

Table 4.1 Ranked Seasonal FDD Accumulation on BOM Dates at Duluth, MN.

Rank	November		December		January		February		March		April		May		Rank
	year	FDD	year	FDD	year	FDD	year	FDD	year	FDD	year	FDD	year	FDD	
1	1926	56.	1986	413.	1986	1311.	1977	2174.	1979	2695.	1904	3096.	1904	3029.	1
2	1918	52.	1960	400.	1977	1179.	1920	2066.	1904	2684.	1965	3022.	1979	2900.	2
3	1906	41.	1997	365.	1920	1166.	1979	1939.	1936	2669.	1912	3010.	1936	2876.	3
4	1914	40.	1996	355.	1990	1139.	1996	1936.	1920	2633.	1979	2974.	1917	2867.	4
5	1997	32.	1920	347.	1928	1073.	1986	1929.	1917	2632.	1936	2918.	1965	2844.	5
6	1977	29.	1912	338.	1956	1064.	1959	1928.	1912	2594.	1917	2903.	1950	2831.	6
7	1920	29.	1952	335.	2001	1061.	1912	1919.	1977	2592.	1951	2853.	1920	2828.	7
8	1985	27.	1992	335.	1951	1058.	1918	1895.	1959	2556.	1996	2852.	1972	2813.	8
9	1937	25.	1956	333.	1925	1048.	1951	1888.	1965	2520.	1972	2849.	1912	2810.	9
10	1989	23.	1977	326.	1984	1047.	1997	1819.	1986	2494.	1920	2817.	1996	2775.	10
11	1924	23.	1951	308.	1997	1009.	1984	1815.	1918	2491.	1959	2763.	1951	2704.	11
12	1912	20.	1927	295.	1959	1003.	1994	1804.	1994	2486.	1950	2732.	1956	2623.	12
13	1992	20.	1948	293.	1934	997.	1930	1791.	1996	2482.	1899	2714.	1959	2594.	13
14	1907	18.	1930	293.	1952	988.	1965	1791.	1951	2423.	1956	2675.	1982	2533.	14
15	1952	16.	1922	286.	1973	979.	1904	1789.	1972	2410.	1982	2644.	1899	2477.	15
16	1934	16.	1979	283.	1927	974.	1917	1786.	1978	2306.	1977	2608.	1923	2443.	16
17	1994	16.	1937	277.	1996	969.	1952	1748.	1982	2297.	1923	2608.	1962	2443.	17
18	1943	13.	1990	271.	1979	963.	1971	1746.	1997	2295.	1971	2606.	1907	2432.	18
19	1955	11.	1934	268.	1965	958.	1925	1741.	1971	2290.	1957	2596.	1997	2428.	19
20	1933	11.	1936	263.	1904	932.	1927	1730.	1956	2282.	1986	2595.	1971	2417.	20
21	1927	11.	1933	252.	1918	925.	1928	1730.	1957	2281.	1994	2567.	1928	2414.	21
22	1909	9.	1928	250.	1917	893.	1978	1705.	1962	2270.	1970	2551.	1957	2383.	22
23	1987	8.	1994	248.	1978	869.	1982	1697.	1950	2245.	1997	2540.	1918	2381.	23
24	1942	7.	1911	245.	1933	869.	1957	1697.	1963	2241.	1974	2522.	1970	2351.	24
25	1931	7.	1987	243.	1930	864.	1950	1694.	1928	2237.	1916	2516.	1974	2345.	25
26	1950	5.	1983	241.	1911	841.	1936	1688.	1922	2219.	1918	2509.	1916	2342.	26
27	1935	5.	1904	238.	1915	833.	1911	1679.	1967	2216.	1962	2507.	1934	2340.	27
28	1929	5.	1941	229.	1922	815.	1956	1674.	1970	2212.	1978	2506.	1937	2336.	28
29	1919	4.	1898	229.	1976	803.	1972	1669.	1925	2210.	1934	2504.	1994	2331.	29
30	1973	4.	1978	227.	1948	799.	1976	1651.	1948	2201.	1913	2502.	1978	2315.	30
31	1990	4.	1998	226.	1992	799.	1937	1629.	1927	2194.	1937	2489.	1986	2293.	31
32	1940	4.	1957	225.	1898	781.	1973	1613.	1899	2191.	1948	2475.	1967	2293.	32
33	1913	2.	1965	223.	1946	779.	1907	1597.	1929	2189.	1984	2471.	1943	2275.	33
34	1954	0.	1939	218.	1936	778.	1948	1586.	1937	2189.	1943	2459.	1989	2266.	34
35	1956	0.	1901	216.	1967	778.	1962	1582.	1907	2171.	1928	2453.	1922	2254.	35
36	1957	0.	1973	209.	1971	770.	1974	1579.	1974	2167.	1952	2453.	1913	2252.	36
37	1958	0.	1944	205.	1926	769.	1990	1556.	1930	2162.	1967	2441.	1975	2241.	37
38	1959	0.	1967	203.	1899	761.	1970	1552.	2001	2157.	1989	2431.	1977	2237.	38
39	1960	0.	1959	202.	1974	760.	1985	1552.	1934	2147.	1922	2405.	1948	2205.	39
40	1961	0.	1899	187.	1938	756.	1966	1552.	1973	2126.	1907	2399.	1966	2176.	40
41	1962	0.	2001	187.	1969	745.	1963	1543.	1952	2115.	1925	2396.	1939	2162.	41
42	1963	0.	1938	187.	1947	743.	1915	1541.	1911	2111.	1949	2394.	1984	2158.	42
43	1964	0.	1947	182.	1957	742.	1943	1541.	1916	2111.	1963	2383.	1933	2137.	43
44	1965	0.	1966	182.	1985	741.	1922	1537.	1905	2108.	1930	2383.	1960	2133.	44
45	1966	0.	1970	182.	1981	740.	1935	1517.	1966	2104.	2001	2377.	1930	2122.	45
46	1967	0.	1976	176.	1937	740.	1991	1516.	1984	2080.	1960	2329.	1963	2111.	46
47	1968	0.	1917	173.	1964	734.	1934	1512.	1985	2075.	1969	2327.	1905	2108.	47
48	1969	0.	1968	173.	1994	726.	1969	1505.	1989	2063.	1929	2299.	2001	2106.	48
49	1970	0.	1926	171.	1950	724.	2001	1501.	1913	2036.	1905	2293.	1949	2099.	49
50	1971	0.	1971	169.	1939	722.	1929	1485.	1923	2036.	1976	2290.	1925	2097.	50
51	1972	0.	1925	169.	1943	722.	1938	1480.	1968	2032.	1933	2272.	1929	2093.	51
52	1974	0.	1958	166.	1991	713.	1899	1471.	1949	2029.	1939	2255.	1926	2090.	52
53	1975	0.	1931	153.	1949	709.	1954	1460.	1946	2027.	1966	2255.	1952	2083.	53
54	1976	0.	1946	153.	1989	703.	1905	1460.	1988	2026.	1988	2255.	1969	2070.	54
55	1978	0.	1949	148.	1912	702.	1967	1424.	1943	2025.	1926	2239.	1927	2041.	55
56	1979	0.	1907	146.	1923	698.	1946	1417.	1933	2023.	1955	2237.	1911	2041.	56
57	1980	0.	1972	144.	1962	693.	1926	1406.	1969	1998.	1927	2237.	1988	1977.	57
58	1981	0.	1993	143.	1935	686.	1961	1402.	1990	1997.	1911	2225.	1947	1976.	58
59	1982	0.	1985	142.	1972	682.	1916	1388.	1976	1978.	1975	2209.	1976	1973.	59
60	1983	0.	1916	140.	1910	680.	1968	1373.	1939	1964.	1990	2144.	1935	1955.	60
61	1984	0.	1921	139.	1907	680.	1981	1366.	1910	1921.	1973	2131.	1909	1942.	61
62	1986	0.	1975	135.	1993	673.	1949	1354.	1960	1868.	1985	2125.	1973	1942.	62
63	1988	0.	1989	135.	1987	664.	1960	1330.	1947	1865.	1980	2115.	1954	1922.	63
64	1991	0.	1953	133.	1960	662.	1988	1318.	1938	1865.	1947	2099.	1990	1890.	64
65	1993	0.	1915	131.	1968	661.	1933	1316.	1935	1861.	1915	2072.	1964	1838.	65
66	1995	0.	1974	128.	1961	655.	1913	1298.	1915	1859.	1935	2066.	1980	1834.	66

Table 4.1 cont. Ranked Seasonal FDD Accumulation on BOM Dates at Duluth, MN.

Rank	November		December		January		February		March		April		May		Rank
	year	FDD	year	FDD	year	FDD	year	FDD	year	FDD	year	FDD	year	FDD	
67	1996	0.	1969	121.	1905	639.	1923	1289.	1991	1850.	1954	2063.	1955	1829.	67
68	1998	0.	1950	115.	1944	637.	1945	1278.	1926	1849.	1964	2039.	1985	1810.	68
69	1999	0.	1943	112.	1902	637.	1992	1274.	1981	1804.	1968	2032.	1968	1780.	69
70	2000	0.	1984	111.	1941	635.	1947	1265.	1901	1784.	1991	2020.	1953	1773.	70
71	2001	0.	1981	108.	1970	634.	1989	1262.	1975	1780.	1901	2009.	1914	1755.	71
72	2002	0.	1962	101.	1983	626.	1910	1258.	1945	1764.	1909	1946.	1901	1746.	72
73	1898	0.	1988	101.	1958	614.	1993	1250.	1898	1760.	1941	1940.	1961	1730.	73
74	1899	0.	1902	101.	1982	605.	1939	1240.	1955	1755.	1906	1933.	1924	1715.	74
75	1900	0.	1991	97.	1901	605.	1924	1231.	1961	1744.	1981	1921.	1993	1709.	75
76	1901	0.	1905	92.	1954	590.	1975	1220.	1980	1735.	1946	1910.	1981	1706.	76
77	1902	0.	1906	90.	1945	583.	1941	1210.	1993	1727.	1993	1890.	1991	1688.	77
78	1903	0.	1980	88.	1963	578.	1983	1208.	1909	1723.	1900	1885.	1915	1667.	78
79	1904	0.	1908	86.	1931	558.	1964	1204.	1958	1723.	1958	1883.	1938	1634.	79
80	1905	0.	1954	83.	1916	554.	1909	1193.	1941	1703.	1953	1858.	1944	1627.	80
81	1908	0.	1995	80.	1921	533.	1901	1193.	1954	1692.	1924	1854.	1983	1620.	81
82	1910	0.	1910	72.	1903	531.	1898	1183.	1964	1658.	1938	1843.	1958	1607.	82
83	1911	0.	1919	72.	1975	524.	1987	1177.	1953	1649.	1961	1829.	1992	1598.	83
84	1915	0.	1923	72.	1966	520.	1903	1145.	1924	1647.	1914	1805.	1906	1595.	84
85	1916	0.	1982	70.	1998	520.	1955	1143.	1903	1640.	1898	1802.	1946	1588.	85
86	1917	0.	1932	70.	1909	515.	1999	1141.	1992	1575.	1944	1784.	1941	1580.	86
87	1921	0.	1918	68.	1913	500.	1958	1120.	1995	1563.	1992	1765.	1945	1555.	87
88	1922	0.	1955	63.	1999	475.	1980	1114.	1900	1555.	1910	1751.	1898	1553.	88
89	1923	0.	1913	63.	1988	474.	1953	1105.	1914	1535.	1908	1741.	1995	1544.	89
90	1925	0.	1945	58.	1908	472.	1902	1096.	1906	1517.	1983	1714.	1908	1537.	90
91	1928	0.	1929	52.	1953	468.	2000	1065.	1983	1514.	1903	1694.	1940	1519.	91
92	1930	0.	1942	52.	1955	457.	1998	1020.	1902	1489.	1945	1681.	1900	1505.	92
93	1932	0.	1961	47.	1906	457.	1921	1004.	1944	1463.	1940	1672.	1932	1487.	93
94	1936	0.	1964	41.	1995	431.	1908	1004.	1908	1463.	1932	1656.	1910	1480.	94
95	1938	0.	1903	40.	1929	412.	1995	973.	1999	1437.	1995	1641.	1903	1453.	95
96	1939	0.	2002	36.	2000	402.	1944	954.	1987	1410.	1921	1595.	1921	1330.	96
97	1941	0.	1924	27.	1900	401.	1931	938.	1921	1370.	1999	1551.	1919	1310.	97
98	1944	0.	1935	25.	1980	391.	1940	931.	2000	1353.	1919	1526.	2002	1296.	98
99	1945	0.	1909	16.	1942	349.	1906	929.	1940	1318.	1902	1501.	1902	1285.	99
100	1946	0.	2000	14.	2002	348.	1900	824.	1919	1282.	2002	1480.	1999	1236.	100
101	1947	0.	1999	7.	1919	331.	1942	815.	1942	1262.	1987	1422.	2000	1094.	101
102	1948	0.	1914	0.	1924	275.	2002	783.	1932	1199.	2000	1288.	1987	978.	102
103	1949	0.	1940	0.	1932	236.	1919	774.	1931	1102.	1998	1287.	1931	941.	103
104	1951	0.	1963	0.	1914	198.	1914	715.	1998	1094.	1942	1274.	1942	898.	104
105	1953	0.	1900	0.	1940	189.	1932	686.	2002	1081.	1931	1242.	1998	878.	105

Severity Index	December		January		February		March		April		May	
Upper Bound	year	FDD	year	FDD	year	FDD	year	FDD	year	FDD	year	FDD
Above Normal	1912	338.	1956	1064.	1959	1928.	1912	2594.	1917	2903.	1950	2831.
Normal	1928	250.	1917	893.	1978	1705.	1962	2270.	1970	2551.	1957	2383.
Below Normal	1982	70.	1998	520.	1955	1143.	1903	1640.	1898	1802.	1946	1588.
Mild	1999	7.	1919	331.	1942	815.	1942	1262.	1987	1422.	2000	1094.

Table 4.2 Ranked Seasonal FDD Accumulation on BOM Dates at Sault Ste. Marie, MI.

Rank	November		December		January		February		March		April		May		Rank
	year	FDD	year	FDD	year	FDD	year	FDD	year	FDD	year	FDD	year	FDD	
1	1926	20.	1934	265.	1990	921.	1977	1651.	1918	2282.	1904	2599.	1904	2522.	1
2	1914	14.	1937	230.	1977	853.	1918	1629.	1904	2279.	1918	2484.	1934	2408.	2
3	1907	11.	1996	205.	1934	785.	1920	1535.	1920	2153.	1934	2466.	1923	2374.	3
4	1981	9.	1960	187.	1959	743.	1984	1475.	1977	2147.	1912	2430.	1920	2335.	4
5	1997	9.	1904	175.	1918	740.	1904	1422.	1994	2058.	1920	2399.	1918	2318.	5
6	1994	7.	1977	166.	1996	707.	1981	1420.	1979	2054.	1923	2322.	1912	2313.	6
7	1909	5.	1990	164.	1984	707.	1994	1408.	1934	2018.	1917	2322.	1996	2271.	7
8	1912	5.	1930	164.	1981	700.	1959	1388.	1959	2011.	1959	2302.	1917	2266.	8
9	1940	5.	1952	160.	1920	688.	1996	1386.	1917	1987.	1996	2294.	1959	2182.	9
10	1924	5.	1979	148.	1986	667.	1979	1301.	1912	1976.	1899	2279.	1982	2138.	10
11	1906	4.	1948	144.	1904	644.	1912	1298.	1963	1958.	1977	2254.	1994	2105.	11
12	1955	4.	1912	139.	2001	639.	1927	1276.	1996	1932.	1994	2247.	1905	2088.	12
13	1918	4.	1957	137.	1930	637.	1930	1269.	1905	1881.	1963	2237.	1899	2086.	13
14	1950	4.	1898	133.	1925	628.	1925	1267.	1936	1859.	1905	2207.	1907	2074.	14
15	1933	2.	1956	124.	1927	616.	1986	1263.	1982	1807.	1979	2207.	1979	2057.	15
16	1919	0.	1927	122.	1905	607.	1905	1242.	1981	1796.	1970	2137.	1936	2045.	16
17	1920	0.	1987	117.	1952	592.	1957	1242.	1970	1769.	1982	2129.	1943	2043.	17
18	1921	0.	1965	115.	1956	585.	1963	1231.	1907	1762.	1971	2110.	1977	2014.	18
19	1922	0.	1933	115.	1979	585.	1982	1224.	1923	1757.	1943	2093.	1963	2012.	19
20	1923	0.	1950	112.	1965	565.	1945	1215.	1899	1750.	1978	2088.	1978	1994.	20
21	1925	0.	1968	110.	1911	562.	1971	1215.	1971	1746.	1936	2065.	1971	1994.	21
22	1927	0.	1901	110.	1946	544.	1948	1199.	1948	1728.	1984	2041.	1926	1933.	22
23	1928	0.	1997	107.	1898	540.	1965	1184.	1978	1728.	1948	2041.	1970	1928.	23
24	1929	0.	1920	106.	1943	538.	1990	1184.	1986	1726.	1965	2023.	1950	1917.	24
25	1930	0.	1978	106.	1971	518.	1934	1183.	1927	1726.	1907	1980.	1972	1913.	25
26	1931	0.	1981	104.	1917	518.	1917	1181.	1965	1721.	1930	1978.	1965	1904.	26
27	1932	0.	1941	103.	1957	511.	1943	1181.	1925	1719.	1972	1969.	1928	1865.	27
28	1934	0.	1959	101.	1964	508.	1970	1157.	1984	1717.	1925	1949.	1930	1816.	28
29	1935	0.	1931	101.	1948	508.	1961	1148.	1962	1710.	1981	1944.	1948	1800.	29
30	1936	0.	1986	99.	1951	500.	1978	1143.	1930	1708.	1967	1910.	1967	1791.	30
31	1937	0.	1922	97.	1944	499.	1976	1132.	1957	1669.	1986	1901.	1939	1753.	31
32	1938	0.	1917	95.	1969	493.	1911	1116.	1968	1663.	1974	1899.	1956	1751.	32
33	1939	0.	1918	92.	1915	491.	1923	1107.	1945	1642.	1916	1883.	1981	1724.	33
34	1941	0.	1975	86.	1961	488.	1907	1105.	1943	1618.	1957	1883.	1974	1723.	34
35	1942	0.	1939	86.	1978	486.	1899	1084.	1922	1613.	1928	1881.	1916	1714.	35
36	1943	0.	1915	86.	1936	477.	1938	1073.	1946	1595.	1926	1879.	1957	1690.	36
37	1944	0.	1944	86.	1907	466.	1936	1069.	1967	1586.	1950	1845.	1962	1670.	37
38	1945	0.	1976	85.	1970	466.	1956	1067.	1974	1584.	1962	1845.	1984	1669.	38
39	1946	0.	1994	84.	1937	466.	1922	1062.	1990	1572.	1956	1834.	1922	1665.	39
40	1947	0.	1970	81.	1963	464.	1935	1058.	1935	1571.	1911	1831.	1925	1661.	40
41	1948	0.	1951	81.	1976	463.	1985	1058.	1972	1564.	1968	1829.	1911	1651.	41
42	1949	0.	1926	79.	1923	461.	1962	1049.	1985	1548.	1922	1823.	1947	1622.	42
43	1951	0.	1902	79.	1973	461.	1968	1048.	1928	1544.	1939	1816.	1908	1618.	43
44	1952	0.	1946	76.	1902	459.	1951	1046.	1911	1535.	1913	1809.	1914	1606.	44
45	1953	0.	1972	74.	1928	455.	1952	1042.	1976	1516.	1901	1807.	1927	1606.	45
46	1954	0.	1928	70.	1899	452.	1946	1040.	1961	1510.	1927	1804.	1913	1586.	46
47	1956	0.	1969	68.	1938	452.	1898	1033.	1929	1499.	1976	1798.	1989	1580.	47
48	1957	0.	1905	68.	1967	450.	1915	1031.	1938	1498.	1900	1775.	1976	1559.	48
49	1958	0.	1995	67.	1945	446.	1997	1021.	1910	1492.	1935	1773.	1986	1557.	49
50	1959	0.	1906	65.	1922	445.	1969	1008.	1901	1480.	1989	1749.	1975	1546.	50
51	1960	0.	1971	65.	1926	443.	2001	991.	1956	1467.	1985	1724.	1968	1546.	51
52	1961	0.	1947	65.	1947	439.	1928	959.	1951	1462.	1908	1723.	1935	1544.	52
53	1962	0.	1925	65.	1903	428.	1974	956.	2001	1459.	1990	1722.	1960	1526.	53
54	1963	0.	1923	63.	1935	425.	1972	947.	1950	1435.	1960	1694.	1909	1523.	54
55	1964	0.	2001	58.	1994	418.	1950	929.	1913	1433.	1997	1680.	1997	1522.	55
56	1965	0.	1993	58.	1989	415.	1926	929.	1898	1433.	1961	1678.	1961	1508.	56
57	1966	0.	1982	56.	1985	414.	1902	920.	1926	1429.	1969	1670.	1985	1500.	57
58	1967	0.	1899	54.	1950	414.	1903	913.	1908	1426.	1980	1667.	1940	1496.	58
59	1968	0.	1988	54.	1968	410.	1991	913.	1939	1413.	1914	1663.	1969	1492.	59
60	1969	0.	1911	52.	1931	410.	1954	911.	1924	1409.	1952	1663.	1901	1483.	60
61	1970	0.	1984	51.	1960	407.	1941	911.	1997	1406.	1947	1656.	1944	1454.	61
62	1971	0.	1983	50.	1974	405.	1967	905.	1952	1400.	1951	1654.	1938	1445.	62
63	1972	0.	1936	50.	1933	403.	1947	896.	1947	1393.	2001	1650.	1924	1445.	63
64	1973	0.	1953	49.	1901	398.	1937	891.	1969	1391.	1938	1649.	1990	1439.	64
65	1974	0.	1945	49.	1900	389.	1901	887.	1916	1390.	1940	1638.	1900	1436.	65
66	1975	0.	1943	49.	1997	387.	1929	880.	1988	1386.	1988	1626.	1937	1418.	66

Table 4.2 cont. Ranked Seasonal FDD Accumulation on BOM Dates at Sault Ste. Marie, MI.

