

Data Repository Tables
Historic calcite record from the Finger Lakes: Impact of acid rain on a buffered terrain
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CONESUS LAKE SEDIMENTOLOGY

Year (A.D.)	% Calcite
1997	1.9
1995	4.1
1993	6.5
1991	3.8
1989	4.1
1987	3.3
1985	3.5
1983	3.8
1981	3.3
1979	3
1977	3.8
1975	1.9
1973	0
1967	0
1958	0
1949	0
1940	0
1931	0
1922	0
1913	0
1904	0
1895	0
1886	0
1877	0
1867	0
1858	0
1849	0
1840	0
1831	0

Year (A.D.)	% Calcite
1822	0
1813	0
1804	0
1795	0
1786	0
1777	0
1767	0
1758	0
1749	0
1740	0
1731	0
1722	0
1713	0
1704	0
1695	0
1686	0
1677	0
1667	0
1658	0
1649	0
1640	0

HEMLOCK LAKE SEDIMENTOLOGY

Year (A.D.)	% Calcite
1997	0
1994	0
1991	0
1988	0
1985	0
1982	0
1979	0
1977	0
1974	0
1971	0
1968	0
1965	0
1962	0
1959	0
1957	0
1954	0
1951	0
1948	0
1945	0
1942	0
1939	0
1937	0
1934	0
1931	0
1928	0
1925	0
1922	0
1919	0
1916	0
1914	0
1911	0
1908	0
1905	0
1902	0
1899	0
1896	0
1894	0
1891	0

Year (A.D.)	% Calcite
1888	0
1885	0
1882	0
1879	0
1876	0
1874	0
1871	0
1868	0
1865	0
1862	0
1859	0
1856	0
1854	0
1851	0
1848	0
1845	0
1842	0
1839	0
1839	0

**CANADICE LAKE
SEDIMENTOLOGY**

Year (A.D.)	% Calcite
1996	0
1990	0
1985	0
1979	0
1973	0
1968	0
1962	0
1957	0
1951	0
1946	0
1940	0
1935	0
1929	0
1923	0
1918	0
1912	0
1907	0
1901	0
1896	0
1890	0
1885	0
1879	0
1873	0
1868	0
1862	0
1857	0
1851	0
1846	0
1840	0
1834	0
1829	0
1823	0
1818	0
1812	0
1807	0
1801	0
1796	0
1790	0
1784	0
1779	0
1773	0
1768	0
1762	0
1757	0
1751	0

HONEOYE LAKE SEDIMENTOLOGY

Year (A.D.)	% Calcite
1995	0
1989	0
1982	0
1976	0
1970	0
1964	0
1957	0
1951	0
1945	0
1939	0
1932	0
1926	0
1920	0
1914	0
1907	0
1901	0
1895	0
1889	0
1882	0
1876	0
1870	0
1864	0
1857	0
1851	0
1845	0
1839	0
1832	0
1826	0
1820	0
1814	0
1807	0
1801	0
1795	0
1789	0
1782	0
1776	0
1770	0
1764	0

Year (A.D.)	% Calcite
1757	0
1751	0
1745	0
1739	0
1732	0
1726	0
1720	0
1714	0
1707	0
1701	0
1695	0
1689	0
1682	0
1676	0
1670	0
1664	0
1657	0
1651	0
1645	0
1639	0
1632	0
1626	0

CANANDAIGUA LAKE SEDIMENTOLOGY

Year (A.D.)	% Calcite	Year (A.D.)	% Calcite
1996	3.6	1806	0.0
1991	1.8	1801	0.0
1986	3.3	1796	0.0
1981	3.7	1791	0.0
1976	3.6	1786	0.0
1971	2.5	1781	0.0
1966	2.4	1776	0.0
1961	1.6	1771	0.0
1956	2.5	1766	0.0
1951	0.0	1761	0.0
1946	2.1	1756	0.0
1941	0.4	1751	0.0
1936	0.0	1746	0.0
1931	0.4	1741	0.0
1926	0.6	1736	0.0
1921	2.1	1731	0.0
1916	1.9	1726	0.0
1911	1.2	1721	0.0
1906	0.1	1716	0.0
1901	2.1	1711	0.0
1896	0.1	1706	0.0
1891	0.0	1701	0.0
1886	0.4		
1881	1.9		
1876	0.0		
1871	0.8		
1866	0.0		
1861	0.4		
1856	1.2		
1851	1.8		
1846	0.1		
1841	2.5		
1836	5.1		
1831	3.3		
1826	5.1		
1821	2.9		
1816	0.0		
1811	0.0		

