarbon contents of modern samples from coastal lakes

AMS Lab ID	Sample ID	Sample type	Location	Sampling Date	$\Delta^{14}C$	±	^{14}C age (^{14}C yr BP)	±	Calibrated ^{14}C age (cal yr BP)* 95.4% probability (2σ) From	to	Mean	1σ	Estimated age (CE)**	Estimated age (Years before sampling date)
UCIT27585	WL AP4	Aquatic plant	Western Lake	3/9/10	42.4	1.8	>Modern						2009-10 or 1957	0-1 or 53
UCIT27584	WL AP7	Aquatic plant	Western Lake	6/20/12	33.9	1.8	>Modern						2012 or 1956-57	0 or 55-56
UCIT35743	MP-5	*Nymphaea spp.*	Mullet Pond	12/9/16	10.5	1.5	>Modern						2016 or 1956	0 or 60
UCIT27575	Wl snail 1	Small shell from nearby beach	Western Lake	6/20/12	-30.6	1.7	190	15	290	-5	160	100		
UCIT27576	Wl snail 2	Small shell from nearby beach	Western Lake	6/20/12	-58.5	2.5	425	25	520	340	490	35		
UCIT27579	WL beach shell 2	Small shell from nearby beach	Western Lake	6/20/12	-62.9	2.2	460	20	530	500	510	10		
UCIT27578	WL shore	A complete small freshwater snail shell	Western Lake	6/20/12	59.8	2.2	>Modern						2005 or 1957-58	7 or 55
UCIT34190	WL-ms-1	*Neritina usnea* (collected live)	Western Lake	5/25/16	-4.9	1.5	-20	15	-4	-7	-5	0	1955	61
UCIT34191	WL-ms-2	*Neritina usnea* (collected live)	Western Lake	5/25/16	20.8	1.8	>Modern						2013-14 or 1956-57	3 or 60
UCIT34192	WL-ms-3	*Neritina usnea* (collected live)	Western Lake	5/25/16	23.7	1.5	>Modern						2013 or 1956-57	3 or 60
UCIT34193	WL-ms-4	*Mytilopsis leucophaeata*	Western Lake	5/25/16	15.9	1.6	>Modern						2015-16 or 1955-56	1 or 60-61

* The ^{14}C ages were calibrated using the online OxCal 4.3 program (Ramsey, 2009) and the IntCal13 curve (Reimer et al., 2013), with range expressed at 2σ (95.4%) confidence level. All ^{14}C ages are rounded according to Stuiver and Polach (1977). Calibrated dates reported are referred to as "cal yr BP".

**The ages were estimated by comparing $\Delta^{14}C$ values with the atmospheric ^{14}C record for the period of 1840-2016 (Fig. 4A).

Supplementary Table 3. Radiocarbon contents of POM and DOM samples from coastal lakes

AMS Lab ID	Sample ID	Sample type	Sample Loc.	$\Delta^{14}C$	±	^{14}C age (^{14}C yr BP)	±	Calibrated ^{14}C age (cal yr BP)*				Sampling date	Estimated age (CE)**	Year before sampling
								95.4% probability From	to	Mean	1σ			
OS-84507	ELPOC3-9-10	POM	Eastern Lake	-12.9	3.2	45	25	250	30	100	75	3/9/10		
OS-84520	WLPOC3-9-10	POM	Western Lake	-29.3	3.6	180	30	300	??	160	90	3/9/10		
OS-84527	WLPOC5-4-10	POM	Western Lake	-17.4	4.5	85	35	270	15	130	80	5/4/10		
OS-84525	WLPOC7-9-10	POM	Western Lake	4.4	4.7	>modern						7/9/10	1955	55
UCIT27589	WLPOC6/20/12	POM	Western Lake	-88.6	1.9	685	20	680	565	640	40	6/20/12		
UCIT34201	WL-POC-2	POM	Western Lake	10.2	1.5	>modern						5/25/16	2016 or 1956	0 or 60
OS-84500	ELDOC3-9-10	DOM	Eastern Lake	77.8	3.5	>modern						3/9/10	2001 or 1957-58	9 or 52-53
OS-84502	WLDOC3-9-10	DOM	Western Lake	69.7	3.5	>modern						3/9/10	2002 or 1957-58	8 or 52-53
OS-84503	WLDOC5-4-10	DOM	Western Lake	58.9	3.4	>modern						5/4/10	2005 or 1957-58	5 or 52-53
OS-84501	WLDOC7-9-10	DOM	Western Lake	91.2	3.7	>modern						7/9/10	1995-96 or 1958	14-15 or 52
UCIT35742	MP-POC-5	POM	Mullet Pond	20.3	1.6	>modern						8/31/16	2014 or 1956	2 or 60
UCIT35744	MP-POC-7	POM	Mullet Pond	13.1	1.4	>modern						9/2/16	2016 or 1955-56	0 or 60-61
UCIT35746	MP-POC-9	POM	Mullet Pond	40.4	1.5	>modern						9/16/16	2009-10 or 1957	6-7 or 59
UCIT35745	MP-POC-11	POM	Mullet Pond	15.7	1.9	>modern						11/19/16	2015-16 or 1956	0-1 or 60

* The ^{14}C ages were calibrated using the online OxCal 4.3 program (Ramsey, 2009) and the IntCal13 curve (Reimer et al., 2013), with range expressed at 2σ (95.4%) confidence level. All ^{14}C ages are rounded according to Stuiver and Polach (1977). Calibrated dates reported were referred to as "cal yr BP".

**The ages were estimated by comparing $\Delta^{14}C$ values with the atmospheric ^{14}C record for the period of 1840-2016 (Fig. 4A).

Supplementary Table 4 Comparison of mean calibrated radiocarbon ages of co-existing bulk sediment organic matter and wood/shell in the lake sediment cores.

Core ID	Depth in core (cm)	^{14}C age of sediment (cal yr BP)	1σ	^{14}C age of plant fragments (cal yr BP)	1 σ	^{14}C age of shells (cal yr BP)	1 σ	Age difference, Bulk sed - plant (Yrs.)	Age difference, Bulk sed - shell (Yrs.)	Age difference, Shell-plant (Yrs.)
Eastern Lake core 052209-03:										
	0-2	600	30	-55	10			655		
	20-21	1640	50	1025	35			615		
	40-42	3080	50	1470	35			1610		
	85-88	2940	70	2370	30			570		
	88-90	3190	50	2530	105			660		
	90-92	3230	50	2640	80			590		
	92-94	3255	50	2610	80			645		
	102-104	3510	50	2740	10			770		
Eastern Lake core 052209-02:										
	0-6	880	50	-20	1			900		
	54-59	3200	65	2520	75			680		
Western Lake core 052109-03:										
	8	1275	20	450	55			825		
	50	2400	60	1015	25			1385		
	84	3850	100			2310	45		1540	
	94	3610	30			2350	10		1260	
	95	4190	80			2355	20		1835	
	109.5-110			2260	57	2630	80			370
	100-110	5800	73	2260	57	2765	78	3535	3035	505
	121	5360	110			2756	8		2604	
	131-131.5			2520	115	2930	30			410
	127-131.5	3665	60	2520	115	2930	30	1145	735	410
Western Lake core 070910-03:										
	16-18	2670	80			1115	35		1555	
	18-20	2210	65			1030	40		1180	
Mullet Pond Core 052416-02B:										
	19	1010	30	760	20			250		
	95	1565	20	1470	35			95		
Cedar Key Lake core 070617-02:										
	50.5	3595	30	2320	30			1275		