Rank	November		December		January		February		March		April		May		Rank
	year	FDD	year	FDD	year	FDD	year	FDD	year	FDD	year	FDD	year	FDD	
67	1976	0.	1958	47.	1972	383.	1910	869.	1989	1382.	1929	1618.	1964	1409.	67
68	1977	0.	1938	47.	1962	380.	1966	869.	1980	1372.	1937	1618.	1992	1408.	68
69	1978	0.	1921	47.	1982	376.	1964	862.	1915	1364.	1955	1616.	1951	1406.	69
70	1979	0.	1967	45.	1910	369.	1973	859.	1914	1361.	1964	1589.	1980	1395.	70
71	1980	0.	1973	45.	1941	362.	1999	853.	1973	1346.	1941	1588.	1988	1390.	71
72	1982	0.	1998	45.	1908	356.	1908	844.	1958	1343.	1915	1586.	1929	1381.	72
73	1983	0.	1985	44.	1992	345.	1940	842.	1903	1337.	1924	1579.	2001	1362.	73
74	1984	0.	1903	41.	1955	338.	1992	836.	1900	1336.	1945	1575.	1952	1359.	74
75	1985	0.	1913	41.	1993	333.	1960	835.	1993	1332.	1906	1570.	1945	1346.	75
76	1986	0.	1966	41.	1916	331.	1931	833.	1902	1330.	1944	1564.	1906	1325.	76
77	1987	0.	1908	40.	1939	329.	1924	833.	1942	1312.	1975	1559.	1993	1323.	77
78	1988	0.	1942	32.	1975	329.	1942	830.	1964	1298.	1909	1553.	1946	1321.	78
79	1989	0.	1929	31.	1909	326.	1939	824.	1941	1292.	1910	1550.	1898	1309.	79
80	1990	0.	1980	29.	1999	313.	1975	821.	1937	1283.	1992	1542.	1954	1305.	80
81	1991	0.	1992	29.	1991	312.	1955	812.	1909	1269.	1898	1523.	1910	1253.	81
82	1992	0.	1919	29.	1912	311.	1988	806.	1960	1264.	1993	1499.	1955	1246.	82
83	1993	0.	1989	23.	1958	304.	1909	805.	1955	1253.	1946	1492.	1933	1231.	83
84	1995	0.	1910	22.	1987	302.	1980	803.	1940	1251.	1954	1447.	1915	1224.	84
85	1996	0.	1962	22.	1949	292.	1993	802.	1991	1248.	1942	1431.	1941	1184.	85
86	1998	0.	1940	20.	1942	288.	1989	798.	1966	1233.	1933	1420.	1966	1172.	86
87	1999	0.	1964	20.	1983	284.	1916	797.	1992	1228.	1991	1397.	1903	1143.	87
88	2000	0.	1932	16.	1906	284.	2000	796.	1975	1217.	1949	1372.	1949	1130.	88
89	2001	0.	2002	15.	1913	283.	1983	785.	1944	1195.	1958	1370.	1931	1109.	89
90	2002	0.	1961	14.	1980	277.	1958	767.	1933	1174.	1903	1364.	1902	1102.	90
91	1898	0.	1907	13.	1954	266.	1900	761.	1931	1148.	1966	1346.	1958	1089.	91
92	1899	0.	1949	13.	1921	254.	1944	756.	1954	1127.	1902	1328.	1983	1084.	92
93	1900	0.	1954	13.	1988	245.	1913	725.	1906	1121.	1931	1303.	1942	1076.	93
94	1901	0.	1916	7.	1919	236.	1949	716.	1999	1119.	1973	1255.	1991	1052.	94
95	1902	0.	1955	4.	1998	234.	1933	697.	1983	1094.	1999	1249.	1995	1051.	95
96	1903	0.	2000	4.	2000	232.	1987	677.	1949	1094.	1983	1233.	1973	1019.	96
97	1904	0.	1974	2.	1940	227.	1914	641.	1995	1063.	1995	1146.	1953	961.	97
98	1905	0.	1991	1.	1966	203.	1998	637.	2000	1045.	1921	1123.	1919	896.	98
99	1908	0.	1900	0.	1953	193.	1921	632.	1921	961.	1953	1103.	1999	889.	99
100	1910	0.	1909	0.	1929	187.	1953	601.	1987	956.	1919	1078.	1932	860.	100
101	1911	0.	1914	0.	1914	185.	1919	596.	1953	954.	1987	1030.	1921	796.	101
102	1913	0.	1924	0.	1995	144.	1906	594.	1919	934.	1932	995.	2002	734.	102
103	1915	0.	1935	0.	1932	135.	1995	487.	1998	710.	2000	970.	2000	710.	103
104	1916	0.	1963	0.	2002	127.	2002	380.	1932	655.	2002	932.	1987	599.	104
105	1917	0.	1999	0.	1924	95.	1932	292.	2002	644.	1998	794.	1998	422.	105

Severity Index	December		January		February		March		April		May	
Upper Bound	year	FDD	year	FDD	year	FDD	year	FDD	year	FDD	year	FDD
Above Normal	1977	166.	1996	707.	1981	1420.	1979	2054.	1923	2322.	1912	2313.
Normal	1901	110.	1946	544.	1948	1199.	1948	1728.	1984	2041.	1926	1933.
Below Normal	1962	22.	1949	292.	1993	802.	1991	1248.	1942	1431.	1941	1184.
Mild	1914	0.	1914	185.	1919	596.	1953	954.	1987	1030.	1921	796.

Table 4.3 Ranked Seasonal FDD Accumulation on BOM Dates at Houghton, MI.

Rank	November		December		January		February		March		April		May		Rank
	year	FDD	year	FDD	year	FDD	year	FDD	year	FDD	year	FDD	year	FDD	
1	1926	32.	1952	326.	1977	830.	1977	1656.	1977	2113.	1904	2410.	1904	2347.	1
2	1906	18.	1960	277.	1952	817.	1920	1528.	1920	2097.	1912	2394.	1920	2284.	2
3	1955	16.	1996	240.	1990	808.	1959	1438.	1979	2084.	1979	2358.	1979	2275.	3
4	1997	15.	1948	223.	1986	767.	1918	1436.	1904	2068.	1959	2324.	1917	2259.	4
5	1994	11.	1951	218.	1951	733.	1948	1418.	1959	2048.	1920	2317.	1912	2250.	5
6	1907	9.	1898	196.	1920	729.	1951	1406.	1918	2032.	1917	2313.	1996	2211.	6
7	1989	8.	1986	195.	2001	710.	1979	1359.	1917	2023.	1948	2306.	1959	2200.	7
8	1924	7.	1977	191.	1959	707.	1912	1355.	1948	2011.	1965	2272.	1965	2187.	8
9	1914	7.	1930	184.	1984	695.	1952	1339.	1963	1967.	1899	2266.	1972	2167.	9
10	1912	7.	1990	176.	1996	671.	1984	1322.	1912	1946.	1951	2237.	1950	2113.	10
11	1985	6.	1934	167.	1918	652.	1996	1309.	1951	1919.	1963	2234.	1951	2066.	11
12	1918	5.	1997	163.	1934	650.	1994	1239.	1994	1910.	1996	2231.	1899	2045.	12
13	1952	5.	1987	162.	1925	646.	1963	1262.	1996	1850.	1972	2176.	1963	2036.	13
14	1990	4.	1979	160.	1973	623.	1904	1242.	1965	1831.	1977	2149.	1923	1998.	14
15	1950	4.	1912	158.	1948	621.	1930	1240.	1936	1735.	1923	2101.	1948	1953.	15
16	1909	2.	1937	157.	1965	621.	1986	1236.	1972	1730.	1918	2097.	1918	1939.	16
17	1937	2.	1992	154.	1956	617.	1965	1229.	1970	1723.	1970	2070.	1970	1928.	17
18	1931	2.	1933	151.	1979	616.	1917	1219.	1899	1721.	1950	2066.	1994	1889.	18
19	1927	2.	1957	149.	1928	598.	1957	1213.	1952	1701.	1994	2044.	1943	1888.	19
20	1967	2.	1965	148.	1927	596.	1927	1195.	1986	1692.	1943	2000.	1936	1877.	20
21	1925	0.	1927	140.	1898	592.	1925	1154.	1957	1692.	1957	1967.	1907	1847.	21
22	1928	0.	1968	139.	1904	592.	1950	1152.	1967	1658.	1952	1960.	1977	1840.	22
23	1929	0.	1956	137.	1917	585.	1976	1139.	1929	1658.	1967	1930.	1967	1814.	23
24	1930	0.	1920	128.	1930	567.	1961	1138.	1962	1654.	1934	1924.	1971	1802.	24
25	1932	0.	1978	126.	1933	556.	1971	1127.	1950	1652.	1984	1922.	1934	1795.	25
26	1933	0.	1901	122.	1964	551.	1970	1111.	1905	1652.	1936	1917.	1982	1795.	26
27	1934	0.	1959	122.	1997	528.	1972	1093.	1968	1622.	1971	1915.	1957	1775.	27
28	1935	0.	1922	121.	1976	524.	1943	1093.	1930	1613.	1913	1913.	1926	1771.	28
29	1936	0.	1958	119.	1915	515.	1915	1091.	1927	1606.	1905	1903.	1956	1769.	29
30	1938	0.	1950	119.	1978	513.	1990	1091.	1971	1602.	1916	1872.	1962	1768.	30
31	1939	0.	1970	115.	1981	511.	1997	1089.	1934	1595.	1974	1870.	1928	1764.	31
32	1940	0.	1994	114.	1950	506.	1962	1075.	1925	1591.	1982	1859.	1905	1741.	32
33	1941	0.	1904	112.	1961	506.	1978	1069.	1982	1580.	1930	1854.	1916	1726.	33
34	1942	0.	1983	112.	1949	493.	1899	1049.	1974	1579.	1962	1845.	1978	1724.	34
35	1943	0.	2001	112.	1957	491.	1928	1049.	1978	1577.	1978	1834.	1974	1721.	35
36	1944	0.	1998	109.	1899	488.	1982	1042.	1907	1573.	1960	1823.	1984	1680.	36
37	1945	0.	1973	106.	1967	479.	1905	1040.	1923	1570.	1928	1818.	1960	1670.	37
38	1946	0.	1976	106.	1943	470.	1968	1040.	1928	1570.	1956	1818.	1913	1661.	38
39	1947	0.	1917	106.	1946	468.	1922	1021.	1943	1550.	1925	1816.	1997	1642.	39
40	1948	0.	1931	103.	1968	466.	1991	1019.	1984	1532.	1926	1816.	1952	1631.	40
41	1949	0.	1941	99.	1963	466.	1956	1019.	1922	1523.	1900	1813.	1930	1627.	41
42	1951	0.	1928	94.	1926	463.	1973	1017.	1901	1517.	1901	1807.	1947	1598.	42
43	1953	0.	1939	94.	1960	461.	1981	1013.	1985	1514.	1929	1798.	1933	1593.	43
44	1954	0.	1947	94.	1992	460.	1974	1013.	1997	1493.	1986	1797.	1989	1583.	44
45	1956	0.	1967	92.	1971	452.	2001	1010.	1913	1492.	1997	1764.	1929	1564.	45
46	1957	0.	1899	92.	1938	452.	1985	1006.	2001	1476.	1907	1764.	1964	1537.	46
47	1958	0.	1971	92.	1905	452.	1907	995.	1961	1469.	1968	1744.	1966	1523.	47
48	1959	0.	1966	85.	1970	448.	1966	983.	1956	1454.	2001	1724.	1961	1521.	48
49	1960	0.	1972	81.	1958	448.	1934	979.	1973	1451.	1933	1715.	1968	1519.	49
50	1961	0.	1938	81.	1923	448.	1967	974.	1966	1442.	1955	1710.	1925	1499.	50
51	1962	0.	1944	77.	1902	439.	1911	972.	1933	1440.	1989	1710.	1937	1498.	51
52	1963	0.	1993	77.	1922	437.	1937	970.	1946	1440.	1947	1696.	1909	1496.	52
53	1964	0.	1936	76.	1911	437.	1929	968.	1990	1437.	1964	1683.	2001	1490.	53
54	1965	0.	1926	74.	1989	436.	1898	958.	1988	1428.	1927	1674.	1901	1490.	54
55	1966	0.	1943	74.	1962	432.	1935	954.	1976	1427.	1976	1667.	1986	1487.	55
56	1968	0.	1975	72.	1994	431.	1926	950.	1916	1427.	1937	1661.	1922	1472.	56
57	1969	0.	1995	72.	1991	430.	1945	949.	1900	1417.	1949	1656.	1927	1472.	57
58	1970	0.	1953	72.	1974	428.	1938	947.	1949	1391.	1922	1654.	1900	1409.	58
59	1971	0.	1984	69.	1969	425.	1946	932.	1926	1386.	1980	1642.	1954	1409.	59
60	1972	0.	1980	67.	1901	421.	1949	932.	1947	1379.	1961	1631.	1939	1408.	60
61	1973	0.	1988	65.	1972	412.	1936	931.	1981	1379.	1988	1630.	1914	1406.	61
62	1974	0.	1915	61.	1947	412.	1923	929.	1989	1377.	1985	1607.	1980	1406.	62
63	1975	0.	1969	59.	1987	411.	1960	927.	1960	1377.	1966	1597.	1975	1397.	63
64	1976	0.	1911	59.	1944	410.	1954	918.	1958	1373.	1969	1588.	1976	1391.	64
65	1977	0.	1905	59.	1993	410.	1901	907.	1945	1363.	1915	1568.	1993	1385.	65
66	1978	0.	1902	59.	1985	403.	1933	904.	1910	1361.	1990	1529.	1988	1377.	66

Table 4.3 cont. Ranked Seasonal FDD Accumulation on BOM Dates at Houghton, MI.

Rank	November		December		January		February		March		April		May		Rank
	year	FDD	year	FDD	year	FDD	year	FDD	year	FDD	year	FDD	year	FDD	
67	1979	0.	1925	56.	1937	392.	1902	896.	1915	1348.	1958	1517.	1969	1364.	67
68	1980	0.	1946	56.	1931	389.	1964	891.	1937	1346.	1909	1517.	1935	1343.	68
69	1981	0.	1981	54.	1935	385.	1992	876.	1898	1339.	1981	1514.	1955	1341.	69
70	1982	0.	1962	52.	1907	383.	1969	869.	1980	1337.	1993	1506.	1953	1328.	70
71	1983	0.	1921	52.	1936	383.	1947	869.	1991	1322.	1954	1503.	1958	1298.	71
72	1984	0.	1949	49.	1945	374.	1993	845.	1955	1316.	1914	1492.	1949	1289.	72
73	1986	0.	1918	47.	1900	373.	1958	841.	1964	1305.	1939	1481.	1985	1288.	73
74	1987	0.	1906	43.	1983	369.	1913	839.	1935	1305.	1991	1472.	1924	1280.	74
75	1988	0.	1954	40.	1903	364.	1955	837.	1993	1282.	1935	1463.	1981	1274.	75
76	1991	0.	1991	39.	1982	356.	1988	835.	1909	1265.	1906	1442.	1992	1259.	76
77	1992	0.	1982	38.	1910	353.	1924	833.	1938	1262.	1973	1422.	1990	1241.	77
78	1993	0.	1913	36.	1939	344.	1999	824.	1969	1260.	1975	1420.	1995	1223.	78
79	1995	0.	1989	36.	1909	342.	1909	819.	1911	1247.	1898	1411.	1908	1222.	79
80	1996	0.	1919	34.	1955	338.	1916	810.	1924	1228.	1992	1409.	1973	1219.	80
81	1998	0.	1942	32.	1954	331.	1980	808.	1903	1224.	1924	1408.	1944	1210.	81
82	1999	0.	1908	31.	1912	329.	1903	805.	1902	1208.	1941	1408.	1898	1193.	82
83	2000	0.	1923	31.	1941	329.	1910	805.	1939	1192.	1908	1397.	1915	1161.	83
84	2001	0.	1903	29.	1913	328.	1989	793.	1995	1192.	1953	1390.	1911	1150.	84
85	2002	0.	1929	29.	1966	320.	1983	778.	1953	1184.	1911	1366.	1906	1141.	85
86	1898	0.	1964	27.	1999	315.	1975	778.	1914	1179.	1944	1346.	1991	1131.	86
87	1899	0.	1932	25.	1908	310.	2000	777.	1992	1166.	1946	1330.	1983	1120.	87
88	1900	0.	1945	25.	1975	302.	1953	761.	1954	1154.	1938	1287.	1945	1103.	88
89	1901	0.	1916	25.	1980	302.	1900	754.	1975	1145.	1995	1280.	1940	1100.	89
90	1902	0.	1985	23.	1916	301.	1941	752.	1908	1138.	1945	1271.	1946	1075.	90
91	1903	0.	1907	23.	2000	293.	1987	747.	1941	1121.	1903	1262.	2002	1056.	91
92	1904	0.	1961	23.	1953	290.	1931	716.	1999	1057.	1910	1224.	1903	1042.	92
93	1905	0.	1955	22.	1998	271.	1908	707.	1944	1030.	1940	1224.	1941	1040.	93
94	1908	0.	2002	18.	1921	268.	1939	707.	1983	1019.	1902	1220.	1938	1024.	94
95	1910	0.	1974	14.	1988	264.	1944	646.	1906	1019.	1983	1206.	1902	1017.	95
96	1911	0.	1924	13.	1906	257.	1940	623.	2000	1004.	1999	1151.	1932	936.	96
97	1913	0.	2000	6.	1995	228.	1995	615.	1942	1001.	2002	1148.	1910	900.	97
98	1915	0.	1935	4.	1929	225.	1921	608.	1921	943.	1921	1118.	1999	832.	98
99	1916	0.	1909	2.	1942	196.	1998	603.	1987	934.	1942	1096.	1931	808.	99
100	1917	0.	1910	2.	1919	196.	1942	590.	1940	920.	1932	1062.	1921	803.	100
101	1919	0.	1900	0.	2002	195.	1906	535.	1931	920.	1931	1060.	2000	751.	101
102	1920	0.	1914	0.	1914	130.	2002	500.	1919	749.	1987	962.	1919	727.	102
103	1921	0.	1940	0.	1940	106.	1914	488.	2002	747.	2000	946.	1942	693.	103
104	1922	0.	1963	0.	1932	94.	1919	466.	1932	691.	1919	916.	1987	514.	104
105	1923	0.	1999	0.	1924	90.	1932	308.	1998	644.	1998	755.	1998	356.	105

Severity Index	December		January		February		March		April		May	
Upper Bound	year	FDD	year	FDD	year	FDD	year	FDD	year	FDD	year	FDD
Above Normal	1898	196.	1920	729.	1951	1406.	1918	2032.	1917	2313.	1996	2211.
Normal	1968	139.	1904	592.	1950	1152.	1967	1658.	1952	1960.	1977	1840.
Below Normal	1929	29.	1966	320.	1983	778.	1953	1184.	1911	1366.	1906	1141.
Mild	1900	0.	2002	195.	1906	535.	1931	920.	1931	1060.	2000	751.