KEUKA LAKE SEDIMENTOLOGY

Year (A.D.)	% Calcite	Year (A.D.)	% Calcite
1997	0	1886	0
1994	0	1883	0
1991	0	1880	0
1988	0	1877	0
1986	0	1874	0
1983	0	1871	0
1980	0	1868	0
1977	0	1866	0
1974	0	1863	0
1971	0	1860	0
1968	0	1857	0
1966	0	1854	0
1963	0	1851	0
1960	0	1848	0
1957	0	1845	0
1954	0	1843	0
1951	0	1840	0
1948	0	1837	0
1946	0	1834	0
1943	0	1831	0
1940	0	1831	0
1937	0		
1934	0		
1931	0		
1928	0		
1926	0		
1923	0		
1920	0		
1917	0		
1914	0		
1911	0		
1908	0		
1906	0		
1903	0		
1900	0		
1897	0		
1894	0		
1891	0		
1888	0		

SENECA LAKE SEDIMENTOLOGY

Year (A.D.)	% Calcite
1997	1.8
1993	5.9
1989	6.3
1986	7.0
1982	5.0
1978	6.6
1974	7.0
1971	7.7
1967	6.6
1963	4.1
1960	2.9
1956	1.8
1952	0.0
1949	0.0
1945	0.0
1941	0.0
1937	0.0
1934	0.0
1930	0.0
1926	0.0
1923	0.0
1919	0.0
1915	0.0
1912	0.0
1908	0.0
1904	0.0
1900	0.0
1897	0.0
1893	0.0
1889	0.0
1886	0.0
1882	0.0
1878	0.0
1875	0.0
1871	0.0
1867	0.0
1863	0.0
1860	0.0

Year (A.D.)	% Calcite
1856	0.0
1852	0.0
1849	0.0
1845	0.0
1841	0.0
1838	0.0
1834	0.0
1830	0.0
1826	0.0
1823	0.0
1819	0.0
1815	0.0
1812	0.0
1808	0.0
1804	0.0
1801	0.0
1797	0.0
1793	0.0
1789	0.0
1786	0.0
1782	0.0
1778	0.0
1775	0.0
1771	0.0
1767	0.0
1764	0.0
1760	0.0
1756	0.0
1756	0.0

CAYUGA LAKE SEDIMENTOLOGY

(1 of 2)

Year (A.D.)	Mass Magnetic Susceptibility (m ³ /kg)	% Total Organic Matter	% Calcite
1996	1.844E-03	11.6	15.2
1993	3.877E-03	11.3	15.7
1989	2.306E-03	11.5	15.9
1985	1.512E-03	10.3	11.9
1981	3.934E-03	10.5	11.1
1978	5.269E-03	10.0	11.1
1975	6.300E-03	9.8	11.0
1973	9.800E-03	10.1	9.6
1971	1.554E-02	9.3	5.3
1969	1.270E-02	9.9	6.5
1967	1.182E-02	9.7	7.4
1965	2.071E-02	9.8	7.4
1963	2.580E-02	10.1	9.0
1961	1.989E-02	10.1	8.9
1957	1.602E-02	9.4	7.6
1954	1.504E-02	9.6	7.5
1951	4.592E-02	9.4	7.0
1948	1.329E-02	9.3	7.4
1946	7.837E-03	9.5	6.7
1942	6.516E-03	10	4.6
1938	7.131E-03	9.5	3.7
1935	8.768E-03	9.4	2.0
1932	9.433E-03	9	2.3
1929	1.392E-02	9.3	1.4
1927	1.442E-02	8.9	2.3
1924	1.207E-02	8.6	3.1
1921	1.385E-02	8.5	2.2
1919	1.100E-02	9.3	1.2
1916	1.222E-02	9.7	2.1
1913	1.191E-02	9.2	2.9
1910	1.353E-02	8.3	1.2
1908	1.318E-02	8.5	0.8
1907	1.138E-02	9.5	0.0
1905	7.599E-03	8.1	1.3
1903	6.581E-03	8.7	0.7
1902	5.920E-03	8.3	2.0
1900	5.913E-03	8.7	1.8
1896	5.898E-03	8.1	0.5
1892	5.177E-03	8.4	0.7
1889	5.246E-03	8.9	2.7
1885	4.886E-03	8.5	1.2
1881	4.808E-03	8.6	0.9
1878	4.509E-03	8.3	1.3
1876	4.875E-03	8.3	1.9
1873	3.993E-03	8.2	1.2
1870	4.649E-03	7.8	1.7