Table 4.4 Ranked Seasonal FDD Accumulation on BOM Dates at Marquette, MI.

Rank	November		December		January		February		March		April		May		Rank
	year	FDD	year	FDD	year	FDD	year	FDD	year	FDD	year	FDD	year	FDD	
1	1926	27.	1996	275.	1977	990.	1977	1879.	1977	2374.	1979	2511.	1979	2439.	1
2	1989	20.	1977	263.	1986	931.	1979	1570.	1979	2273.	1977	2434.	1996	2394.	2
3	1994	18.	1987	233.	1990	925.	1984	1514.	1994	2088.	1996	2393.	1972	2372.	3
4	1997	14.	1986	225.	1984	809.	1986	1467.	1996	2019.	1972	2342.	1977	2144.	4
5	1906	13.	1990	217.	1996	766.	1996	1463.	1904	1953.	1904	2228.	1982	2140.	5
6	1977	9.	1979	200.	1979	751.	1994	1437.	1986	1938.	1971	2218.	1978	2140.	6
7	1924	9.	1960	196.	1973	702.	1920	1379.	1972	1917.	1994	2216.	1971	2102.	7
8	1985	7.	1930	182.	2001	701.	1982	1328.	1982	1886.	1978	2216.	1994	2064.	8
9	1907	7.	1978	175.	1920	671.	1978	1296.	1978	1885.	1970	2183.	1970	2000.	9
10	1955	5.	1992	173.	1978	661.	1918	1292.	1920	1854.	1982	2164.	1917	1989.	10
11	1952	5.	1997	172.	1925	619.	1971	1283.	1917	1823.	1912	2162.	1912	1978.	11
12	1950	4.	1968	169.	1981	610.	1976	1282.	1971	1822.	1984	2152.	1920	1953.	12
13	1914	4.	1998	161.	1904	603.	1972	1269.	1970	1813.	1899	2126.	1974	1939.	13
14	1912	4.	1970	151.	1976	590.	1970	1231.	1918	1791.	1986	2101.	1984	1906.	14
15	1993	3.	1994	151.	1918	578.	1990	1230.	1968	1773.	1974	2075.	1989	1864.	15
16	1940	2.	1934	149.	1934	572.	1904	1213.	1912	1771.	1917	2030.	1899	1863.	16
17	1918	2.	1904	149.	1968	558.	1912	1181.	1974	1764.	1920	1980.	1986	1804.	17
18	1990	2.	1898	142.	1987	556.	1991	1179.	1984	1716.	1989	1965.	1997	1697.	18
19	1922	0.	1948	135.	1959	549.	1981	1172.	1985	1668.	1976	1888.	1923	1694.	19
20	1923	0.	1973	135.	1989	527.	1974	1166.	1963	1667.	1968	1876.	1904	1690.	20
21	1925	0.	1912	124.	1992	524.	1973	1166.	1973	1622.	1980	1856.	1975	1669.	21
22	1927	0.	1933	124.	1971	522.	1968	1163.	1899	1620.	1985	1842.	1967	1665.	22
23	1928	0.	1993	120.	1974	522.	1985	1153.	1976	1620.	1988	1828.	1980	1643.	23
24	1929	0.	1952	117.	1970	513.	1959	1152.	1959	1613.	1923	1827.	1968	1636.	24
25	1930	0.	1976	115.	1927	511.	1917	1105.	1989	1604.	1997	1819.	1918	1636.	25
26	1931	0.	1983	113.	1994	510.	1963	1098.	1990	1592.	1967	1814.	1976	1633.	26
27	1932	0.	1980	113.	1917	504.	1997	1088.	1988	1582.	1969	1805.	1936	1622.	27
28	1933	0.	1927	110.	1997	502.	1930	1080.	1981	1553.	1918	1800.	1988	1609.	28
29	1934	0.	1937	110.	1930	500.	1925	1057.	1936	1546.	1963	1798.	1934	1607.	29
30	1935	0.	1956	110.	1898	499.	1927	1022.	1967	1526.	1959	1764.	1969	1602.	30
31	1936	0.	2001	104.	1993	497.	2001	1021.	1980	1521.	2001	1762.	1959	1568.	31
32	1937	0.	1965	103.	1991	489.	1899	1012.	2001	1519.	1934	1741.	1985	1557.	32
33	1938	0.	1901	103.	1972	486.	1992	1003.	1997	1500.	1981	1701.	1993	1537.	33
34	1939	0.	1920	101.	1985	483.	1987	991.	1991	1478.	1990	1692.	1963	1525.	34
35	1941	0.	1972	101.	1982	481.	1999	972.	1905	1474.	1936	1685.	1907	1525.	35
36	1942	0.	1922	97.	1969	479.	1948	970.	1925	1433.	1965	1663.	1905	1508.	36
37	1943	0.	1959	97.	1956	473.	1988	969.	1934	1429.	1975	1661.	1992	1503.	37
38	1944	0.	1931	97.	1928	463.	1980	965.	1993	1428.	1905	1658.	1981	1494.	38
39	1945	0.	1971	97.	1915	455.	1969	961.	1962	1424.	1991	1643.	1965	1478.	39
40	1946	0.	1981	95.	1933	454.	1905	950.	1929	1408.	1993	1634.	1926	1474.	40
41	1947	0.	1975	95.	1952	450.	1993	949.	1969	1400.	1992	1629.	2001	1470.	41
42	1948	0.	1957	94.	1965	445.	1943	947.	1965	1393.	1943	1615.	1950	1454.	42
43	1949	0.	1995	93.	1951	437.	1915	943.	1948	1381.	1916	1606.	1943	1451.	43
44	1951	0.	1951	92.	1899	436.	1965	938.	1923	1375.	1913	1598.	1973	1444.	44
45	1953	0.	1917	88.	1923	425.	1962	934.	1930	1359.	1948	1595.	1916	1415.	45
46	1954	0.	1962	83.	1943	421.	1989	930.	1907	1352.	1973	1589.	1990	1385.	46
47	1956	0.	1984	83.	1964	418.	1957	925.	1992	1343.	1900	1571.	1962	1352.	47
48	1957	0.	1939	81.	1938	416.	1975	913.	1975	1325.	1925	1559.	1913	1323.	48
49	1958	0.	1941	77.	1926	414.	1938	909.	1927	1323.	1926	1550.	1991	1322.	49
50	1959	0.	1899	77.	1948	414.	1945	887.	1913	1289.	1930	1539.	1928	1321.	50
51	1960	0.	1969	77.	1905	407.	1961	886.	1943	1287.	1962	1535.	1939	1312.	51
52	1961	0.	1938	74.	1961	389.	1951	875.	1922	1274.	1901	1528.	1930	1300.	52
53	1962	0.	1947	72.	1998	389.	1907	871.	1901	1267.	1929	1467.	1948	1273.	53
54	1963	0.	1988	71.	1911	389.	1929	862.	1999	1264.	1950	1463.	1909	1255.	54
55	1964	0.	1982	70.	1963	389.	1911	850.	1987	1250.	1907	1460.	1983	1238.	55
56	1965	0.	1926	68.	1983	385.	1922	841.	1957	1247.	1957	1424.	1995	1235.	56
57	1966	0.	1950	67.	1962	382.	1934	841.	1928	1233.	1951	1420.	1925	1231.	57
58	1967	0.	1943	65.	1922	378.	1952	833.	1916	1222.	1939	1406.	1933	1228.	58
59	1968	0.	1944	65.	1980	378.	1928	833.	1951	1222.	1928	1404.	1900	1228.	59
60	1969	0.	1985	62.	1902	373.	1926	832.	1900	1210.	1999	1401.	1929	1226.	60
61	1970	0.	1958	61.	1999	372.	1923	823.	1945	1204.	1933	1384.	1901	1224.	61
62	1971	0.	1905	61.	1947	371.	1983	819.	1910	1204.	1937	1370.	1951	1220.	62
63	1972	0.	1925	54.	1946	367.	1967	815.	1926	1197.	1922	1341.	1947	1204.	63
64	1973	0.	1936	52.	1910	360.	1950	812.	1938	1172.	1987	1312.	1937	1195.	64
65	1974	0.	1974	50.	1945	347.	1936	812.	1950	1168.	1927	1300.	1922	1163.	65
66	1975	0.	1911	47.	1975	346.	1998	811.	1995	1167.	1915	1298.	1999	1155.	66

Table 4.4 cont. Ranked Seasonal FDD Accumulation on BOM Dates at Marquette, MI.

Rank	November		December		January		February		March		April		May		Rank
	year	FDD	year	FDD	year	FDD	year	FDD	year	FDD	year	FDD	year	FDD	
67	1976	0.	1989	46.	1988	346.	1898	808.	1946	1166.	1983	1292.	1957	1138.	67
68	1978	0.	1953	43.	1957	335.	1935	799.	1933	1157.	1909	1276.	1956	1120.	68
69	1979	0.	1991	42.	1939	335.	1937	778.	1939	1136.	1947	1271.	1914	1100.	69
70	1980	0.	1928	41.	1901	335.	1956	760.	1898	1130.	1995	1261.	2002	1093.	70
71	1981	0.	1918	40.	1944	328.	1946	751.	1915	1127.	1952	1253.	1927	1064.	71
72	1982	0.	1913	38.	1931	324.	1902	749.	1947	1107.	1956	1249.	1924	1040.	72
73	1983	0.	1915	36.	1936	322.	1901	745.	1983	1103.	1960	1246.	1935	1031.	73
74	1984	0.	1902	31.	1907	320.	1924	733.	1911	1103.	2002	1242.	1960	1008.	74
75	1986	0.	1919	31.	1935	317.	1910	733.	1903	1094.	1911	1202.	1911	995.	75
76	1987	0.	1906	29.	1950	311.	1909	722.	1909	1094.	1914	1193.	1940	988.	76
77	1988	0.	1946	29.	1909	311.	1947	713.	1937	1091.	1906	1186.	1961	965.	77
78	1991	0.	1929	27.	1903	297.	1903	711.	1961	1087.	1924	1181.	1908	963.	78
79	1992	0.	1923	27.	1941	290.	1913	704.	1935	1085.	1935	1174.	1898	938.	79
80	1995	0.	1966	25.	1900	283.	1933	702.	1952	1082.	1908	1159.	1987	914.	80
81	1996	0.	1903	25.	1937	283.	1916	698.	1924	1049.	1938	1139.	1938	914.	81
82	1998	0.	1908	22.	1960	274.	1995	677.	1902	1040.	1961	1132.	1903	902.	82
83	1999	0.	1967	22.	1967	274.	1939	668.	1956	1039.	1898	1127.	1944	895.	83
84	1898	0.	2002	21.	1958	266.	1954	661.	1958	976.	1941	1121.	1952	880.	84
85	2001	0.	1932	18.	1949	261.	1966	641.	1914	976.	1998	1119.	1906	855.	85
86	2002	0.	1954	18.	1913	261.	1941	632.	1908	950.	1955	1105.	1915	837.	86
87	1899	0.	1945	16.	1916	243.	1964	626.	1966	947.	1940	1103.	1902	815.	87
88	1900	0.	1916	16.	1995	237.	2000	610.	1941	925.	1903	1098.	1964	812.	88
89	1901	0.	1942	14.	1908	230.	1960	607.	2000	925.	1964	1078.	1998	801.	89
90	1902	0.	1961	14.	1912	229.	1931	583.	1949	911.	1949	1071.	1966	785.	90
91	1903	0.	1921	13.	2002	215.	1900	560.	1960	907.	1944	1040.	1945	776.	91
92	1904	0.	1907	11.	1954	205.	1949	560.	1998	900.	1958	1031.	2000	752.	92
93	1905	0.	1949	11.	1921	202.	1940	558.	1955	880.	1945	1019.	1949	722.	93
94	1908	0.	1964	11.	1955	202.	1908	556.	1964	873.	1910	1010.	1958	718.	94
95	1909	0.	1955	4.	1906	196.	1955	547.	1906	835.	1902	999.	1941	711.	95
96	1910	0.	1924	2.	1929	185.	1958	542.	1942	835.	1946	988.	1910	702.	96
97	1911	0.	1909	0.	1942	155.	2002	538.	2002	826.	1966	959.	1954	691.	97
98	1913	0.	1910	0.	1953	142.	1942	506.	1940	817.	1954	923.	1946	691.	98
99	1915	0.	1914	0.	1919	131.	1944	472.	1944	781.	2000	885.	1953	670.	99
100	1916	0.	1935	0.	1966	124.	1921	464.	1954	749.	1942	864.	1955	662.	100
101	1917	0.	1940	0.	1940	110.	1953	446.	1953	743.	1921	814.	1932	576.	101
102	1919	0.	1963	0.	1914	95.	1906	439.	1921	706.	1953	794.	1931	509.	102
103	1920	0.	1999	0.	1924	67.	1914	403.	1931	698.	1931	781.	1919	495.	103
104	1921	0.	1900	0.	1932	29.	1919	360.	1919	605.	1932	733.	1921	434.	104
105	2000	-999.	2000	-999.	2000	9.	1932	171.	1932	466.	1919	709.	1942	369.	105

Severity Index	December		January		February		March		April		May	
Upper Bound	year	FDD	year	FDD	year	FDD	year	FDD	year	FDD	year	FDD
Above Normal	1979	200.	1979	751.	1994	1437.	1986	1938.	1971	2218.	1978	2140.
Normal	1933	124.	1971	522.	1968	1163.	1899	1620.	1985	1842.	1967	1665.
Below Normal	1932	18.	1949	261.	1966	641.	1914	976.	1998	1119.	1906	855.
Mild	1940	0.	1940	110.	1953	446.	1953	743.	1921	814.	1932	576.

Table 4.5 Ranked Seasonal FDD Accumulation on BOM Dates at Green Bay, WI.

Rank	November		December		January		February		March		April		May		Rank
	year	FDD	year	FDD	year	FDD	year	FDD	year	FDD	year	FDD	year	FDD	
1	1926	36.	1960	218.	1977	907.	1977	1802.	1904	2160.	1904	2304.	1904	2129.	1
2	1918	18.	1952	198.	1986	863.	1904	1422.	1977	2138.	1912	2135.	1979	1814.	2
3	1997	9.	1977	198.	1990	746.	1920	1409.	1979	2005.	1959	2117.	1959	1795.	3
4	1955	5.	1930	173.	2001	721.	1918	1375.	1959	1895.	1979	2106.	1912	1789.	4
5	1924	5.	1904	158.	1904	720.	1979	1361.	1920	1879.	1899	2050.	1978	1769.	5
6	1907	4.	1978	149.	1984	715.	1959	1346.	1917	1877.	1978	2018.	1917	1746.	6
7	1914	4.	1986	148.	1920	702.	1951	1325.	1918	1827.	1977	1978.	1920	1735.	7
8	1906	4.	1997	146.	1951	691.	1986	1324.	1912	1825.	1917	1969.	1951	1618.	8
9	1989	2.	1996	144.	1964	632.	1984	1307.	1978	1807.	1951	1913.	1899	1591.	9
10	1950	2.	1912	144.	1959	625.	1912	1273.	1963	1795.	1920	1906.	1936	1571.	10
11	1927	2.	1898	135.	1925	623.	1978	1224.	1936	1766.	1971	1872.	1972	1526.	11
12	1911	0.	1957	131.	1952	619.	1970	1211.	1951	1732.	1963	1856.	1971	1523.	12
13	1912	0.	1948	130.	1978	583.	1971	1210.	1986	1714.	1962	1791.	1977	1492.	13
14	1913	0.	1951	126.	1956	578.	1963	1208.	1899	1699.	1970	1780.	1918	1489.	14
15	1915	0.	1987	125.	1898	567.	1917	1208.	1971	1681.	1936	1775.	1956	1469.	15
16	1916	0.	1979	124.	1917	563.	1996	1141.	1970	1674.	1918	1748.	1965	1467.	16
17	1917	0.	1901	115.	1918	563.	1962	1138.	1905	1658.	1972	1746.	1962	1451.	17
18	1919	0.	1933	108.	1899	556.	1930	1130.	1962	1645.	1965	1719.	1950	1413.	18
19	1920	0.	1956	106.	1979	551.	1957	1125.	1929	1597.	1905	1712.	1982	1411.	19
20	1921	0.	1931	99.	1996	545.	1905	1094.	1982	1548.	1956	1687.	1996	1401.	20
21	1922	0.	1899	99.	1927	540.	1982	1094.	1994	1523.	1996	1681.	1923	1397.	21
22	1923	0.	1959	99.	1926	518.	1899	1091.	1948	1514.	1986	1670.	1963	1391.	22
23	1925	0.	1970	97.	1915	515.	1952	1091.	1972	1508.	1982	1660.	1905	1375.	23
24	1928	0.	1990	97.	1910	499.	1925	1089.	1996	1508.	1948	1654.	1943	1359.	24
25	1929	0.	1927	95.	1962	499.	1927	1085.	1965	1483.	1923	1649.	1970	1337.	25
26	1930	0.	1965	94.	1973	493.	1948	1073.	1910	1463.	1943	1629.	1926	1303.	26
27	1931	0.	1937	86.	1930	482.	2001	1073.	2001	1463.	1984	1606.	1984	1228.	27
28	1932	0.	1938	85.	1928	479.	1994	1067.	1957	1438.	1929	1557.	1948	1217.	28
29	1933	0.	1968	83.	1943	477.	1943	1044.	1956	1438.	1952	1544.	1986	1196.	29
30	1934	0.	1934	83.	1946	475.	1956	1019.	1922	1435.	2001	1538.	1929	1166.	30
31	1935	0.	1950	83.	1965	470.	1965	1015.	1984	1416.	1926	1535.	1928	1159.	31
32	1936	0.	1920	81.	1997	462.	1915	1010.	1943	1390.	1950	1517.	1916	1143.	32
33	1937	0.	1917	77.	1911	459.	1929	1004.	1952	1375.	1957	1498.	1922	1138.	33
34	1938	0.	1941	74.	1934	446.	1972	995.	1925	1372.	1916	1474.	1957	1130.	34
35	1939	0.	2001	74.	1970	443.	1910	994.	1923	1343.	1922	1465.	1952	1096.	35
36	1940	0.	1922	74.	1938	436.	1976	992.	1945	1341.	1994	1451.	1969	1094.	36
37	1941	0.	1926	68.	1971	432.	1997	985.	1930	1330.	1901	1451.	1994	1070.	37
38	1942	0.	1992	67.	1963	432.	1964	977.	1968	1309.	1969	1436.	1964	1067.	38
39	1943	0.	1925	65.	1957	428.	1945	976.	1901	1294.	1964	1429.	1975	1051.	39
40	1944	0.	1953	61.	1948	423.	1922	974.	1927	1294.	1960	1397.	1901	1044.	40
41	1945	0.	1943	61.	1933	421.	1936	972.	1964	1285.	1930	1382.	1997	1044.	41
42	1946	0.	1998	59.	1905	421.	1926	956.	1967	1278.	1925	1379.	2001	1029.	42
43	1947	0.	1911	59.	1945	419.	1938	949.	1997	1277.	1955	1377.	1960	1028.	43
44	1948	0.	1976	59.	1902	418.	1911	938.	1950	1276.	1997	1362.	1907	1013.	44
45	1949	0.	1939	58.	1961	407.	1991	913.	1926	1262.	1967	1357.	1930	1004.	45
46	1951	0.	1944	58.	1976	396.	1981	911.	1985	1256.	1900	1346.	1934	1001.	46
47	1952	0.	1972	56.	1981	392.	1961	909.	1974	1251.	1913	1325.	1967	994.	47
48	1953	0.	1971	52.	1923	389.	1990	908.	1928	1246.	1928	1325.	1937	972.	48
49	1954	0.	1958	50.	1922	385.	1985	905.	1988	1245.	1974	1321.	1989	967.	49
50	1956	0.	1984	50.	1967	380.	1935	896.	1916	1220.	1934	1307.	1924	967.	50
51	1957	0.	1905	47.	1968	378.	1898	895.	1946	1217.	1989	1279.	1900	947.	51
52	1958	0.	1983	47.	1974	364.	1928	887.	1955	1213.	1937	1265.	1913	940.	52
53	1959	0.	1918	43.	1989	358.	1969	884.	1935	1204.	1924	1260.	1974	916.	53
54	1960	0.	1947	40.	1935	358.	1946	884.	1969	1201.	1915	1260.	1947	905.	54
55	1961	0.	1993	38.	1931	355.	1966	878.	1898	1193.	1975	1256.	1925	902.	55
56	1962	0.	1973	38.	1991	352.	1968	862.	1903	1179.	1988	1222.	1909	895.	56
57	1963	0.	1975	34.	1987	350.	1950	850.	1976	1170.	1976	1210.	1935	889.	57
58	1964	0.	1936	34.	1936	347.	1974	833.	1990	1170.	1941	1204.	1955	871.	58
59	1965	0.	1902	34.	1901	346.	1973	826.	1902	1168.	1985	1199.	1940	864.	59
60	1966	0.	1946	32.	1950	344.	1902	817.	1966	1166.	1980	1183.	1939	851.	60
61	1967	0.	1954	31.	1909	331.	1903	806.	1981	1166.	1910	1174.	1988	842.	61
62	1968	0.	1919	29.	1960	329.	1955	797.	1915	1156.	1935	1172.	1927	842.	62
63	1969	0.	1982	29.	1947	328.	1924	794.	1907	1154.	1927	1170.	1966	830.	63
64	1970	0.	1966	29.	1939	326.	1937	783.	1913	1148.	1947	1168.	1914	830.	64
65	1971	0.	1915	29.	1969	324.	2000	781.	1911	1145.	1906	1147.	1961	797.	65
66	1972	0.	1989	28.	1972	320.	1907	781.	1938	1145.	1958	1147.	1976	797.	66

Table 4.5 cont. Ranked Seasonal FDD Accumulation on BOM Dates at Green Bay, WI.

Rank	November		December		January		February		March		April		May		Rank
	year	FDD	year	FDD	year	FDD	year	FDD	year	FDD	year	FDD	year	FDD	
67	1973	0.	1932	27.	1903	320.	1923	779.	1924	1141.	1940	1132.	1980	790.	67
68	1974	0.	1994	26.	1944	319.	1988	765.	1934	1136.	1939	1123.	1958	788.	68
69	1975	0.	1906	25.	1993	311.	1999	765.	1937	1132.	1968	1123.	1911	788.	69
70	1976	0.	1980	23.	1941	311.	1901	763.	1958	1130.	1911	1116.	1993	788.	70
71	1977	0.	1962	20.	1982	311.	1967	751.	1991	1124.	1966	1116.	1933	761.	71
72	1978	0.	1961	16.	1955	290.	1954	738.	1961	1102.	1907	1103.	1898	760.	72
73	1979	0.	1903	16.	1900	286.	1909	731.	1900	1100.	1898	1102.	1953	747.	73
74	1980	0.	1913	16.	1992	283.	1916	689.	1989	1098.	1990	1088.	1910	745.	74
75	1981	0.	1967	16.	1949	277.	1960	671.	1947	1091.	1909	1085.	1906	731.	75
76	1982	0.	1955	16.	1916	275.	1987	671.	1973	1082.	1914	1085.	1902	720.	76
77	1983	0.	1945	14.	2000	269.	1940	666.	1939	1035.	1981	1084.	1985	715.	77
78	1984	0.	1964	14.	1975	268.	1993	665.	1980	1033.	1961	1076.	1941	698.	78
79	1985	0.	1929	13.	1999	264.	1947	659.	1908	1019.	1902	1069.	1903	695.	79
80	1986	0.	1916	13.	1937	263.	1941	655.	1993	1017.	1993	1067.	1968	688.	80
81	1987	0.	1981	11.	1958	263.	1958	652.	1941	1015.	1991	1065.	1908	680.	81
82	1988	0.	1969	11.	1908	263.	1934	644.	1975	1013.	1945	1062.	1981	673.	82
83	1990	0.	1995	10.	1985	261.	1908	643.	1960	1010.	1949	1051.	1949	671.	83
84	1991	0.	1908	9.	1953	261.	1975	632.	1909	1006.	1933	1049.	1945	659.	84
85	1992	0.	1985	8.	1907	254.	1949	623.	1949	1004.	1903	1040.	1915	650.	85
86	1993	0.	1907	5.	1912	248.	1953	614.	1953	988.	1908	1031.	1944	646.	86
87	1994	0.	1988	5.	1994	241.	1939	603.	1914	983.	1953	1022.	1990	610.	87
88	1995	0.	1923	5.	1921	232.	1980	603.	2000	975.	1938	1017.	1938	610.	88
89	1996	0.	1924	5.	1954	232.	1913	598.	1933	952.	1946	986.	1991	572.	89
90	1998	0.	2000	5.	1906	218.	1931	596.	1940	934.	1954	958.	1954	567.	90
91	1999	0.	1949	5.	1929	194.	1992	567.	1954	862.	1944	905.	1946	542.	91
92	2000	0.	1928	5.	1998	185.	1933	560.	1942	859.	1973	851.	1973	497.	92
93	2001	0.	1921	4.	1983	180.	1989	559.	1999	855.	1942	779.	1983	445.	93
94	2002	0.	1909	2.	1988	178.	1900	554.	1906	844.	1999	770.	1932	416.	94
95	1898	0.	1974	2.	1913	175.	1942	522.	1987	789.	1992	740.	2000	400.	95
96	1899	0.	1942	0.	1980	158.	1983	508.	1995	745.	2000	727.	1992	394.	96
97	1900	0.	1963	0.	2002	153.	1944	484.	1944	745.	1931	713.	1995	365.	97
98	1901	0.	1991	0.	1966	133.	1921	477.	1931	682.	1932	709.	1999	345.	98
99	1902	0.	1999	0.	1942	112.	1998	474.	1992	680.	1983	698.	1931	306.	99
100	1903	0.	2002	0.	1995	109.	1906	463.	1983	670.	1987	690.	1942	241.	100
101	1904	0.	1900	0.	1940	104.	1995	414.	1921	655.	1995	638.	1919	227.	101
102	1905	0.	1910	0.	1914	99.	1914	355.	1919	587.	2002	615.	2002	210.	102
103	1908	0.	1914	0.	1919	77.	1919	333.	1998	487.	1919	574.	1987	162.	103
104	1909	0.	1935	0.	1924	61.	2002	332.	1932	475.	1921	547.	1921	11.	104
105	1910	0.	1940	0.	1932	27.	1932	223.	2002	472.	1998	444.	1998	0.	105

Severity Index	December		January		February		March		April		May	
Upper Bound	year	FDD	year	FDD	year	FDD	year	FDD	year	FDD	year	FDD
Above Normal	1978	149.	1984	715.	1959	1346.	1917	1877.	1978	2018.	1917	1746.
Normal	1959	99.	1926	518.	1899	1091.	1948	1514.	1986	1670.	1963	1391.
Below Normal	1985	8.	1907	254.	1949	623.	1949	1004.	1903	1040.	1915	650.
Mild	1900	0.	1940	104.	1995	414.	1921	655.	1995	638.	1919	227.

Table 4.6 Ranked Seasonal FDD Accumulation on BOM Dates at Milwaukee, WI.

Rank	November		December		January		February		March		April		May		Rank
	year	FDD	year	FDD	year	FDD	year	FDD	year	FDD	year	FDD	year	FDD	
1	1926	27.	1960	140.	1977	592.	1977	1327.	1904	1611.	1904	1598.	1904	1370.	1
2	1918	16.	1930	133.	1964	587.	1963	1096.	1977	1561.	1912	1480.	1978	1093.	2
3	1924	4.	1948	115.	1986	581.	1918	1093.	1963	1550.	1959	1462.	1959	1071.	3
4	1907	2.	1904	106.	1984	578.	1904	1082.	1959	1427.	1963	1453.	1912	1069.	4
5	1955	2.	1977	104.	1904	547.	1959	1071.	1979	1409.	1899	1420.	1979	1069.	5
6	1903	0.	1978	99.	1990	525.	1920	1028.	1918	1364.	1978	1408.	1982	1055.	6
7	1904	0.	1951	99.	1951	520.	1984	980.	1936	1357.	1979	1373.	1963	1039.	7
8	1905	0.	1899	92.	1920	518.	1982	961.	1917	1346.	1977	1336.	1917	1013.	8
9	1906	0.	1931	90.	2001	497.	1951	938.	1978	1339.	1982	1332.	1971	1012.	9
10	1908	0.	1898	88.	1959	495.	1979	936.	1920	1321.	1971	1278.	1920	988.	10
11	1909	0.	1957	86.	1925	472.	1978	900.	1982	1316.	1917	1274.	1899	963.	11
12	1910	0.	1959	83.	1910	459.	1912	884.	1912	1301.	1965	1244.	1936	947.	12
13	1911	0.	1912	79.	1917	430.	1971	878.	1899	1231.	1962	1222.	1965	923.	13
14	1912	0.	1996	69.	1899	421.	1986	877.	1905	1213.	1936	1219.	1951	882.	14
15	1913	0.	1952	68.	1918	419.	1962	864.	1951	1175.	1920	1211.	1972	875.	15
16	1914	0.	1965	68.	1915	416.	1945	846.	1971	1172.	1951	1211.	1918	875.	16
17	1915	0.	1956	61.	1943	405.	1917	844.	1962	1170.	1943	1157.	1962	850.	17
18	1916	0.	1938	61.	1898	401.	1970	824.	1910	1150.	1918	1152.	1943	841.	18
19	1917	0.	1986	58.	1945	392.	1943	821.	1986	1126.	1970	1138.	1977	830.	19
20	1919	0.	1953	50.	1978	385.	1948	799.	1970	1089.	1972	1096.	1905	733.	20
21	1920	0.	1937	49.	1973	385.	1910	796.	1943	1064.	1905	1078.	1970	711.	21
22	1921	0.	1925	49.	1946	376.	1915	788.	1948	1053.	1948	1057.	1926	634.	22
23	1922	0.	1990	46.	1963	373.	1899	778.	1945	1049.	1984	1007.	1996	602.	23
24	1923	0.	1979	45.	1926	360.	1964	770.	1929	1040.	1964	976.	1984	599.	24
25	1925	0.	1941	38.	1956	356.	1925	765.	1965	1033.	1960	945.	1964	592.	25
26	1927	0.	1927	36.	1952	342.	1905	760.	1994	983.	1923	936.	1923	571.	26
27	1928	0.	1997	36.	1965	340.	1930	758.	1964	965.	1996	934.	1948	551.	27
28	1929	0.	1943	36.	1962	322.	1936	743.	1972	963.	1986	912.	1947	536.	28
29	1930	0.	1920	36.	1961	319.	1965	729.	1984	936.	2001	901.	1940	533.	29
30	1931	0.	1984	32.	1927	311.	1957	725.	2001	932.	1926	900.	1975	524.	30
31	1932	0.	1970	32.	1902	310.	1994	717.	1985	902.	1900	873.	1956	470.	31
32	1933	0.	1972	31.	1996	306.	2001	716.	1925	893.	1947	862.	1967	464.	32
33	1934	0.	1926	29.	1979	301.	1961	711.	1967	886.	1929	853.	1916	464.	33
34	1935	0.	1939	29.	1971	281.	1996	689.	1996	882.	1967	851.	1960	464.	34
35	1936	0.	1958	27.	1938	279.	1929	675.	1946	880.	1916	846.	1966	461.	35
36	1937	0.	1905	27.	1911	277.	1946	661.	1966	871.	1994	837.	1950	448.	36
37	1938	0.	1966	25.	1930	277.	1981	659.	1902	855.	1957	833.	1969	445.	37
38	1939	0.	1968	25.	1928	274.	1927	652.	1981	846.	1969	832.	1957	445.	38
39	1940	0.	1982	25.	1948	274.	1985	649.	1957	842.	1915	830.	1986	421.	39
40	1941	0.	2001	23.	1982	268.	1926	646.	1958	839.	1940	817.	1900	414.	40
41	1942	0.	1973	22.	1981	252.	1969	628.	1915	832.	1956	801.	1961	401.	41
42	1943	0.	1911	22.	1936	252.	1952	619.	1974	823.	1901	801.	1944	398.	42
43	1944	0.	1946	22.	1944	250.	1973	614.	1901	814.	1958	797.	1924	392.	43
44	1945	0.	1954	20.	1933	248.	1972	608.	1968	806.	1980	776.	1958	389.	44
45	1946	0.	1971	18.	1967	245.	1966	599.	1988	806.	1910	774.	1929	385.	45
46	1947	0.	1961	16.	1970	245.	1938	596.	1947	803.	1974	769.	1901	385.	46
47	1948	0.	1950	16.	1974	243.	1935	594.	1973	797.	1966	769.	1980	376.	47
48	1949	0.	1906	16.	1905	238.	1898	587.	1923	787.	1925	767.	2001	366.	48
49	1950	0.	1980	16.	1935	236.	1940	581.	1898	781.	1924	754.	1974	344.	49
50	1951	0.	1936	14.	1923	223.	1924	578.	1956	779.	1952	740.	1994	344.	50
51	1952	0.	1944	14.	1931	221.	1956	576.	1961	774.	1981	736.	1928	337.	51
52	1953	0.	1933	14.	1934	220.	1976	574.	1916	774.	1985	725.	1910	326.	52
53	1954	0.	1989	12.	1969	211.	1902	567.	1926	767.	1988	708.	1902	304.	53
54	1956	0.	1967	11.	1900	203.	1974	565.	1969	761.	1930	695.	1907	301.	54
55	1957	0.	1945	11.	1903	203.	1991	551.	1900	756.	1975	693.	1981	301.	55
56	1958	0.	1918	9.	1947	200.	1928	542.	1903	751.	1902	691.	1930	293.	56
57	1959	0.	1916	9.	1957	196.	1911	533.	1924	751.	1913	689.	1935	292.	57
58	1960	0.	1992	8.	1991	192.	1990	532.	1930	751.	1961	677.	1937	284.	58
59	1961	0.	1994	8.	1989	184.	1997	525.	1935	749.	1945	668.	1988	278.	59
60	1962	0.	1908	7.	1939	184.	1999	513.	1922	733.	1950	662.	1913	277.	60
61	1963	0.	1975	7.	1909	182.	1903	509.	1980	727.	1934	655.	1909	266.	61
62	1964	0.	1955	5.	1999	180.	1922	493.	1940	716.	1955	655.	1952	265.	62
63	1965	0.	1985	5.	1922	171.	1988	480.	1952	713.	1941	652.	1914	265.	63
64	1966	0.	1962	5.	1916	169.	1967	479.	1942	709.	1944	652.	1934	256.	64
65	1967	0.	1901	5.	1921	169.	1968	479.	1913	684.	1922	614.	1925	250.	65
66	1968	0.	1964	5.	1997	169.	1955	446.	1928	684.	1928	608.	1915	250.	66

Table 4.6 cont. Ranked Seasonal FDD Accumulation on BOM Dates at Milwaukee, WI.