CAYUGA LAKE SEDIMENTOLOGY
(2 OF 2)

Year (A.D.)	Mass Magnetic Susceptibility (m ³ /kg)	% Total Organic Matter	% Calcite
1869	5.271E-03	7.9	1.5
1864	5.210E-03	8.0	2.2
1862	5.309E-03	7.8	2.8
1859	5.037E-03	7.7	2.6
1856	4.738E-03	7.7	3.5
1854	5.305E-03	7.7	2.6
1850	4.787E-03	8.1	2.4
1844	4.836E-03	7.9	3.0
1840	5.291E-03	7.8	3.9
1836	4.966E-03	8.3	2.6
1832	4.859E-03	8.8	2.7
1829	5.070E-03	9.8	0.6
1827	4.899E-03	9.2	1.7
1824	3.943E-03	9.7	0.4
1821	4.415E-03	8.8	0.0
1817	4.067E-03	8.5	0.0
1813	4.379E-03	8.9	0.0
1810	4.083E-03	8.4	0.0
1808	4.067E-03	9.6	0.0
1804	4.425E-03	8.5	0.0
1800	4.289E-03	8.5	0.0
1797	4.535E-03	9.4	0.0
1794	4.416E-03	9.6	0.0
1792	4.855E-03	9.2	0.0
1788	4.770E-03	8.9	0.0
1783	5.122E-03	9.4	0.0
1781	4.591E-03	9.5	0.0
1778	5.171E-03	8.9	0.0
1775	5.038E-03	8.6	0.0
1773	5.067E-03	9.5	0.0
1770	4.708E-03	10.3	0.0
1767	4.269E-03	8.6	0.0
1763	6.500E-03	9.3	0.0
1759	5.350E-03	8.9	0.0
1756	5.518E-03	8.3	0.0
1754	5.608E-03	9.0	0.0
1751	6.054E-03	8.7	0.0
1748	6.322E-03	8.7	0.0
1746	5.433E-03	8.2	0.0
1743	6.363E-03	8.9	0.0

OWASCO LAKE SEDIMENTOLOGY
(1 OF 2)

Year (A.D.)	Mass Magnetic Susceptibility (m ³ /kg)	% Total Organic Matter	% Calcite
1996	No Data	8.1	13.9
1994	6.536E-03	7.2	14.0
1993	4.270E-03	7.4	18.3
1992	No Data	7.3	16.2
1990	4.673E-03	8.1	15.7
1989	9.540E-03	7.8	15.7
1987	No Data	7.6	13.2
1986	6.076E-03	7.0	11.5
1985	5.744E-03	7.6	11.5
1983	No Data	7.2	11.1
1977	8.346E-03	7.0	12.6
1971	8.281E-03	7.2	10.4
1964	No Data	7.7	9.3
1958	8.817E-03	7.6	6.3
1952	9.751E-03	7.6	6.3
1946	No Data	7.8	5.9
1939	8.554E-03	7.6	3.9
1933	1.029E-02	7.4	4.7
1927	No Data	7.5	4.4
1921	1.056E-02	7.6	3.6
1914	1.203E-02	7.0	4.7
1908	No Data	7.4	5.7
1902	1.163E-02	7.7	5.2
1896	1.150E-02	7.4	4.9
1889	No Data	7.3	5.3
1883	1.096E-02	6.7	6.2
1877	1.157E-02	6.5	5.4
1871	No Data	6.9	5.6
1864	9.701E-03	6.5	7.0
1858	9.769E-03	6.7	7.6
1852	9.637E-03	7.0	4.8
1846	9.571E-03	7.5	5.2
1839	8.439E-03	7.8	3.6
1833	8.707E-03	7.6	4.3
1827	9.575E-03	8.3	3.0
1821	8.910E-03	8.9	0.7
1814	7.577E-03	8.9	0.0
1808	7.845E-03	9.2	0.0