Rank	November		December		January		February		March		April		May		Rank
	year	FDD	year	FDD	year	FDD	year	FDD	year	FDD	year	FDD	year	FDD	
67	1969	0.	1993	5.	1968	162.	1954	439.	1927	682.	1898	608.	1898	248.	67
68	1970	0.	1932	4.	1954	160.	1942	432.	1907	653.	1937	605.	1945	238.	68
69	1971	0.	1919	4.	1994	156.	1909	419.	1955	652.	1914	594.	1922	238.	69
70	1972	0.	1949	2.	1976	153.	1907	418.	1911	623.	1946	585.	1989	234.	70
71	1973	0.	1947	2.	1949	151.	1916	416.	1938	623.	1989	582.	1973	232.	71
72	1974	0.	1969	2.	2002	143.	1958	412.	1989	620.	1935	578.	1911	191.	72
73	1975	0.	1988	1.	2000	141.	1923	412.	1960	619.	1942	574.	1949	166.	73
74	1976	0.	1917	0.	1993	132.	2000	406.	1997	617.	1906	554.	1985	154.	74
75	1977	0.	1921	0.	1955	128.	1947	398.	1990	614.	1973	553.	1993	136.	75
76	1978	0.	1922	0.	1960	124.	1980	387.	1976	601.	1968	551.	1941	131.	76
77	1979	0.	1923	0.	1908	122.	1944	385.	1934	599.	1949	547.	1997	129.	77
78	1980	0.	1924	0.	1901	121.	1901	383.	1914	596.	1909	522.	1946	128.	78
79	1981	0.	1928	0.	1950	119.	1960	371.	1908	590.	1903	517.	1903	106.	79
80	1982	0.	1929	0.	1907	117.	1908	356.	1949	590.	1911	504.	1933	101.	80
81	1983	0.	1934	0.	1941	115.	1949	353.	1991	588.	1993	493.	1906	101.	81
82	1984	0.	1935	0.	1972	110.	1937	353.	1975	587.	1997	491.	1955	97.	82
83	1985	0.	1940	0.	1985	101.	1975	349.	1937	578.	1908	466.	1939	95.	83
84	1986	0.	1942	0.	1958	99.	1900	346.	1944	572.	1933	455.	1927	86.	84
85	1987	0.	1963	0.	1987	98.	1950	342.	1941	569.	1907	452.	1968	85.	85
86	1988	0.	1974	0.	1975	97.	1913	340.	1950	567.	1927	450.	1908	68.	86
87	1989	0.	1976	0.	1953	95.	1987	317.	1909	547.	1939	445.	1942	50.	87
88	1990	0.	1981	0.	1906	95.	1941	315.	1939	535.	1954	421.	1953	22.	88
89	1991	0.	1983	0.	1988	83.	1993	305.	1999	511.	1999	403.	1932	0.	89
90	1992	0.	1987	0.	1913	83.	1953	295.	1993	505.	1976	396.	1938	0.	90
91	1993	0.	1991	0.	1937	77.	1931	293.	1933	475.	1991	390.	1954	0.	91
92	1994	0.	1995	0.	1940	76.	1939	288.	1953	423.	1990	379.	1976	0.	92
93	1995	0.	1998	0.	1998	69.	1934	286.	1906	416.	1938	335.	1983	0.	93
94	1996	0.	1999	0.	1929	68.	1921	259.	1954	410.	1953	331.	1987	0.	94
95	1997	0.	2000	0.	1992	67.	1989	223.	1995	387.	1919	243.	1990	0.	95
96	1998	0.	2002	0.	1912	65.	1983	220.	2000	378.	1932	221.	1991	0.	96
97	1999	0.	1900	0.	1919	59.	1998	211.	1919	335.	1931	202.	1992	0.	97
98	2000	0.	1902	0.	1942	54.	1995	196.	1987	317.	1983	202.	1995	0.	98
99	2001	0.	1903	0.	1983	47.	1933	196.	1921	304.	2002	176.	1998	0.	99
100	2002	0.	1907	0.	1914	38.	1919	196.	1983	293.	1995	151.	1999	0.	100
101	1898	0.	1909	0.	1980	36.	1992	190.	1931	254.	1987	137.	2000	0.	101
102	1899	0.	1910	0.	1966	36.	1906	187.	2002	178.	1992	74.	2002	0.	102
103	1900	0.	1913	0.	1924	22.	2002	172.	1992	165.	1921	65.	1919	0.	103
104	1901	0.	1914	0.	1995	13.	1914	137.	1998	132.	2000	57.	1921	0.	104
105	1902	0.	1915	0.	1932	0.	1932	59.	1932	88.	1998	0.	1931	0.	105

Severity Index	December		January		February		March		April		May	
Upper Bound	year	FDD	year	FDD	year	FDD	year	FDD	year	FDD	year	FDD
Above Normal	1978	99.	1990	525.	1920	1028.	1918	1364.	1978	1408.	1982	1055.
Normal	1925	49.	1946	376.	1915	788.	1948	1053.	1948	1057.	1926	634.
Below Normal	1963	0.	1987	98.	1950	342.	1941	569.	1907	452.	1968	85.
Mild	1909	0.	1980	36.	1992	190.	1931	254.	1987	137.	2000	0.

Table 4.7 Ranked Seasonal FDD Accumulation on BOM Dates at Chicago, IL.

Rank	November		December		January		February		March		April		May		Rank
	year	FDD	year	FDD	year	FDD	year	FDD	year	FDD	year	FDD	year	FDD	
1	1926	16.	1960	97.	1964	587.	1977	1123.	1963	1382.	1978	1256.	1904	965.	1
2	1918	11.	1948	95.	1984	579.	1984	1033.	1904	1323.	1904	1228.	1978	794.	2
3	1900	0.	1951	94.	1986	517.	1963	961.	1977	1267.	1963	1141.	1979	722.	3
4	1901	0.	1930	92.	2001	513.	1918	900.	1979	1260.	1979	1125.	1982	680.	4
5	1902	0.	1904	86.	1951	479.	1904	898.	1978	1253.	1899	1062.	1984	623.	5
6	1903	0.	1899	83.	1990	464.	1959	860.	1982	1148.	1912	1058.	1963	587.	6
7	1904	0.	1978	77.	1977	461.	1982	855.	1936	1107.	1982	1055.	1965	567.	7
8	1905	0.	1931	76.	1904	455.	1978	824.	1959	1078.	1984	1044.	1912	553.	8
9	1906	0.	1959	72.	1910	391.	1979	817.	1918	1033.	1965	1003.	1936	526.	9
10	1907	0.	1977	72.	1959	369.	1986	785.	1905	1033.	1959	959.	1899	524.	10
11	1908	0.	1965	63.	1920	346.	1920	749.	1986	1019.	1962	900.	1959	497.	11
12	1909	0.	1956	56.	1946	333.	1951	743.	1899	994.	1936	869.	1905	401.	12
13	1910	0.	1957	54.	1963	326.	2001	740.	1984	978.	1977	869.	1962	396.	13
14	1911	0.	1898	45.	1915	326.	1962	733.	1912	959.	1964	817.	1918	355.	14
15	1912	0.	1986	42.	1945	322.	1964	716.	1962	943.	1905	808.	1920	353.	15
16	1913	0.	1953	40.	1899	322.	1945	716.	1920	936.	2001	804.	1951	326.	16
17	1914	0.	1938	34.	1918	319.	1994	675.	1994	923.	1951	770.	1964	306.	17
18	1915	0.	1925	31.	1978	319.	1961	664.	1985	899.	1986	737.	1917	301.	18
19	1916	0.	1937	29.	1925	311.	1912	661.	1917	893.	1900	736.	1943	301.	19
20	1917	0.	1984	26.	1917	310.	1936	628.	2001	885.	1918	715.	1900	292.	20
21	1919	0.	1943	25.	1943	304.	1965	617.	1964	871.	1943	707.	1996	251.	21
22	1920	0.	1941	23.	1961	301.	1985	616.	1951	871.	1970	697.	1940	248.	22
23	1921	0.	1979	22.	1952	299.	1970	616.	1965	835.	1994	691.	1901	236.	23
24	1922	0.	1905	20.	1965	292.	1905	612.	1945	806.	1917	686.	1972	205.	24
25	1923	0.	1997	20.	1902	265.	1899	603.	1910	788.	1920	682.	1926	196.	25
26	1924	0.	1966	20.	1898	261.	1943	596.	1902	785.	1985	674.	1977	178.	26
27	1925	0.	2001	18.	1973	261.	1948	590.	1970	781.	1996	662.	2001	167.	27
28	1927	0.	1982	16.	1962	259.	1910	587.	1929	778.	1948	628.	1961	160.	28
29	1928	0.	1961	16.	1956	247.	1915	572.	1948	754.	1940	626.	1986	152.	29
30	1929	0.	1968	16.	1982	239.	1930	565.	1943	713.	1901	626.	1902	149.	30
31	1930	0.	1911	16.	1926	232.	1940	554.	1901	691.	1960	623.	1980	119.	31
32	1931	0.	1996	14.	1936	223.	1917	551.	1961	684.	1972	589.	1994	117.	32
33	1932	0.	1926	14.	1979	214.	1997	535.	1966	670.	1902	583.	1970	106.	33
34	1933	0.	1939	14.	1996	203.	1991	511.	1988	662.	1980	553.	1947	106.	34
35	1934	0.	1912	14.	1938	200.	1971	511.	1968	652.	1947	545.	1966	40.	35
36	1935	0.	1954	13.	1930	196.	1925	499.	1972	648.	1971	527.	1985	39.	36
37	1936	0.	1906	13.	1944	196.	1996	498.	1900	641.	1961	500.	1971	29.	37
38	1937	0.	1958	13.	1900	193.	1946	497.	1996	640.	1926	491.	1960	20.	38
39	1938	0.	1989	13.	1911	191.	1966	495.	1940	634.	1967	491.	1997	3.	39
40	1939	0.	1936	13.	1933	189.	1969	491.	1967	628.	1969	477.	1953	0.	40
41	1940	0.	1945	13.	1974	189.	1929	486.	1903	626.	1988	466.	1954	0.	41
42	1941	0.	1920	13.	1903	187.	1981	473.	1971	619.	1966	437.	1955	0.	42
43	1942	0.	1973	11.	1935	184.	1902	470.	1997	602.	1929	428.	1956	0.	43
44	1943	0.	1994	10.	1905	182.	1976	464.	1946	592.	1915	416.	1957	0.	44
45	1944	0.	1944	9.	1981	182.	1957	455.	1981	587.	1981	412.	1958	0.	45
46	1945	0.	1980	9.	1927	178.	1952	448.	1980	572.	1997	410.	1967	0.	46
47	1946	0.	1927	7.	1991	177.	1903	427.	1969	551.	1993	407.	1968	0.	47
48	1947	0.	1990	6.	1928	158.	1974	414.	1974	545.	1924	398.	1969	0.	48
49	1948	0.	1916	5.	1989	157.	1988	411.	1947	542.	1923	392.	1973	0.	49
50	1949	0.	1992	5.	1948	157.	1926	407.	1958	518.	1958	391.	1974	0.	50
51	1950	0.	1946	5.	1967	155.	1968	407.	1991	513.	1903	365.	1975	0.	51
52	1951	0.	1964	5.	1969	153.	1938	405.	1915	502.	1974	342.	1976	0.	52
53	1952	0.	1972	5.	1968	151.	1999	404.	1925	495.	1952	338.	1981	0.	53
54	1953	0.	1955	5.	1939	149.	1972	403.	1989	487.	1916	331.	1983	0.	54
55	1954	0.	1975	5.	1931	148.	1927	400.	1898	486.	1989	325.	1987	0.	55
56	1955	0.	1950	4.	1994	147.	1924	389.	1924	479.	1934	322.	1988	0.	56
57	1956	0.	1985	3.	2000	146.	1990	384.	1993	478.	1968	319.	1989	0.	57
58	1957	0.	1914	0.	1999	144.	1973	382.	1973	475.	1941	313.	1990	0.	58
59	1958	0.	1915	0.	1997	142.	1935	376.	1935	441.	1975	313.	1991	0.	59
60	1959	0.	1917	0.	2002	141.	1928	371.	1952	437.	1944	297.	1992	0.	60
61	1960	0.	1918	0.	1970	128.	1898	364.	1926	436.	1956	295.	1993	0.	61
62	1961	0.	1919	0.	1921	122.	1956	356.	1956	434.	1930	295.	1995	0.	62
63	1962	0.	1921	0.	1993	116.	2000	356.	1923	425.	1945	293.	1998	0.	63
64	1963	0.	1922	0.	1947	115.	1922	311.	1930	421.	1937	290.	1999	0.	64
65	1964	0.	1923	0.	1923	113.	1900	295.	1928	419.	1910	283.	2000	0.	65
66	1965	0.	1924	0.	1916	108.	1967	288.	1957	419.	1928	266.	2002	0.	66

Table 4.7 cont. Ranked Seasonal FDD Accumulation on BOM Dates at Chicago, IL.

Rank	November		December		January		February		March		April		May		Rank
	year	FDD	year	FDD	year	FDD	year	FDD	year	FDD	year	FDD	year	FDD	
67	1966	0.	1928	0.	1954	106.	1911	283.	1916	410.	1950	259.	1898	0.	67
68	1967	0.	1929	0.	1934	104.	1993	274.	1990	408.	1925	256.	1903	0.	68
69	1968	0.	1932	0.	1971	104.	1901	272.	1995	405.	1991	252.	1906	0.	69
70	1969	0.	1933	0.	1949	97.	1980	268.	1960	398.	1957	248.	1907	0.	70
71	1970	0.	1934	0.	1922	90.	1955	263.	1922	383.	1898	227.	1908	0.	71
72	1971	0.	1935	0.	1976	86.	1954	241.	1975	376.	1914	223.	1909	0.	72
73	1972	0.	1940	0.	1901	86.	1987	237.	1976	373.	1913	205.	1910	0.	73
74	1973	0.	1942	0.	1975	68.	1995	234.	1942	369.	1999	202.	1911	0.	74
75	1974	0.	1947	0.	1940	68.	1947	218.	1955	353.	1955	193.	1913	0.	75
76	1975	0.	1949	0.	1988	63.	1944	218.	1934	349.	1906	189.	1914	0.	76
77	1976	0.	1952	0.	1987	56.	1942	216.	1907	344.	1949	160.	1915	0.	77
78	1977	0.	1962	0.	1998	51.	1975	214.	1999	342.	1922	157.	1916	0.	78
79	1978	0.	1963	0.	1992	50.	1949	209.	1914	338.	1935	149.	1919	0.	79
80	1979	0.	1967	0.	1957	47.	1916	209.	1938	333.	1942	135.	1921	0.	80
81	1980	0.	1969	0.	1985	44.	1983	203.	1949	331.	1995	121.	1922	0.	81
82	1981	0.	1970	0.	1929	40.	1907	185.	1937	320.	1946	121.	1923	0.	82
83	1982	0.	1971	0.	1919	38.	1958	182.	1927	317.	1973	104.	1924	0.	83
84	1983	0.	1974	0.	1912	38.	1960	182.	1941	315.	1933	103.	1925	0.	84
85	1984	0.	1976	0.	1953	34.	1992	168.	1944	306.	1939	97.	1927	0.	85
86	1985	0.	1981	0.	1907	25.	1937	164.	1913	302.	1990	94.	1928	0.	86
87	1986	0.	1983	0.	1983	25.	1939	162.	1939	286.	1983	79.	1929	0.	87
88	1987	0.	1987	0.	1960	23.	1923	153.	1950	286.	1932	79.	1930	0.	88
89	1988	0.	1988	0.	1909	23.	1931	149.	1911	272.	1911	45.	1931	0.	89
90	1989	0.	1991	0.	1906	22.	1941	139.	2000	270.	1976	38.	1932	0.	90
91	1990	0.	1993	0.	1942	20.	1998	134.	1908	265.	2002	19.	1933	0.	91
92	1991	0.	1995	0.	1913	18.	2002	126.	1983	247.	1907	14.	1934	0.	92
93	1992	0.	1998	0.	1972	16.	1953	124.	1933	209.	1927	9.	1935	0.	93
94	1993	0.	1999	0.	1995	13.	1950	124.	1987	187.	1954	7.	1937	0.	94
95	1994	0.	2000	0.	1914	13.	1989	123.	1906	137.	1953	0.	1938	0.	95
96	1995	0.	2002	0.	1950	11.	1909	122.	1953	128.	1987	0.	1939	0.	96
97	1996	0.	1900	0.	1955	9.	1908	112.	2002	116.	1992	0.	1941	0.	97
98	1997	0.	1901	0.	1924	9.	1921	110.	1919	113.	1998	0.	1942	0.	98
99	1998	0.	1902	0.	1908	5.	1913	103.	1909	112.	2000	0.	1944	0.	99
100	1999	0.	1903	0.	1958	4.	1934	94.	1992	99.	1908	0.	1945	0.	100
101	2000	0.	1907	0.	1966	2.	1919	70.	1954	86.	1909	0.	1946	0.	101
102	2001	0.	1908	0.	1937	0.	1932	47.	1921	68.	1919	0.	1948	0.	102
103	2002	0.	1909	0.	1941	0.	1933	41.	1931	54.	1921	0.	1949	0.	103
104	1898	0.	1910	0.	1980	0.	1906	11.	1998	0.	1931	0.	1950	0.	104
105	1899	0.	1913	0.	1932	0.	1914	9.	1932	0.	1938	0.	1952	0.	105

Severity Index	December	January	February	March	April	May
Upper Bound	year	FDD	year	FDD	year	FDD
Above Normal	1899	83.	1990	464.	1982	860.
Normal	1941	23.	1961	301.	1985	616.
Below Normal	1976	0.	1953	34.	1992	168.
Mild	1907	0.	1966	2.	1919	70.

Table 4.8 Ranked Seasonal FDD Accumulation on BOM Dates at Traverse City, MI.

Rank	November		December		January		February		March		April		May		Rank
	year	FDD	year	FDD	year	FDD	year	FDD	year	FDD	year	FDD	year	FDD	
1	1926	9.	1930	106.	1990	570.	1977	1105.	1904	1850.	1904	1978.	1904	1883.	1
2	1914	2.	1898	97.	1977	497.	1904	1055.	1979	1571.	1899	1769.	1965	1469.	2
3	1927	2.	1960	95.	1959	486.	1918	1012.	1977	1465.	1979	1658.	1979	1467.	3
4	1918	2.	1951	85.	1904	468.	1959	961.	1963	1463.	1963	1627.	1899	1406.	4
5	1903	0.	1952	85.	1984	455.	1979	932.	1959	1417.	1959	1607.	1978	1373.	5
6	1904	0.	1990	82.	1964	410.	1920	925.	1899	1413.	1978	1589.	1959	1316.	6
7	1905	0.	1978	77.	1986	385.	1984	905.	1978	1379.	1965	1584.	1963	1283.	7
8	1906	0.	1904	77.	1920	382.	1963	857.	1918	1375.	1912	1544.	1920	1222.	8
9	1907	0.	1959	70.	1910	374.	1965	850.	1920	1370.	1920	1359.	1912	1219.	9
10	1908	0.	1948	68.	2001	371.	1994	842.	1994	1300.	1962	1355.	1905	1208.	10
11	1909	0.	1937	68.	1918	369.	1899	833.	1917	1276.	1977	1348.	1917	1121.	11
12	1910	0.	1957	65.	1979	358.	1961	824.	1965	1251.	1917	1339.	1923	1121.	12
13	1911	0.	1899	63.	1899	356.	1978	801.	1912	1235.	1905	1336.	1943	1098.	13
14	1912	0.	1979	63.	1930	353.	1925	794.	1905	1231.	1994	1324.	1918	1071.	14
15	1913	0.	1956	59.	1925	349.	1945	787.	1962	1219.	1970	1318.	1996	1057.	15
16	1915	0.	1965	58.	1961	349.	1930	763.	1936	1170.	1918	1314.	1936	1044.	16
17	1916	0.	1931	56.	1965	344.	1912	760.	1961	1105.	1923	1291.	1962	1033.	17
18	1917	0.	1977	54.	1917	340.	1943	752.	1970	1094.	1943	1280.	1982	986.	18
19	1919	0.	1934	47.	1951	338.	1981	749.	1948	1091.	1996	1254.	1994	978.	19
20	1920	0.	1986	47.	1996	331.	1996	745.	1996	1075.	1984	1246.	1977	936.	20
21	1921	0.	1996	47.	1978	329.	1982	738.	1945	1048.	1948	1228.	1934	911.	21
22	1922	0.	1975	45.	1981	328.	1905	733.	1982	1046.	1934	1190.	1984	908.	22
23	1923	0.	1950	41.	1956	308.	1917	733.	1943	1040.	1982	1188.	1972	904.	23
24	1924	0.	1918	40.	1898	297.	1948	725.	1968	1031.	1936	1184.	1970	902.	24
25	1925	0.	1953	38.	1915	295.	1970	724.	1910	1026.	1969	1145.	1961	886.	25
26	1928	0.	1943	38.	1927	292.	1962	720.	1974	1017.	1971	1139.	1971	873.	26
27	1929	0.	1968	38.	1905	288.	1910	706.	1923	1017.	1964	1136.	1956	860.	27
28	1930	0.	1939	31.	1952	288.	1986	692.	1986	1009.	1961	1107.	1950	826.	28
29	1931	0.	1920	31.	1943	284.	1951	679.	1929	1001.	1974	1102.	1926	814.	29
30	1932	0.	1941	29.	1946	279.	1964	677.	1925	997.	1980	1080.	1930	808.	30
31	1933	0.	1926	29.	1911	279.	1927	650.	1984	997.	1956	1076.	1964	796.	31
32	1934	0.	1912	27.	1934	277.	1976	643.	1964	994.	1930	1064.	1969	790.	32
33	1935	0.	1980	27.	1945	275.	1990	638.	1934	970.	1972	1060.	1924	787.	33
34	1936	0.	1972	25.	1974	270.	1971	625.	1930	938.	1924	1053.	1948	783.	34
35	1937	0.	1976	23.	1938	266.	1915	610.	1971	938.	1951	1037.	1980	781.	35
36	1938	0.	1927	23.	1923	265.	1957	605.	1951	938.	1967	1035.	1951	738.	36
37	1939	0.	1905	22.	1973	261.	1938	605.	1981	923.	1900	1035.	1974	736.	37
38	1940	0.	1938	22.	1962	261.	1923	594.	1967	914.	1926	1004.	1967	713.	38
39	1941	0.	1970	20.	1963	250.	1974	590.	1969	900.	1960	994.	1947	702.	39
40	1942	0.	1925	20.	1902	248.	1911	589.	1924	895.	1916	986.	1928	688.	40
41	1943	0.	1983	20.	1948	245.	1956	583.	1980	893.	1925	967.	1900	677.	41
42	1944	0.	1984	19.	1969	239.	1936	581.	1966	886.	1986	954.	1901	675.	42
43	1945	0.	1971	18.	1944	232.	1966	578.	1985	858.	1968	949.	1916	661.	43
44	1946	0.	1954	14.	1936	225.	1969	562.	1956	855.	1901	945.	1989	658.	44
45	1947	0.	1933	14.	1967	225.	1968	560.	1973	833.	1947	938.	1907	657.	45
46	1948	0.	1967	14.	1970	223.	1929	549.	1990	832.	1989	935.	1909	655.	46
47	1949	0.	1946	13.	1935	218.	2001	536.	1972	826.	1950	907.	1911	637.	47
48	1950	0.	1944	13.	1947	216.	1898	535.	1927	817.	1911	905.	1966	634.	48
49	1951	0.	1997	11.	1926	212.	1935	531.	1911	814.	1955	902.	1960	610.	49
50	1952	0.	1966	11.	1971	211.	1985	527.	1946	810.	1952	896.	1939	578.	50
51	1953	0.	1902	11.	1989	210.	1999	526.	1938	808.	1929	891.	1993	559.	51
52	1954	0.	1973	11.	1976	209.	1952	513.	1957	806.	2001	884.	1935	551.	52
53	1955	0.	1947	11.	1928	200.	1902	513.	1988	802.	1985	880.	1929	545.	53
54	1956	0.	1906	11.	1931	196.	1946	511.	1902	801.	1915	878.	1940	538.	54
55	1957	0.	2001	10.	1968	191.	1955	509.	2001	800.	1981	868.	1968	536.	55
56	1958	0.	1995	9.	1955	191.	1954	497.	1901	799.	1957	868.	1944	533.	56
57	1959	0.	1945	9.	1994	191.	2000	495.	1958	796.	1928	862.	1925	520.	57
58	1960	0.	1913	9.	1999	187.	1973	490.	1935	794.	1910	860.	1952	513.	58
59	1961	0.	1987	8.	1933	180.	1980	470.	1947	792.	1993	845.	1957	509.	59
60	1962	0.	1958	7.	1907	167.	1967	470.	1907	792.	1966	842.	1988	492.	60
61	1963	0.	1903	7.	1916	166.	1926	466.	1955	790.	1958	833.	1986	486.	61
62	1964	0.	1992	7.	1909	164.	1907	459.	1898	788.	1988	824.	1898	482.	62
63	1965	0.	1964	7.	2000	162.	1928	457.	1976	774.	1909	803.	1981	482.	63
64	1966	0.	1994	6.	1949	160.	1924	455.	1993	766.	1935	781.	1958	468.	64
65	1967	0.	1936	5.	1950	157.	1972	452.	1989	763.	1913	779.	1914	466.	65
66	1968	0.	1961	5.	1957	157.	1997	449.	1915	761.	1939	776.	1913	445.	66

Table 4.8 cont. Ranked Seasonal FDD Accumulation on BOM Dates at Traverse City, MI.

Rank	November		December		January		February		March		April		May		Rank
	year	FDD	year	FDD	year	FDD	year	FDD	year	FDD	year	FDD	year	FDD	
67	1969	0.	1916	5.	1901	153.	1947	448.	1952	749.	1945	767.	1937	445.	67
68	1970	0.	1917	4.	1900	153.	1909	439.	1928	738.	1990	767.	1975	443.	68
69	1971	0.	1989	4.	1982	148.	1934	436.	1900	733.	1940	754.	1910	428.	69
70	1972	0.	1969	4.	1993	139.	1940	428.	1926	718.	1944	752.	1985	414.	70
71	1973	0.	1932	2.	1937	131.	1988	419.	1916	713.	1976	749.	2001	413.	71
72	1974	0.	1923	2.	1960	128.	1922	419.	1942	691.	1937	740.	1945	396.	72
73	1975	0.	1901	2.	1958	126.	1901	418.	1950	686.	1907	729.	1955	389.	73
74	1976	0.	1988	2.	1997	124.	1993	404.	1909	677.	1902	722.	1933	389.	74
75	1977	0.	2000	1.	1922	124.	1958	401.	1913	668.	1898	722.	1902	387.	75
76	1978	0.	1955	0.	1939	122.	1903	392.	1922	657.	1927	715.	1997	383.	76
77	1979	0.	1962	0.	1903	119.	1950	378.	2000	651.	1954	688.	1915	380.	77
78	1980	0.	1963	0.	1980	115.	1937	376.	1903	648.	1997	687.	1927	378.	78
79	1981	0.	1974	0.	1992	114.	1942	373.	1997	646.	1914	684.	1990	350.	79
80	1982	0.	1981	0.	1954	113.	1931	371.	1960	646.	1938	684.	1922	349.	80
81	1983	0.	1982	0.	1921	112.	1960	358.	1999	641.	1941	680.	1954	344.	81
82	1984	0.	1985	0.	1953	106.	1983	347.	1939	641.	1942	680.	1976	328.	82
83	1985	0.	1991	0.	1908	94.	1949	342.	1908	619.	1922	673.	1908	326.	83
84	1986	0.	1993	0.	1987	92.	1944	342.	1940	612.	1999	644.	1973	290.	84
85	1987	0.	1998	0.	1941	90.	1989	341.	1944	585.	1933	643.	1938	275.	85
86	1988	0.	1999	0.	1985	89.	1953	337.	1937	572.	1906	641.	1983	268.	86
87	1989	0.	1900	0.	1983	85.	1916	335.	1995	570.	1975	639.	1999	259.	87
88	1990	0.	1907	0.	1940	79.	1939	331.	1954	563.	1908	619.	1949	257.	88
89	1991	0.	1908	0.	1972	77.	1992	324.	1949	547.	1973	617.	1953	256.	89
90	1992	0.	1909	0.	1966	76.	1900	324.	1914	536.	1949	598.	1906	245.	90
91	1993	0.	1910	0.	1988	72.	1941	310.	1933	531.	1931	567.	1995	218.	91
92	1994	0.	1911	0.	1975	65.	1987	278.	1941	526.	1946	515.	1941	212.	92
93	1995	0.	1914	0.	1912	61.	1975	272.	1953	524.	1992	507.	1942	205.	93
94	1996	0.	1915	0.	1929	61.	1908	270.	1975	500.	1953	500.	1931	205.	94
95	1997	0.	1919	0.	1913	56.	1933	245.	1983	470.	1903	479.	1992	189.	95
96	1998	0.	1921	0.	1942	56.	1921	241.	1931	454.	1983	468.	1903	171.	96
97	1999	0.	1922	0.	1998	50.	1995	233.	1992	448.	1995	467.	1946	164.	97
98	2000	0.	1924	0.	1906	49.	1913	232.	1987	436.	2000	419.	1932	164.	98
99	2001	0.	1928	0.	1919	47.	1919	191.	1906	392.	1987	350.	2000	128.	99
100	1898	0.	1929	0.	1924	22.	1906	137.	1921	387.	1932	333.	1919	0.	100
101	1899	0.	1935	0.	1932	16.	1914	92.	1919	355.	1919	295.	1921	0.	101
102	1900	0.	1940	0.	1995	11.	1932	32.	1932	153.	1921	230.	1987	0.	102
103	1901	0.	1942	0.	1914	0.	1991	-999.	1991	-999.	1991	-999.	1991	-999.	103
104	1902	0.	1949	0.	2002	-999.	1998	-999.	1998	-999.	1998	-999.	1998	-999.	104
105	2002	-999.	2002	-999.	1991	-999.	2002	-999.	2002	-999.	2002	-999.	2002	-999.	105

Severity Index	December		January		February		March		April		May	
Upper Bound	year	FDD	year	FDD	year	FDD	year	FDD	year	FDD	year	FDD
Above Normal	1990	82.	1964	410.	1920	925.	1899	1413.	1978	1589.	1959	1316.
Normal	1975	45.	1981	328.	1905	733.	1982	1046.	1934	1190.	1984	908.
Below Normal	1998	0.	1941	90.	1989	341.	1944	585.	1933	643.	1938	275.
Mild	1935	0.	1932	16.	1914	92.	1919	355.	1919	295.	1921	0.

Table 4.9 Ranked Seasonal FDD Accumulation on BOM Dates at Muskegon, MI.

Rank	November		December		January		February		March		April		May		Rank
	year	FDD	year	FDD	year	FDD	year	FDD	year	FDD	year	FDD	year	FDD	
1	1939	4.	1951	83.	1977	407.	1977	958.	1904	1345.	1904	1406.	1904	1136.	1
2	1931	2.	1978	70.	1959	374.	1918	880.	1977	1238.	1912	1395.	1912	972.	2
3	1918	2.	1904	70.	1984	365.	1904	797.	1979	1163.	1899	1231.	1920	882.	3
4	1901	0.	1960	61.	1990	355.	1920	785.	1918	1157.	1978	1186.	1979	839.	4
5	1902	0.	1899	59.	1904	349.	1959	779.	1963	1123.	1979	1114.	1978	805.	5
6	1903	0.	1930	56.	2001	317.	1984	758.	1912	1116.	1959	1114.	1918	803.	6
7	1904	0.	1977	52.	1918	313.	1963	698.	1920	1098.	1918	1096.	1899	754.	7
8	1905	0.	1959	50.	1920	311.	1912	695.	1978	1096.	1920	1094.	1959	749.	8
9	1906	0.	1957	45.	1951	299.	1979	673.	1959	1058.	1963	1049.	1982	695.	9
10	1907	0.	1948	43.	1910	295.	1994	666.	1899	1017.	1977	1035.	1917	668.	10
11	1908	0.	1996	39.	1964	286.	1978	639.	1905	988.	1917	947.	1996	587.	11
12	1909	0.	1956	38.	1917	274.	1996	609.	1994	972.	1970	943.	1963	581.	12
13	1910	0.	1952	38.	1996	270.	1982	598.	1917	958.	1982	938.	1905	572.	13
14	1911	0.	1898	36.	1978	250.	1970	583.	1982	889.	1994	921.	1971	513.	14
15	1912	0.	1931	32.	1925	250.	1910	580.	1936	862.	1905	913.	1994	512.	15
16	1913	0.	1979	32.	1986	249.	1905	576.	1910	855.	1984	893.	1970	509.	16
17	1914	0.	1972	25.	1952	245.	1981	572.	1970	837.	1996	890.	1936	488.	17
18	1915	0.	1965	23.	1899	239.	1971	554.	1996	812.	1900	871.	1977	486.	18
19	1916	0.	1953	23.	1963	232.	1917	544.	1962	805.	1971	839.	1984	457.	19
20	1917	0.	1968	22.	1915	232.	1899	540.	1902	788.	1962	812.	1907	450.	20
21	1919	0.	1975	22.	1961	227.	1925	538.	1984	766.	1901	772.	1923	448.	21
22	1920	0.	1926	20.	1956	225.	1961	538.	1971	756.	1936	760.	1926	448.	22
23	1921	0.	1937	20.	1981	220.	1951	526.	1974	743.	1974	716.	1962	428.	23
24	1922	0.	1918	18.	1905	211.	1962	493.	1901	733.	1956	716.	1956	405.	24
25	1923	0.	1925	18.	1911	209.	1930	484.	1907	724.	1923	693.	1900	392.	25
26	1924	0.	1997	16.	1927	209.	1986	475.	1986	710.	1972	691.	1972	374.	26
27	1925	0.	1905	14.	1979	207.	1948	470.	1951	697.	1969	684.	1934	344.	27
28	1926	0.	1941	14.	1902	207.	1945	466.	1985	684.	1951	670.	1951	337.	28
29	1927	0.	1920	13.	1974	200.	1969	464.	1981	682.	1926	668.	1901	329.	29
30	1928	0.	1950	11.	1930	198.	1915	463.	1968	671.	1934	657.	1974	322.	30
31	1929	0.	1970	11.	1946	193.	1956	448.	1948	670.	1916	653.	1940	311.	31
32	1930	0.	1984	11.	1970	187.	1902	446.	1929	664.	1924	641.	1943	308.	32
33	1932	0.	1943	9.	1969	184.	1927	439.	1900	662.	1965	634.	1916	306.	33
34	1933	0.	1938	9.	1971	182.	1966	430.	1961	652.	1980	630.	1950	290.	34
35	1934	0.	1980	9.	1898	169.	1936	427.	1956	641.	1940	626.	1924	288.	35
36	1935	0.	1986	7.	1945	166.	1943	425.	1925	641.	1914	621.	1902	261.	36
37	1936	0.	1961	7.	1962	164.	1985	421.	1969	641.	1902	617.	1965	259.	37
38	1937	0.	1954	5.	1926	160.	2001	419.	1972	637.	1960	616.	1961	250.	38
39	1938	0.	1994	5.	1994	157.	1974	416.	1914	623.	1943	598.	1980	248.	39
40	1940	0.	1966	5.	1903	151.	1907	410.	1903	623.	1981	592.	1969	241.	40
41	1941	0.	1958	5.	1943	148.	1903	405.	1966	621.	1985	589.	1914	191.	41
42	1942	0.	1982	5.	1938	146.	1911	403.	1924	607.	1925	589.	1960	171.	42
43	1943	0.	1967	4.	1936	144.	1952	401.	1945	599.	1948	585.	1922	167.	43
44	1944	0.	1945	4.	1935	140.	1999	395.	1980	587.	1907	581.	1930	167.	44
45	1945	0.	1992	3.	1973	139.	1940	383.	1988	582.	1915	563.	1909	158.	45
46	1946	0.	1989	2.	1934	137.	1968	383.	1934	580.	1910	560.	1911	158.	46
47	1947	0.	2001	2.	1944	137.	1964	380.	1943	571.	1952	544.	1925	144.	47
48	1948	0.	1990	2.	1989	129.	1922	371.	1958	560.	1986	541.	1981	140.	48
49	1949	0.	1911	2.	1900	126.	1957	369.	2001	560.	1930	533.	1908	133.	49
50	1950	0.	1912	2.	1907	122.	1938	367.	1898	554.	1961	533.	1966	130.	50
51	1951	0.	1906	2.	1965	122.	1997	365.	1922	549.	2001	529.	1952	113.	51
52	1952	0.	1987	2.	1999	122.	1965	360.	1923	547.	1947	502.	1997	110.	52
53	1953	0.	1908	2.	1933	121.	1972	358.	1916	545.	1922	502.	1898	106.	53
54	1954	0.	1901	0.	1916	119.	1976	347.	1940	544.	1929	500.	1975	104.	54
55	1955	0.	1902	0.	1949	117.	1924	346.	1930	544.	1908	493.	1915	97.	55
56	1956	0.	1903	0.	1931	113.	1929	342.	1965	542.	1906	490.	1947	97.	56
57	1957	0.	1907	0.	1991	110.	1935	340.	1908	533.	1988	489.	1906	81.	57
58	1958	0.	1909	0.	1997	109.	1991	338.	1935	524.	1911	488.	1935	76.	58
59	1959	0.	1910	0.	1982	104.	1990	338.	1952	518.	1955	477.	1988	65.	59
60	1960	0.	1913	0.	1909	101.	1926	335.	1911	515.	1958	477.	1967	61.	60
61	1961	0.	1914	0.	1968	99.	1946	329.	1946	513.	1950	475.	1910	59.	61
62	1962	0.	1915	0.	1921	95.	1898	326.	1967	509.	1966	473.	1958	43.	62
63	1963	0.	1916	0.	1948	95.	1901	313.	1915	506.	1967	463.	1928	41.	63
64	1964	0.	1917	0.	1967	95.	1988	312.	1926	502.	1968	459.	1944	32.	64
65	1965	0.	1919	0.	1928	94.	1955	308.	1955	493.	1898	452.	1957	31.	65
66	1966	0.	1921	0.	2002	93.	1954	301.	1973	491.	1909	446.	1989	29.	66

Table 4.9 cont. Ranked Seasonal FDD Accumulation on BOM Dates at Muskegon, MI.