**OWASCO LAKE SEDIMENTOLOGY
(2 OF 2)**

Year (A.D.)	Mass Magnetic Susceptibility (m ³ /kg)	% Total Organic Matter	% Calcite
1802	7.513E-03	9.8	0.0
1796	7.848E-03	9.7	0.0
1789	8.249E-03	10.3	0.0
1783	7.650E-03	9.7	0.0
1777	6.918E-03	9.0	0.0
1771	7.652E-03	10.0	0.0
1764	6.720E-03	10.2	0.0
1758	8.388E-03	9.1	0.0
1752	7.789E-03	9.4	0.0
1746	7.457E-03	9.3	0.0
1739	5.925E-03	9.6	0.0
1733	6.326E-03	9.6	0.0
1727	5.994E-03	9.9	0.0
1721	8.795E-03	9.9	0.0
1714	6.196E-03	10.1	0.0
1708	5.931E-03	9.6	0.0
1702	6.332E-03	10.0	0.0
1696	7.067E-03	10.2	0.0

SKANEATELES LAKE SEDIMENTOLOGY
(1 OF 2)

Year (A.D.)	Mass Magnetic Susceptibility (m ³ /kg)	% Total Organic Matter	% Calcite
1995	No Data	No Data	No Data
1991	No Data	7.8	1.7
1987	No Data	7.9	0
1984	No Data	7.6	0
1980	5.867E-03	7.5	0
1976	No Data	7.7	0
1972	6.267E-03	7.3	0
1967	6.800E-03	7.3	0
1961	7.467E-03	7.9	0
1955	No Data	7.7	0
1949	8.933E-03	7.7	0
1943	1.060E-02	8.0	0
1937	9.000E-03	7.9	0
1931	No Data	8.0	0
1925	7.400E-03	7.4	0
1920	7.267E-03	8.1	0
1914	8.867E-03	8.2	0
1908	7.200E-03	8.4	0
1902	7.667E-03	8.0	0
1896	8.600E-03	8.1	0
1890	6.533E-03	8.7	0
1884	7.400E-03	7.9	0
1878	6.933E-03	7.5	0
1872	6.800E-03	7.6	0
1867	6.067E-03	7.6	0
1861	7.733E-03	8.0	0
1855	6.400E-03	8.0	0
1849	5.733E-03	8.5	0
1843	4.867E-03	8.7	0
1837	5.267E-03	7.8	0
1831	4.667E-03	8.4	0
1825	4.467E-03	8.9	0
1820	6.000E-03	10.0	0
1814	4.267E-03	9.0	0
1808	5.133E-03	9.2	0
1802	4.800E-03	9.2	0
1796	5.267E-03	9.2	0
1790	4.600E-03	8.7	0

SKANEATELES LAKE SEDIMENTOLOGY
(2 OF 2)

Year (A.D.)	Mass Magnetic Susceptibility (m ³ /kg)	% Total Organic Matter	% Calcite
1784	4.000E-03	9.0	0
1778	4.933E-03	8.9	0
1773	3.733E-03	9.3	0
1767	4.733E-03	9.1	0
1761	3.733E-03	8.7	0
1755	4.200E-03	9.6	0
1749	3.133E-03	10.4	0
1743	3.133E-03	10.0	0
1737	3.600E-03	11.2	0
1731	3.000E-03	9.8	0
1725	3.800E-03	9.8	0
1720	3.867E-03	9.3	0
1714	3.733E-03	9.3	0
1708	3.400E-03	9.2	0
1702	3.133E-03	11.2	0
1696	3.800E-03	10.6	0
1690	3.400E-03	12.3	0
1684	4.467E-03	11.0	0
1678	4.867E-03	10.3	0
1673	2.760E-03	9.9	0
1667	1.771E-03	10.2	0
1661	1.422E-03	10.6	0
1655	1.218E-03	9.2	0
1649	6.769E-04	10.3	0
1643	8.400E-04	9.5	0
1637	5.059E-04	10.2	0
1631	5.053E-04	9.9	0
1626	3.905E-04	9.9	0
1620	4.348E-04	10.0	0
1614	3.120E-04	10.1	0
1608	3.778E-04	9.5	0
1602	3.034E-04	10.7	0
1596	2.968E-04	10.2	0
1590	2.727E-04	10.0	0
1584	2.800E-04	9.7	0

OTISCO LAKE SEDIMENTOLOGY
(1 OF 2)