Rank	November		December		January		February		March		April		May		Rank
	year	FDD	year	FDD	year	FDD	year	FDD	year	FDD	year	FDD	year	FDD	
67	1967	0.	1922	0.	1947	92.	2000	297.	1957	491.	1957	443.	1929	25.	67
68	1968	0.	1923	0.	1939	92.	1980	297.	1964	491.	1941	439.	1986	23.	68
69	1969	0.	1924	0.	1922	88.	1900	292.	1927	488.	1997	434.	1985	20.	69
70	1970	0.	1927	0.	1955	86.	1909	272.	1997	482.	1964	416.	1993	9.	70
71	1971	0.	1928	0.	1976	86.	1973	268.	1947	479.	1913	410.	1903	0.	71
72	1972	0.	1929	0.	1901	86.	1958	252.	1938	445.	1989	403.	1913	0.	72
73	1973	0.	1932	0.	1914	85.	1916	245.	1993	441.	1935	401.	1919	0.	73
74	1974	0.	1933	0.	2000	81.	1949	236.	1942	427.	1903	387.	1921	0.	74
75	1975	0.	1934	0.	1906	74.	1908	232.	1990	424.	1993	382.	1927	0.	75
76	1976	0.	1935	0.	1923	72.	1923	221.	1913	412.	1975	374.	1931	0.	76
77	1977	0.	1936	0.	1940	67.	1993	221.	1989	411.	1944	346.	1932	0.	77
78	1978	0.	1939	0.	1993	54.	1928	218.	1909	403.	1927	340.	1933	0.	78
79	1979	0.	1940	0.	1992	54.	1947	211.	1999	390.	1999	333.	1937	0.	79
80	1980	0.	1942	0.	1975	52.	1921	200.	1941	383.	1949	326.	1938	0.	80
81	1981	0.	1944	0.	1908	52.	1967	200.	1991	383.	1942	306.	1939	0.	81
82	1982	0.	1946	0.	1953	52.	1987	200.	1949	382.	1939	306.	1941	0.	82
83	1983	0.	1947	0.	1919	49.	1953	194.	1960	376.	1954	304.	1942	0.	83
84	1984	0.	1949	0.	1988	48.	1939	189.	1995	375.	1937	288.	1945	0.	84
85	1985	0.	1955	0.	1912	43.	1941	182.	1950	365.	1928	286.	1946	0.	85
86	1986	0.	1962	0.	1957	43.	1942	182.	1906	355.	1933	265.	1948	0.	86
87	1987	0.	1963	0.	1985	42.	1960	178.	1976	340.	1945	261.	1949	0.	87
88	1988	0.	1964	0.	1972	41.	1944	176.	1939	340.	1990	254.	1953	0.	88
89	1989	0.	1969	0.	1954	40.	1934	176.	1975	340.	1938	236.	1954	0.	89
90	1990	0.	1971	0.	1998	39.	1914	176.	1944	302.	1995	225.	1955	0.	90
91	1991	0.	1973	0.	1980	38.	1983	173.	1928	302.	1946	220.	1964	0.	91
92	1992	0.	1974	0.	1960	36.	1975	173.	1954	281.	1991	210.	1968	0.	92
93	1993	0.	1976	0.	1987	33.	1931	158.	1933	279.	1973	202.	1973	0.	93
94	1994	0.	1981	0.	1929	27.	1992	150.	1953	274.	1919	180.	1976	0.	94
95	1995	0.	1983	0.	1958	27.	1950	142.	1921	268.	1932	173.	1983	0.	95
96	1996	0.	1985	0.	1950	23.	1995	141.	1937	259.	1976	167.	1987	0.	96
97	1997	0.	1988	0.	1966	23.	1989	139.	2000	253.	1953	167.	1990	0.	97
98	1998	0.	1991	0.	1941	23.	1913	128.	1919	245.	1992	144.	1991	0.	98
99	1999	0.	1993	0.	1983	14.	1919	128.	1987	237.	1921	92.	1992	0.	99
100	2000	0.	1995	0.	1937	14.	1998	115.	1983	225.	1983	88.	1995	0.	100
101	2001	0.	1998	0.	1942	9.	1937	110.	1992	188.	1987	87.	1998	0.	101
102	2002	0.	1999	0.	1924	7.	1906	104.	1931	130.	1931	76.	1999	0.	102
103	1898	0.	2000	0.	1913	7.	1933	77.	1932	83.	2002	27.	2000	0.	103
104	1899	0.	2002	0.	1995	6.	2002	50.	2002	35.	2000	0.	2001	0.	104
105	1900	0.	1900	0.	1932	0.	1932	32.	1998	29.	1998	0.	2002	0.	105

Severity Index	December		January		February		March		April		May	
Upper Bound	year	FDD	year	FDD	year	FDD	year	FDD	year	FDD	year	FDD
Above Normal	1930	56.	2001	317.	1984	758.	1912	1116.	1959	1114.	1918	803.
Normal	1926	20.	1956	225.	1961	538.	1971	756.	1936	760.	1926	448.
Below Normal	1955	0.	1912	43.	1941	182.	1950	365.	1928	286.	1946	0.
Mild	1998	0.	1942	9.	1937	110.	1992	188.	1987	87.	1998	0.

Table 4.10 Ranked Seasonal FDD Accumulation on BOM Dates at Alpena, MI.

Rank	November		December		January		February		March		April		May		Rank
	year	FDD	year	FDD	year	FDD	year	FDD	year	FDD	year	FDD	year	FDD	
1	1926	18.	1960	144.	1990	715.	1977	1283.	1918	1789.	1904	2003.	1904	1881.	1
2	1907	7.	1930	133.	1977	605.	1918	1278.	1904	1782.	1963	1874.	1920	1678.	2
3	1914	4.	1990	123.	1918	540.	1920	1132.	1963	1674.	1918	1854.	1918	1672.	3
4	1997	3.	1934	122.	2001	505.	1904	1060.	1977	1636.	1920	1769.	1963	1580.	4
5	1973	2.	1937	115.	1904	500.	1963	1042.	1920	1634.	1912	1735.	1912	1514.	5
6	1924	2.	1904	115.	1959	488.	1984	1024.	1979	1559.	1978	1634.	1978	1514.	6
7	1918	2.	1996	114.	1996	474.	1994	985.	1994	1534.	1959	1631.	1917	1469.	7
8	1905	0.	1978	110.	1920	463.	1959	983.	1959	1454.	1994	1602.	1996	1439.	8
9	1906	0.	1979	85.	1986	455.	1996	981.	1917	1442.	1970	1602.	1934	1415.	9
10	1908	0.	1957	81.	1981	445.	1961	981.	1905	1406.	1917	1598.	1923	1406.	10
11	1909	0.	1931	79.	1964	441.	1981	981.	1978	1402.	1934	1597.	1965	1395.	11
12	1910	0.	1968	79.	1934	432.	1970	929.	1936	1388.	1899	1593.	1926	1366.	12
13	1911	0.	1997	78.	1984	426.	1979	904.	1996	1383.	1996	1590.	1959	1354.	13
14	1912	0.	1977	76.	1925	414.	1978	900.	1912	1382.	1979	1582.	1899	1352.	14
15	1913	0.	1918	74.	1978	409.	1976	886.	1970	1363.	1905	1570.	1936	1328.	15
16	1915	0.	1952	72.	1930	401.	1986	872.	1962	1334.	1923	1544.	1905	1323.	16
17	1916	0.	1898	70.	1961	391.	1905	868.	1934	1285.	1977	1514.	1979	1310.	17
18	1917	0.	1948	65.	1927	374.	1990	861.	1982	1253.	1965	1512.	1970	1303.	18
19	1919	0.	1970	63.	1905	373.	1925	855.	1961	1251.	1962	1487.	1982	1294.	19
20	1920	0.	1951	61.	1963	365.	1912	846.	1899	1237.	1971	1460.	1971	1271.	20
21	1921	0.	1912	61.	1970	356.	1930	842.	1986	1226.	1982	1456.	1972	1267.	21
22	1922	0.	1926	59.	1917	353.	1982	839.	1965	1213.	1960	1453.	1962	1265.	22
23	1923	0.	1959	59.	1915	353.	1945	826.	1968	1211.	1936	1444.	1994	1261.	23
24	1925	0.	1933	59.	1956	344.	1971	826.	1971	1206.	1967	1393.	1960	1199.	24
25	1927	0.	1956	58.	1979	342.	1927	824.	1981	1193.	1926	1391.	1961	1192.	25
26	1928	0.	1965	56.	1936	337.	1965	817.	1967	1179.	1972	1370.	1977	1175.	26
27	1929	0.	1927	54.	1969	331.	1917	812.	1974	1157.	1961	1352.	1943	1175.	27
28	1930	0.	1941	49.	1965	329.	1962	774.	1923	1152.	1984	1330.	1967	1147.	28
29	1931	0.	1975	47.	1911	326.	1964	754.	1976	1130.	1943	1316.	1930	1111.	29
30	1932	0.	1972	47.	1951	326.	1943	752.	1990	1130.	1916	1307.	1907	1082.	30
31	1933	0.	1986	45.	1926	322.	1936	747.	1925	1129.	1930	1291.	1916	1064.	31
32	1934	0.	1950	45.	1943	310.	2001	742.	1945	1125.	1974	1289.	1914	1042.	32
33	1935	0.	1902	41.	1974	308.	1899	736.	1930	1123.	1986	1255.	1974	999.	33
34	1936	0.	1899	41.	1902	308.	1997	726.	1984	1115.	1969	1251.	1984	994.	34
35	1937	0.	1905	41.	1973	302.	1915	722.	1929	1096.	1901	1235.	1928	988.	35
36	1938	0.	1939	36.	1967	302.	1938	720.	1907	1091.	1948	1233.	1997	973.	36
37	1939	0.	1920	36.	1952	301.	1968	700.	1927	1069.	1900	1219.	1924	972.	37
38	1940	0.	1915	36.	1971	301.	1969	695.	1948	1057.	1968	1211.	1969	965.	38
39	1941	0.	1987	35.	1899	299.	1951	693.	2001	1057.	1964	1206.	1956	952.	39
40	1942	0.	1953	34.	1938	297.	1957	691.	1972	1055.	1997	1203.	1948	936.	40
41	1943	0.	1925	34.	1946	295.	1935	686.	1964	1048.	1925	1197.	1964	929.	41
42	1944	0.	2001	32.	1907	292.	1902	664.	1943	1040.	1981	1190.	1901	923.	42
43	1945	0.	1976	29.	1898	292.	1907	661.	1924	1039.	1914	1181.	1950	920.	43
44	1946	0.	1943	29.	1935	286.	1911	659.	1935	1035.	2001	1180.	1908	911.	44
45	1947	0.	1981	29.	1931	286.	1948	659.	1901	1033.	1976	1175.	1939	896.	45
46	1948	0.	1973	29.	1945	284.	1956	657.	1997	1024.	1924	1166.	1900	895.	46
47	1949	0.	1906	29.	1976	281.	1974	657.	1969	1015.	1990	1148.	1980	891.	47
48	1950	0.	1998	28.	1962	275.	1923	653.	1973	1013.	1980	1143.	1925	882.	48
49	1951	0.	1983	25.	1960	275.	1985	648.	1985	1010.	1908	1138.	1989	878.	49
50	1952	0.	1994	23.	1968	275.	1926	643.	1926	1008.	1956	1136.	1947	875.	50
51	1953	0.	1917	23.	1997	271.	1966	637.	1902	1004.	1915	1130.	1940	871.	51
52	1954	0.	1980	22.	1989	266.	1934	637.	1910	1003.	1928	1116.	1986	870.	52
53	1955	0.	1913	22.	1903	263.	1967	634.	1946	999.	1907	1109.	1975	855.	53
54	1956	0.	1938	20.	1910	261.	1999	633.	1960	995.	1941	1109.	1927	839.	54
55	1957	0.	1969	20.	1923	257.	1960	626.	1908	992.	1989	1107.	1935	835.	55
56	1958	0.	1971	20.	1944	248.	1922	617.	1988	987.	1988	1084.	1968	830.	56
57	1959	0.	1929	18.	1948	241.	1946	614.	1938	979.	1935	1082.	1981	821.	57
58	1960	0.	1936	18.	1909	238.	1929	610.	1922	977.	1927	1076.	1911	817.	58
59	1961	0.	1903	18.	1933	236.	1903	608.	1951	970.	1913	1073.	1929	803.	59
60	1962	0.	1995	17.	1922	227.	1972	603.	1915	970.	1985	1065.	1993	803.	60
61	1963	0.	1966	16.	1947	227.	1991	594.	1914	963.	1929	1064.	1922	801.	61
62	1964	0.	1982	16.	1916	223.	1973	590.	1980	958.	1951	1064.	1951	799.	62
63	1965	0.	1923	16.	1999	222.	1910	585.	1916	940.	1922	1064.	1913	792.	63
64	1966	0.	1901	14.	1900	220.	1924	583.	1956	925.	1940	1058.	1909	788.	64
65	1967	0.	1908	14.	1908	218.	1898	580.	1903	916.	1947	1046.	1976	788.	65
66	1968	0.	1946	14.	1992	218.	1931	563.	1928	913.	1939	1042.	1988	778.	66

Table 4.10 cont. Ranked Seasonal FDD Accumulation on BOM Dates at Alpena, MI.

Rank	November		December		January		February		March		April		May		Rank
	year	FDD	year	FDD	year	FDD	year	FDD	year	FDD	year	FDD	year	FDD	
67	1969	0.	1967	13.	1957	218.	2000	562.	1957	911.	1993	1039.	2001	774.	67
68	1970	0.	1964	11.	1955	214.	1901	560.	1966	896.	1911	1022.	1990	765.	68
69	1971	0.	1984	10.	1994	213.	1952	554.	1900	893.	1957	1013.	1915	725.	69
70	1972	0.	1962	9.	1937	205.	1908	554.	1989	886.	1950	981.	1957	718.	70
71	1974	0.	1919	9.	1901	203.	1909	544.	1913	886.	1955	979.	1941	707.	71
72	1975	0.	1961	9.	1928	198.	1955	533.	1993	880.	1975	968.	1966	695.	72
73	1976	0.	2000	7.	1982	194.	1941	533.	1947	878.	1938	963.	1902	680.	73
74	1977	0.	1947	7.	1941	187.	1940	533.	1911	878.	1906	956.	1944	675.	74
75	1978	0.	1954	5.	1972	185.	1992	522.	1898	866.	1902	947.	1992	675.	75
76	1979	0.	1911	5.	2000	178.	1954	520.	1941	850.	1909	927.	1985	667.	76
77	1980	0.	1992	5.	1950	175.	1980	515.	1955	832.	1952	922.	1937	655.	77
78	1981	0.	1958	5.	1991	174.	1928	511.	1958	826.	1945	920.	1938	648.	78
79	1982	0.	1922	5.	1975	169.	1947	506.	1999	825.	1973	913.	1973	635.	79
80	1983	0.	1944	5.	1939	155.	1988	497.	1940	817.	1992	904.	1933	630.	80
81	1984	0.	1945	5.	1949	151.	1975	468.	1939	810.	1966	896.	1906	614.	81
82	1985	0.	1916	5.	1985	144.	1916	466.	1909	806.	1999	886.	1898	608.	82
83	1986	0.	1989	4.	1993	138.	1993	463.	1942	803.	1937	869.	1931	587.	83
84	1987	0.	1988	3.	1906	137.	1989	453.	1952	774.	1933	851.	1945	572.	84
85	1988	0.	1942	2.	1980	135.	1900	450.	2000	763.	1898	851.	1955	558.	85
86	1989	0.	1921	0.	1921	124.	1937	450.	1975	751.	1931	848.	1903	551.	86
87	1990	0.	1924	0.	1954	122.	1942	439.	1992	742.	1910	833.	1952	545.	87
88	1991	0.	1928	0.	1987	121.	1939	428.	1931	731.	1942	832.	1999	541.	88
89	1992	0.	1932	0.	1958	112.	1950	412.	1991	726.	1958	817.	1910	513.	89
90	1993	0.	1935	0.	1942	110.	1983	409.	1950	711.	1944	817.	1954	506.	90
91	1994	0.	1940	0.	1998	110.	1958	409.	1933	707.	1903	797.	1946	506.	91
92	1995	0.	1949	0.	1966	106.	1987	396.	1995	699.	1946	785.	1958	500.	92
93	1996	0.	1955	0.	1940	106.	1914	380.	1937	668.	1954	772.	1995	474.	93
94	1998	0.	1963	0.	1929	106.	1913	373.	1987	663.	1991	749.	1919	441.	94
95	1999	0.	1974	0.	1983	103.	1933	365.	1906	626.	1995	675.	1983	407.	95
96	2000	0.	1985	0.	2002	100.	1944	358.	1944	614.	1987	658.	1942	391.	96
97	2001	0.	1991	0.	1913	97.	1921	342.	1954	605.	1919	644.	2002	333.	97
98	2002	0.	1993	0.	1988	96.	1998	329.	1983	603.	2002	642.	2000	330.	98
99	1898	0.	1999	0.	1912	92.	1949	324.	1919	567.	1983	641.	1991	327.	99
100	1899	0.	2002	0.	1919	88.	1919	308.	1921	558.	1949	621.	1932	311.	100
101	1900	0.	1900	0.	1914	88.	2002	271.	1949	526.	2000	603.	1953	304.	101
102	1901	0.	1907	0.	1953	65.	1906	270.	1953	463.	1921	527.	1949	295.	102
103	1902	0.	1909	0.	1932	36.	1995	269.	2002	461.	1953	511.	1987	250.	103
104	1903	0.	1910	0.	1924	36.	1953	268.	1998	389.	1932	479.	1921	142.	104
105	1904	0.	1914	0.	1995	27.	1932	50.	1932	250.	1998	439.	1998	85.	105

Severity Index	December		January		February		March		April		May	
Upper Bound	year	FDD	year	FDD	year	FDD	year	FDD	year	FDD	year	FDD
Above Normal	1904	115.	1959	488.	1984	1024.	1979	1559.	1978	1634.	1978	1514.
Normal	1926	59.	1917	353.	1982	839.	1965	1213.	1960	1453.	1962	1265.
Below Normal	1942	2.	1980	135.	1900	450.	2000	763.	1898	851.	1955	558.
Mild	1900	0.	1914	88.	2002	271.	1949	526.	2000	603.	1953	304.

Table 4.11 Ranked Seasonal FDD Accumulation on BOM Dates at Port Huron, MI.