Year (A.D.)	Mass Magnetic Susceptibility (m ³ /kg)	% Total Organic Matter	% Calcite
1996	No Data	10.4	14.5
1994	No Data	11.0	14.8
1993	3.651E-03	11.3	16.0
1991	No Data	No Data	No Data
1990	No Data	11.4	15.4
1988	3.218E-03	10.7	16.8
1987	4.635E-03	11.3	15.6
1985	No Data	11.5	15.6
1984	3.669E-03	11.2	16.4
1982	4.486E-03	11.1	16.2
1981	No Data	11.0	13.4
1979	5.320E-03	10.3	11.9
1978	5.070E-03	10.5	7.5
1976	No Data	10.7	10.6
1975	5.837E-03	10.7	8.3
1973	4.521E-03	10.8	7.0
1972	4.004E-03	10.6	8.5
1970	5.288E-03	10.8	7.6
1969	4.305E-03	10.8	8.3
1967	No Data	9.3	7.0
1966	6.405E-03	8.9	4.2
1964	6.022E-03	9.6	4.2
1963	No Data	9.5	2.6
1961	6.123E-03	9.7	3.4
1960	5.406E-03	9.7	0.0
1958	No Data	9.2	3.3
1956	6.307E-03	9.6	2.4
1954	5.590E-03	9.7	2.4
1952	5.941E-03	9.7	2.1
1950	6.758E-03	9.1	3.9
1948	No Data	No Data	No Data
1946	5.508E-03	8.7	4.4
1944	No Data	9.6	2.8
1942	7.208E-03	9.3	2.8
1940	8.759E-03	9.4	2.7
1938	8.309E-03	9.5	1.9
1936	8.259E-03	9.0	2.4
1935	No Data	9.5	2.6

OTISCO LAKE SEDIMENTOLOGY
(2 OF 2)

Year (A.D.)	Mass Magnetic Susceptibility (m ³ /kg)	% Total Organic Matter	% Calcite
1933	7.826E-03	10.1	2.0
1931	5.643E-03	10.1	2.0
1929	6.127E-03	10.0	2.6
1927	5.077E-03	10.6	2.0
1925	No Data	10.9	1.8
1923	6.378E-03	10.8	2.7
1921	7.261E-03	9.8	0.0
1919	5.945E-03	10.3	2.2
1917	6.229E-03	10.2	2.2
1915	7.446E-03	10.0	2.6
1913	5.929E-03	10.3	1.8
1911	7.013E-03	10.5	3.6
1909	6.430E-03	11.5	2.6
1907	6.047E-03	11.2	2.8
1905	5.663E-03	11.9	4.3
1903	5.347E-03	12.1	4.7
1901	5.031E-03	12.7	3.9
1899	5.781E-03	12.7	4.5
1897	4.665E-03	14.3	5.3
1895	4.881E-03	13.1	5.0
1893	2.059E-03	15.3	4.8
1891	1.964E-03	13.6	5.2
1889	1.422E-03	16.7	2.0
1887	1.132E-03	16.3	1.5
1886	1.146E-03	16.8	1.6

CAYUGA LAKE ^{210}Pb AND ^{137}Cs DATA

Depth (cm)	^{137}Cs (pCi/g)	$^{210}\text{Pb}_{\text{xs}}$ (dpm/g)	$^{210}\text{Pb}_{\text{xs}}$ error (+/-)
0.5	1	12.14	0.73
1.75	1.2	7.04	0.73
3.75	1.2	6.41	0.49
6	1.5	6.06	0.45
8	1.6	6.38	0.45
10	1.7	5.54	0.41
11.5	1.6	3.01	0.42
12.5	2	3.57	0.3
13.5	3	4.79	0.31
14.5	4	5.44	0.38
15.5	5.5	5.32	0.41
16.5	11.5	4.47	0.4
17.5	12	3.35	0.35
18.75	7.8	3.03	0.32
20.25	6	2.89	0.3
21.5	4	3.35	0.27
22.5	2.3	2.75	0.29
23.5	1.7	1.99	0.28
24.5	0	1.55	0.24
25.75	0	1.58	0.24
26.5	0	1.89	0.21
28.5	0	1.55	0.2
29.5	0	1.06	0.2

0cm – 18.75cm Interval Sediment Accumulation Rate = 0.53 cm/year

18.75cm-99.5cm Interval Sediment Accumulation Rate = 0.37 cm/year

SENECA LAKE ISOTOPE DATA

Depth (cm)	Year (A.D.)	$\delta^{13}\text{C}_{\text{calcite}}$ (‰)	$\delta^{18}\text{O}_{\text{calcite}}$ (‰)
1.5	1993	-0.83	-7.70
2.5	1989	-0.58	-7.58
3.5	1986	-0.61	-7.75
4.5	1982	-0.66	-7.08
5.5	1978	-0.31	-7.69
6.5	1974	-0.22	-7.75
7.5	1971	-0.06	-8.02
8.5	1967	0.03	-7.58
9.5	1963	-0.66	-8.02
10.5	1960	-0.09	-6.95

CAYUGA LAKE ISOTOPE DATA

Depth (cm)	Year (A.D.)	$\delta^{13}\text{C}_{\text{calcite}}$ (‰)	$\delta^{18}\text{O}_{\text{calcite}}$ (‰)
0.5	1996	-2.46	-9.22
1.75	1993	-2.45	-9.23
3.75	1989	-2.32	-8.78
6	1985	-2.25	-9.02
8	1981	-2.30	-9.33
10	1977	-2.36	-9.30
11.5	1974	-2.43	-8.90
12.5	1973	-2.33	-9.19
14.5	1969	-2.74	-9.65
15.5	1967	-2.13	-9.03
16.5	1965	-2.03	-9.00
17.5	1963	-2.39	-10.17
18.75	1961	-1.86	-9.10
20.25	1958	-1.89	-8.86
21.5	1955	-1.84	-8.97
22.5	1953	-1.83	-8.55
23.5	1951	-2.00	-9.13
24.5	1949	-1.73	-8.95
25.75	1946	-1.94	-9.16
28.5	1937	-1.96	-8.59
29.5	1935	-2.12	-7.87
30.5	1932	-2.37	-7.18
35.5	1917	-1.59	-7.86
38.25	1910	-1.70	-8.13

OWASCO LAKE ISOTOPE DATA

Depth (cm)	Year (A.D.)	$\delta^{13}\text{C}_{\text{calcite}}$ (‰)	$\delta^{18}\text{O}_{\text{calcite}}$ (‰)
0.5	1996	-4.64	-10.36
1.5	1994	-4.61	-9.33
2.5	1993	-4.38	-10.14
3.5	1992	-4.65	-9.55
4.5	1990	-4.73	-10.80
5.5	1989	-4.42	-10.08
6.5	1987	-4.09	-9.86
7.5	1986	-3.88	-9.73
8.5	1985	-4.10	-10.28
9.5	1983	-3.86	-9.70
10.5	1977	-4.13	-10.16
11.5	1971	-3.47	-9.83
12.5	1964	-3.35	-9.56
13.5	1958	-4.02	-10.02
14.5	1952	-3.55	-9.51
15.5	1946	-3.16	-9.17
17.5	1933	-3.25	-8.60
18.5	1927	-3.45	-8.96
19.5	1921	-4.14	-7.86
20.5	1914	-3.24	-8.22
22.5	1902	-3.59	-9.16
23.5	1896	-3.69	-9.04
24.5	1889	-3.28	-8.73
25.5	1883	-3.41	-8.30
27.5	1871	-4.54	-10.88
29.5	1858	-5.20	-10.82
30.5	1852	-4.38	-10.99
31.5	1846	-4.02	-8.46
33.5	1833	-5.08	-11.05

OTISCO LAKE ISOTOPE DATA
(1 OF 2)

Depth (cm)	Year (A.D.)	$\delta^{13}\text{C}_{\text{calcite}}$ (‰)	$\delta^{18}\text{O}_{\text{calcite}}$ (‰)
0.5	1996	-4.80	-10.30
1.5	1994	-4.79	-10.27
2.5	1993	-4.94	-10.36
3.5	1991	-4.77	-10.31
4.5	1990	-4.75	-10.49
5.5	1988	-4.77	-10.46
6.5	1987	-4.75	-10.01
7.5	1985	-4.91	-10.36
8.5	1984	-5.20	-10.09
9.5	1982	-4.83	-10.31
10.5	1981	-4.75	-10.15
11.5	1979	-4.82	-10.33
12.5	1978	-4.97	-10.44
13.5	1976	-4.69	-9.71
14.5	1975	-4.86	-10.32
15.5	1973	-4.61	-10.06
16.5	1972	-4.46	-9.18
17.5	1970	-4.54	-9.34
18.5	1969	-4.69	-9.82
19.5	1967	-4.74	-8.98
21.5	1964	-4.37	-8.71
22.5	1963	-4.73	-8.62
23.5	1961	-4.12	-7.85
24.5	1960	-4.49	-8.40
25.5	1958	-5.79	-8.73
26.5	1956	-4.74	-8.22
28.5	1952	-4.61	-8.40
29.5	1950	-4.51	-9.43
30.5	1948	-4.54	-8.88
31.5	1946	-4.50	-9.52
32.5	1944	-4.64	-9.40
33.5	1942	-4.77	-9.02
34.5	1940	-4.66	-9.26
35.5	1938	-5.09	-8.76
36.5	1936	-4.89	-8.51
37.5	1935	-5.33	-9.36
38.5	1933	-4.76	-8.97
39.5	1931	-5.09	-9.07

**OTISCO LAKE ISOTOPE DATA
(2 OF 2)**

Depth (cm)	Year (A.D.)	$\delta^{13}\text{C}_{\text{calcite}}$ (‰)	$\delta^{18}\text{O}_{\text{calcite}}$ (‰)
40.5	1929	-4.97	-9.31
41.5	1927	-5.06	-9.61
43.5	1923	-4.90	-8.91
44.5	1921	-4.96	-9.15
45.5	1919	-4.70	-8.55
46.5	1917	-4.84	-8.74
47.5	1915	-4.85	-8.67
49.5	1911	-4.62	-9.82
50.5	1909	-4.73	-10.11
51.5	1907	-4.57	-10.62
52.5	1905	-4.64	-10.61
53.5	1903	-4.39	-10.57
54.5	1901	-4.48	-10.71
55.5	1899	-4.49	-10.73
56.5	1897	-4.54	-10.88
57.5	1895	-4.51	-10.85
58.5	1893	-4.57	-10.74
59.5	1891	-4.70	-10.47

**IMPROVED LAND (km²) IN THE CAYUGA LAKE WATERSHED
(From USDA, 1835-1992)**

Year (A.D.)	Improved Land (km ²)
1835	723
1850	1103
1860	1192
1870	1295
1880	1396
1890	1321
1900	1342
1910	1282
1920	1147
1924	1178
1929	1199
1934	1185
1944	1144
1949	1092
1954	883
1959	788
1964	720
1969	707
1974	682
1978	697
1982	679
1987	656
1992	584

HISTORICAL ATMOSPHERIC CARBON DIOXIDE CONCENTRATIONS
(From Boden et al., 1994; Etheridge et al., 1994, Keeling and Worf, 1998)

[CO ₂] PPMV	Year (A.D.)
363	1996
361	1995
359	1994
357	1993
356	1992
355	1991
354	1990
353	1989
351	1988
349	1987
347	1986
346	1985
344	1984
343	1983
341	1982
340	1981
339	1980
337	1979
335	1978
334	1977
332	1976
331	1975
330	1974
330	1973
327	1972
326	1971
326	1970
324	1969
323	1968
322	1967
321	1966
320	1965
319	1964
319	1963
318	1962
317	1961
317	1960
316	1959
314	1954
312	1953
310	1948
310	1944

[CO ₂] PPMV	Year (A.D.)
311	1940
310	1939
311	1938
308	1936
309	1934
308	1932
305	1929
305	1926
305	1924
301	1915
301	1912
299	1905
297	1899
295	1898
295	1892
295	1891
294	1886
292	1882
289	1877
287	1869
287	1861
285	1854
285	1850
286	1845
283	1840
285	1832
285	1825
284	1796
282	1794
280	1777
277	1760
277	1749
277	1747

**UNITED STATES EMISSIONS OF NITROGEN OXIDE AND SULFUR DIOXIDE
(From USEPA, 1995)**

NO_x	Year (A.D.)	SO₂	Year (A.D.)
2.37	1900	9.06	1900
3.01	1905	12.66	1905
3.72	1910	15.67	1910
4.24	1915	18.41	1915
4.68	1920	19.18	1920
6.62	1925	21.11	1925
7.27	1930	19.15	1930
6.02	1935	15.40	1935
6.69	1940	18.10	1940
8.47	1945	23.93	1945
9.16	1950	20.28	1950
10.58	1955	19.46	1955
12.83	1960	20.16	1960
15.81	1965	23.93	1965
18.71	1970	28.27	1970
19.86	1975	25.41	1975
21.12	1980	23.50	1980
21.02	1984	21.29	1984
20.74	1985	21.07	1985
20.27	1986	20.36	1986
20.32	1987	20.14	1987
21.43	1988	20.55	1988
21.07	1989	20.67	1989
20.90	1990	20.35	1990
20.57	1991	20.02	1991
20.73	1992	19.81	1992
21.12	1993	19.52	1993
21.42	1994	19.16	1994
19.76	1995	16.62	1995

***All emissions are given in millions of metric tons**

EPILIMNETIC CHEMISTRY DATA

1998 (A.D.)

LAKE	Ca ²⁺	Mg ²⁺	Na ⁺	Cl ⁻	SO ₄ ²⁻	*CO ₃ ²⁻	HCO ₃ ⁻	TP	*Ca ²⁺ activity	*CO ₃ ²⁻ activity	Ω value
CONESUS	34.0	10.7	17.1	34	21.5	0.65	130.5	0.03	6.06E-04	8.13E-6	1.4
HEMLOCK	28.5	5.6	12.6	20.3	47.7	0.38	78.0	0.01	5.12E-04	4.91E-6	0.7
HONEOYE	28.5	7.0	6.5	12.1	15.5	0.41	84.2	0.02	5.39E-04	5.33E-6	0.8
CANANDAIGUA	39.5	10.3	11.6	22.4	26.6	0.67	135.3	0.01	6.99E-04	8.41E-6	1.7
KEUKA	32.5	8.5	9.4	18.2	24.6	0.50	102.4	0.01	5.93E-04	6.42E-6	1.1
SENECA	42.0	9.4	70.1	130.4	38.9	0.63	119.5	0.01	6.94E-04	7.30E-6	1.4
CAYUGA	45.5	9.9	22.2	41.2	34.1	0.65	128.0	0.01	7.86E-04	7.90E-6	1.8
OWASCO	41.0	7.9	9.0	18.1	17.0	0.67	135.2	0.01	7.40E-04	8.43E-6	1.8
SKANEATELES	41.5	7.0	5.5	11.7	18.3	0.60	121.9	0.00	7.56E-04	7.62E-6	1.6
OTISCO	41.5	9.8	12.7	25.9	18.6	0.67	135.3	0.01	7.40E-04	8.40E-6	1.8

1973 (A.D.)

LAKE	Ca ²⁺	Mg ²⁺	Na ⁺	Cl ⁻	SO ₄ ²⁻	*CO ₃ ²⁻	HCO ₃ ⁻	TP	*Ca ²⁺ activity	*CO ₃ ²⁻ activity	Ω value
CONESUS	38.1	15.8	9.2	31.9	28.8	0.64	128.1	0.03	6.67E-4	7.92E-6	1.5
HEMLOCK	26.1	7.3	6.9	14.2	24	0.29	61.0	0.01	4.92E-4	3.86E-6	0.5
HONEOYE	22	7.3	2.3	7.1	19.2	0.32	67.1	0.02	4.24E-4	4.27E-6	0.5
CANANDAIGUA	40.1	12.2	6.9	14.2	28.8	0.61	122.0	0.02	7.12E-4	7.58E-6	1.5
KEUKA	30.1	12.2	4.6	10.6	28.8	0.45	91.5	0.01	5.49E-4	5.74E-6	0.9
SENECA	42.1	13.4	98.9	177.3	38.4	0.52	97.6	0.01	6.82E-4	5.91E-6	1.1
CAYUGA	46.1	12.2	43.7	81.5	38.4	0.60	115.9	0.02	7.76E-4	7.09E-6	1.6
OWASCO	44.1	8.5	4.6	10.6	19.2	0.63	128.1	0.01	7.96E-4	7.98E-6	1.8
SKANEATELES	36.1	9.7	4.6	7.1	19.2	0.54	109.8	0.01	6.62E-4	6.88E-6	1.3
OTISCO	48.1	12.2	4.6	10.6	19.2	0.73	142.3	0.01	8.52E-4	9.05E-6	2.2

NOTES: Elemental concentrations are given in mg/L

*Calculated by PCWATEQ

Epilimnetic Total Phosphorus Data ($\mu\text{g/L}$)

	1999 A.D.	1972 A.D.
Conesus	22.2	21
Hemlock	10	9.9
Canadice	8.3	10.2
Honeoye	24.2	19
Canandaigua	6.2	11.4
Keuka	8	13.6
Seneca	9.8	13.1
Cayuga	9.7	18
Owasco	12	12
Skaneateles	4	6.1
Otisco	13	9.6

**Percent Agricultural Activity in Finger Lake Drainage Basins
Versus Calcium Concentrations in Surface Waters
(from Bloomfield, 1978)**

	Calcium Concentration (mg/L)	% Agricultural Activity
Conesus	39	48
Hemlock	24	35
Canadice	12	18
Honeoye	22	6
Canandaigua	42	62
Keuka	27	48
Seneca	41	56
Cayuga	44	64
Owasco	43	62
Skaneateles	35	59
Otisco	47	64