Rank	November		December		January		February		March		April		May		Rank
	year	FDD	year	FDD	year	FDD	year	FDD	year	FDD	year	FDD	year	FDD	
1	1926	11.	1904	97.	1990	521.	1918	1091.	1904	1499.	1904	1534.	1904	1368.	1
2	1918	2.	1930	85.	1918	436.	1977	997.	1918	1391.	1912	1404.	1912	1048.	2
3	1907	2.	1957	50.	1904	432.	1904	958.	1920	1274.	1918	1303.	1918	1028.	3
4	1924	2.	1931	50.	1977	401.	1920	904.	1977	1213.	1920	1177.	1920	965.	4
5	1997	1.	1959	50.	2001	390.	1945	761.	1905	1150.	1905	1100.	1905	803.	5
6	1903	0.	1918	49.	1959	364.	1984	744.	1912	1148.	1917	1055.	1917	796.	6
7	1904	0.	1899	45.	1984	347.	1925	720.	1917	1105.	1978	1042.	1926	756.	7
8	1905	0.	1977	45.	1915	340.	1994	718.	1936	1073.	1900	983.	1978	709.	8
9	1906	0.	1951	45.	1925	338.	1959	704.	1963	1030.	1899	970.	1982	673.	9
10	1908	0.	1948	43.	1920	329.	1905	698.	1994	1011.	1982	956.	1936	616.	10
11	1909	0.	1939	41.	1911	324.	1912	691.	1978	963.	1977	954.	1900	603.	11
12	1910	0.	1937	38.	1986	323.	1915	686.	1945	958.	1994	948.	1996	587.	12
13	1911	0.	1912	36.	1917	315.	1963	680.	1979	954.	1926	920.	1943	587.	13
14	1912	0.	1933	36.	1910	284.	1943	670.	1982	941.	1996	912.	1923	583.	14
15	1913	0.	1950	32.	1905	281.	1917	652.	1959	913.	1916	907.	1916	569.	15
16	1914	0.	1905	31.	1964	274.	1981	644.	1910	880.	1915	898.	1907	533.	16
17	1915	0.	1941	29.	1930	266.	1982	641.	1899	857.	1923	891.	1940	502.	17
18	1916	0.	1978	29.	1943	266.	1930	630.	1902	833.	1936	886.	1899	497.	18
19	1917	0.	1926	29.	1981	266.	2001	586.	1925	832.	1963	880.	1979	482.	19
20	1919	0.	1990	28.	1996	255.	1948	583.	1943	828.	1959	866.	1994	471.	20
21	1920	0.	1925	27.	1961	254.	1936	580.	1986	827.	1934	860.	1984	435.	21
22	1921	0.	1975	25.	1945	252.	1986	579.	1948	821.	1943	830.	1937	434.	22
23	1922	0.	1956	25.	1951	250.	1978	576.	1915	805.	1984	828.	1971	430.	23
24	1923	0.	1898	22.	1952	243.	1970	574.	1907	799.	1970	817.	1977	427.	24
25	1925	0.	1944	20.	1936	239.	1961	560.	1934	790.	1979	797.	1934	425.	25
26	1927	0.	1943	20.	1902	236.	1910	547.	1923	788.	1940	788.	1901	419.	26
27	1928	0.	1968	20.	1963	236.	1990	541.	1970	772.	1925	761.	1914	418.	27
28	1929	0.	1953	18.	1927	230.	1927	536.	1996	764.	1948	758.	1972	412.	28
29	1930	0.	1938	18.	1926	225.	1971	533.	1981	749.	1901	754.	1959	401.	29
30	1931	0.	1980	18.	1938	223.	1902	529.	1929	743.	1914	718.	1970	394.	30
31	1932	0.	1979	16.	1946	223.	1996	528.	1926	734.	1971	716.	1963	389.	31
32	1933	0.	1902	16.	1899	214.	1979	524.	1901	731.	1924	702.	1915	387.	32
33	1934	0.	1906	16.	1903	200.	1938	522.	1984	718.	1902	700.	1911	367.	33
34	1935	0.	1934	16.	1934	198.	1911	520.	1900	718.	1930	695.	1944	364.	34
35	1936	0.	1960	14.	1944	193.	1976	495.	1962	716.	1911	679.	1924	356.	35
36	1937	0.	1984	11.	1931	184.	1899	491.	1903	707.	1986	678.	1930	356.	36
37	1938	0.	1923	11.	1948	180.	1903	490.	2001	703.	1907	677.	1965	353.	37
38	1939	0.	1996	11.	1898	180.	1926	481.	1990	699.	2001	666.	1902	315.	38
39	1940	0.	1972	11.	1916	178.	1991	480.	1968	698.	1937	664.	1925	286.	39
40	1941	0.	1966	9.	1935	178.	1962	461.	1930	695.	1962	664.	1908	284.	40
41	1942	0.	1946	7.	1923	178.	1935	445.	1914	688.	1972	648.	1939	236.	41
42	1943	0.	1936	7.	1978	175.	1929	430.	1971	688.	1941	646.	1928	234.	42
43	1944	0.	1903	7.	1933	173.	1922	428.	1908	680.	1908	621.	1986	229.	43
44	1945	0.	1965	7.	1900	169.	1940	425.	1916	675.	1981	619.	1989	217.	44
45	1946	0.	1952	7.	1989	167.	1907	421.	1924	668.	1965	617.	2001	202.	45
46	1947	0.	1927	5.	1994	167.	1923	421.	1935	668.	1910	580.	1962	202.	46
47	1948	0.	1908	5.	1970	166.	1968	419.	1911	655.	1990	568.	1948	185.	47
48	1949	0.	1916	5.	1971	164.	1951	409.	1946	623.	1945	563.	1988	172.	48
49	1950	0.	1961	5.	1956	164.	1957	400.	1961	623.	1974	563.	1909	171.	49
50	1951	0.	1911	5.	1907	164.	1969	398.	1940	617.	1980	551.	1980	171.	50
51	1952	0.	1919	5.	1974	158.	1985	393.	1988	612.	1988	550.	1941	169.	51
52	1953	0.	1964	4.	1939	149.	1931	382.	1974	607.	1968	547.	1913	160.	52
53	1954	0.	1913	4.	1982	148.	1964	376.	1927	601.	1939	547.	1961	157.	53
54	1955	0.	2000	4.	1909	140.	1966	373.	1938	594.	1928	547.	1956	151.	54
55	1956	0.	1945	4.	1969	140.	1924	371.	1985	590.	1929	545.	1975	146.	55
56	1957	0.	1970	4.	1962	137.	1952	364.	1922	581.	1944	542.	1910	144.	56
57	1958	0.	1920	4.	1901	131.	1946	362.	1972	578.	1960	542.	1981	140.	57
58	1959	0.	1989	4.	1991	131.	1997	362.	1991	563.	1913	538.	1906	124.	58
59	1960	0.	1994	2.	1922	122.	1965	344.	1951	558.	1906	533.	1974	117.	59
60	1961	0.	1988	2.	1937	122.	1901	344.	1942	551.	1969	522.	1993	116.	60
61	1962	0.	1973	2.	1976	119.	1939	338.	1969	547.	1989	520.	1922	115.	61
62	1963	0.	1962	2.	1979	117.	1900	338.	1989	535.	1922	502.	1903	110.	62
63	1964	0.	1987	2.	1967	110.	1956	335.	1913	531.	1956	500.	1945	108.	63
64	1965	0.	1958	0.	1999	102.	1908	333.	1965	531.	1993	494.	1990	104.	64
65	1966	0.	1963	0.	1992	98.	1974	333.	1939	524.	1947	486.	1947	104.	65
66	1967	0.	1967	0.	1955	95.	1898	329.	1966	520.	1903	472.	1929	103.	66

Table 4.11 cont. Ranked Seasonal FDD Accumulation on BOM Dates at Port Huron, MI.

Rank	November		December		January		February		March		April		May		Rank
	year	FDD	year	FDD	year	FDD	year	FDD	year	FDD	year	FDD	year	FDD	
67	1968	0.	1969	0.	1968	92.	1928	311.	1941	518.	1991	466.	1931	94.	67
68	1969	0.	1971	0.	2000	91.	1934	308.	1928	511.	1931	466.	1927	90.	68
69	1970	0.	1974	0.	1965	90.	1944	304.	1976	509.	1985	455.	1935	68.	69
70	1971	0.	1976	0.	1997	88.	1941	302.	1898	504.	1909	454.	1960	63.	70
71	1972	0.	1981	0.	1921	88.	1954	302.	1980	500.	1961	454.	1969	54.	71
72	1973	0.	1982	0.	1928	88.	1972	299.	1952	484.	1967	454.	1992	36.	72
73	1974	0.	1983	0.	1913	86.	1937	299.	1964	484.	1935	443.	1968	20.	73
74	1975	0.	1985	0.	1941	86.	1992	296.	1967	482.	1927	441.	1950	16.	74
75	1976	0.	1986	0.	1908	85.	2000	295.	1937	482.	1952	437.	1898	11.	75
76	1977	0.	1991	0.	1954	83.	1909	293.	1956	477.	1951	423.	1967	7.	76
77	1978	0.	1992	0.	2002	82.	1955	284.	1957	466.	1942	412.	1951	2.	77
78	1979	0.	1993	0.	1973	77.	1916	284.	1993	462.	1992	390.	1991	0.	78
79	1980	0.	1995	0.	1949	72.	1988	282.	1931	452.	1958	389.	1995	0.	79
80	1981	0.	1997	0.	1987	72.	1987	278.	1958	452.	1964	382.	1997	0.	80
81	1982	0.	1998	0.	1975	72.	1942	263.	1944	450.	1957	382.	1998	0.	81
82	1983	0.	1999	0.	1906	68.	1980	230.	1947	448.	1975	376.	1999	0.	82
83	1984	0.	2001	0.	1914	59.	1989	225.	1995	433.	1933	365.	2000	0.	83
84	1985	0.	2002	0.	1919	49.	1914	218.	1997	419.	1938	360.	2002	0.	84
85	1986	0.	1900	0.	1993	48.	1913	209.	1955	418.	1997	339.	1919	0.	85
86	1987	0.	1901	0.	1929	45.	1975	196.	1909	412.	1966	335.	1921	0.	86
87	1988	0.	1907	0.	1988	44.	1967	189.	1973	392.	1976	329.	1932	0.	87
88	1989	0.	1909	0.	1998	39.	1921	187.	1992	390.	1955	322.	1933	0.	88
89	1990	0.	1910	0.	1957	34.	1993	179.	1987	387.	1898	306.	1938	0.	89
90	1991	0.	1914	0.	1960	32.	1960	173.	1906	342.	1995	271.	1942	0.	90
91	1992	0.	1915	0.	1912	32.	1973	173.	1960	338.	1950	268.	1946	0.	91
92	1993	0.	1917	0.	1947	31.	1958	169.	1933	337.	1987	262.	1949	0.	92
93	1994	0.	1921	0.	1953	29.	1947	166.	1975	333.	1954	232.	1952	0.	93
94	1995	0.	1922	0.	1942	25.	1983	160.	1921	281.	1946	211.	1953	0.	94
95	1996	0.	1924	0.	1972	22.	1995	144.	2000	281.	1932	200.	1954	0.	95
96	1998	0.	1928	0.	1983	22.	1933	139.	1954	272.	1919	194.	1955	0.	96
97	1999	0.	1929	0.	1985	17.	1919	133.	1919	257.	2002	115.	1957	0.	97
98	2000	0.	1932	0.	1940	16.	1953	117.	1950	209.	1973	112.	1958	0.	98
99	2001	0.	1935	0.	1980	11.	1949	112.	1983	202.	1949	74.	1964	0.	99
100	2002	0.	1940	0.	1995	10.	2002	105.	1949	176.	1921	50.	1966	0.	100
101	1898	0.	1942	0.	1932	9.	1999	105.	2002	162.	1983	32.	1973	0.	101
102	1899	0.	1947	0.	1924	5.	1998	88.	1953	146.	1999	25.	1976	0.	102
103	1900	0.	1949	0.	1950	2.	1906	77.	1999	126.	1953	7.	1983	0.	103
104	1901	0.	1954	0.	1958	2.	1950	41.	1932	72.	2000	0.	1985	0.	104
105	1902	0.	1955	0.	1966	2.	1932	29.	1998	0.	1998	0.	1987	0.	105

Severity Index	December		January		February		March		April		May	
Upper Bound	year	FDD	year	FDD	year	FDD	year	FDD	year	FDD	year	FDD
Above Normal	1918	49.	1959	364.	1984	744.	1912	1148.	1917	1055.	1917	796.
Normal	1975	25.	1945	252.	1986	579.	1948	821.	1943	830.	1937	434.
Below Normal	1900	0.	1993	48.	1913	209.	1955	418.	1997	339.	1919	0.
Mild	1942	0.	1932	9.	1999	105.	2002	162.	1983	32.	1973	0.

Table 4.12 Ranked Seasonal FDD Accumulation on BOM Dates at Detroit, MI.

Rank	November		December		January		February		March		April		May		Rank
	year	FDD	year	FDD	year	FDD	year	FDD	year	FDD	year	FDD	year	FDD	
1	1964	32.	1904	88.	1990	434.	1918	931.	1904	1301.	1904	1267.	1904	988.	1
2	1918	4.	1930	70.	2001	403.	1904	839.	1918	1141.	1912	1188.	1912	761.	2
3	1926	2.	1951	70.	1904	385.	1984	805.	1963	1094.	1963	920.	1920	578.	3
4	1901	0.	1937	68.	1984	360.	1977	794.	1920	1026.	1899	907.	1936	538.	4
5	1902	0.	1957	61.	1959	347.	1920	756.	1936	1019.	1918	907.	1918	529.	5
6	1903	0.	1899	52.	1918	344.	1963	725.	1912	1013.	1920	848.	1978	430.	6
7	1904	0.	1959	52.	1986	330.	1959	680.	1905	970.	1936	848.	1905	425.	7
8	1905	0.	1931	49.	1910	317.	1945	668.	1977	916.	1984	839.	1940	421.	8
9	1906	0.	1948	40.	1915	310.	1912	616.	1917	860.	1978	839.	1926	407.	9
10	1907	0.	1956	32.	1925	295.	1994	614.	1959	848.	1905	799.	1963	400.	10
11	1908	0.	1977	32.	1920	279.	1925	590.	1979	837.	1959	778.	1917	398.	11
12	1909	0.	1939	31.	1911	277.	1915	576.	1994	829.	1970	770.	1934	392.	12
13	1910	0.	1918	29.	1977	275.	1905	574.	1978	815.	1900	767.	1984	359.	13
14	1911	0.	1953	25.	1951	275.	1981	569.	1899	810.	1934	752.	1899	353.	14
15	1912	0.	1978	22.	1963	268.	2001	566.	1910	799.	1940	745.	1979	302.	15
16	1913	0.	1950	22.	1917	259.	1986	565.	1945	787.	1917	745.	1943	284.	16
17	1914	0.	1925	22.	1964	254.	1970	565.	1986	787.	1901	729.	1959	279.	17
18	1915	0.	1941	20.	1961	254.	1936	556.	1970	767.	1926	675.	1900	279.	18
19	1916	0.	1905	20.	1946	250.	1943	536.	1901	765.	1979	664.	1970	265.	19
20	1917	0.	1912	18.	1952	236.	1910	533.	1984	764.	1948	653.	1901	254.	20
21	1919	0.	1898	16.	1936	234.	1961	531.	1948	736.	1915	644.	1996	227.	21
22	1920	0.	1936	14.	1945	229.	1948	517.	1902	718.	1994	642.	1923	187.	22
23	1921	0.	1943	14.	1902	227.	1917	511.	1962	686.	1996	640.	1982	153.	23
24	1922	0.	1938	14.	1930	223.	1930	506.	1982	684.	1943	594.	1907	149.	24
25	1923	0.	1965	14.	1996	219.	1940	488.	1934	668.	1962	592.	1916	148.	25
26	1924	0.	1960	14.	1981	214.	1996	475.	1943	648.	1916	592.	1971	122.	26
27	1925	0.	1906	14.	1943	214.	1899	468.	1940	641.	1923	583.	1914	108.	27
28	1927	0.	1902	13.	1905	212.	1902	455.	1915	639.	1986	571.	1965	99.	28
29	1928	0.	1926	13.	1899	211.	1982	454.	1935	635.	1982	554.	1947	97.	29
30	1929	0.	1984	11.	1935	202.	1978	450.	1981	630.	1977	544.	1948	77.	30
31	1930	0.	1966	11.	1944	194.	1962	448.	1925	623.	1971	531.	1962	67.	31
32	1931	0.	1979	11.	1926	194.	1971	446.	1996	623.	2001	508.	1994	65.	32
33	1932	0.	1944	9.	1956	191.	1927	434.	2001	616.	1902	493.	1956	56.	33
34	1933	0.	1968	9.	1938	189.	1938	428.	1903	601.	1914	493.	1911	50.	34
35	1934	0.	1916	7.	1927	187.	1935	423.	1985	595.	1965	481.	1944	43.	35
36	1935	0.	1980	7.	1898	185.	1903	421.	1900	590.	1947	477.	1915	43.	36
37	1936	0.	1933	7.	1903	176.	1911	419.	1929	589.	1981	472.	1935	41.	37
38	1937	0.	1975	5.	1900	158.	1979	414.	1907	583.	1911	468.	1924	36.	38
39	1938	0.	1958	5.	1933	153.	1951	412.	1926	581.	1956	466.	1902	34.	39
40	1939	0.	1961	5.	1962	146.	1926	407.	1923	571.	1924	455.	1986	20.	40
41	1940	0.	1920	5.	1994	142.	1976	392.	1961	565.	1925	450.	1908	7.	41
42	1941	0.	1911	5.	1970	139.	1985	388.	1971	554.	1941	430.	1973	0.	42
43	1942	0.	1997	4.	1969	137.	1946	373.	1968	547.	1910	427.	1974	0.	43
44	1943	0.	2000	3.	1916	135.	1990	370.	1908	538.	1960	423.	1975	0.	44
45	1944	0.	1990	3.	1948	131.	1957	369.	1951	536.	1935	416.	1976	0.	45
46	1945	0.	1945	2.	1939	126.	1999	368.	1988	534.	1908	410.	1977	0.	46
47	1946	0.	1970	2.	1971	124.	1956	365.	1946	524.	1985	408.	1980	0.	47
48	1947	0.	1964	2.	1934	124.	1966	353.	1914	524.	1951	400.	1981	0.	48
49	1948	0.	1972	2.	1989	123.	1969	351.	1911	511.	1930	389.	1983	0.	49
50	1949	0.	1903	2.	1931	122.	1968	349.	1924	508.	1972	378.	1985	0.	50
51	1950	0.	2001	1.	1923	122.	1922	346.	1916	497.	1944	371.	1987	0.	51
52	1951	0.	1989	1.	1999	119.	1929	340.	1956	479.	1907	362.	1988	0.	52
53	1952	0.	2002	0.	1978	117.	1997	333.	1942	466.	1969	360.	1989	0.	53
54	1953	0.	1900	0.	1901	117.	1901	331.	1898	464.	1980	360.	1990	0.	54
55	1954	0.	1901	0.	1974	113.	2000	323.	1930	461.	1913	353.	1991	0.	55
56	1955	0.	1907	0.	1967	108.	1952	320.	1966	454.	1988	352.	1992	0.	56
57	1956	0.	1908	0.	1976	101.	1924	319.	1969	452.	1961	344.	1993	0.	57
58	1957	0.	1909	0.	1991	98.	1991	311.	1938	450.	1967	333.	1995	0.	58
59	1958	0.	1910	0.	1921	94.	1898	306.	1922	445.	1952	331.	1997	0.	59
60	1959	0.	1913	0.	1947	92.	1964	301.	1947	443.	1939	328.	1998	0.	60
61	1960	0.	1914	0.	1907	92.	1907	281.	1927	439.	1903	319.	1999	0.	61
62	1961	0.	1915	0.	2000	90.	1923	279.	1958	425.	1928	311.	2000	0.	62
63	1962	0.	1917	0.	2002	90.	1988	278.	1965	423.	1906	301.	2001	0.	63
64	1963	0.	1919	0.	1968	90.	1900	274.	1967	421.	1968	295.	2002	0.	64
65	1965	0.	1921	0.	1922	88.	1965	268.	1990	409.	1945	293.	1898	0.	65
66	1966	0.	1922	0.	1940	85.	1954	257.	1957	409.	1922	293.	1903	0.	66

Table 4.12 cont. Ranked Seasonal FDD Accumulation on BOM Dates at Detroit, MI.

Rank	November		December		January		February		March		April		May		Rank
	year	FDD	year	FDD	year	FDD	year	FDD	year	FDD	year	FDD	year	FDD	
67	1967	0.	1923	0.	1982	79.	1939	256.	1913	407.	1958	290.	1906	0.	67
68	1968	0.	1924	0.	1949	77.	1955	252.	1972	403.	1929	288.	1909	0.	68
69	1969	0.	1927	0.	1955	72.	1908	241.	1939	400.	1937	270.	1910	0.	69
70	1970	0.	1928	0.	1909	70.	1931	234.	1952	400.	1964	266.	1913	0.	70
71	1971	0.	1929	0.	1954	70.	1944	232.	1974	392.	1942	265.	1919	0.	71
72	1972	0.	1932	0.	1965	68.	1928	221.	1964	391.	1957	259.	1921	0.	72
73	1973	0.	1934	0.	1997	63.	1972	211.	1941	382.	1966	257.	1922	0.	73
74	1974	0.	1935	0.	1937	61.	1987	209.	1928	364.	1950	257.	1925	0.	74
75	1975	0.	1940	0.	1913	58.	1942	205.	1980	360.	1974	252.	1927	0.	75
76	1976	0.	1942	0.	1992	52.	1974	200.	1997	355.	1955	239.	1928	0.	76
77	1977	0.	1946	0.	1988	49.	1916	196.	1955	355.	1909	232.	1929	0.	77
78	1978	0.	1947	0.	1928	49.	1941	194.	1944	344.	1999	221.	1930	0.	78
79	1979	0.	1949	0.	1908	47.	1934	185.	1999	343.	1993	217.	1931	0.	79
80	1980	0.	1952	0.	1979	41.	1947	176.	1989	316.	1898	209.	1932	0.	80
81	1981	0.	1954	0.	1914	36.	1909	176.	1993	314.	1997	193.	1933	0.	81
82	1982	0.	1955	0.	1973	36.	1967	171.	1995	306.	1989	193.	1937	0.	82
83	1983	0.	1962	0.	1998	35.	1958	167.	1976	304.	1927	189.	1938	0.	83
84	1984	0.	1963	0.	1912	29.	1992	166.	2000	302.	1954	169.	1939	0.	84
85	1985	0.	1967	0.	1957	29.	1980	153.	1991	299.	1990	153.	1941	0.	85
86	1986	0.	1969	0.	1919	27.	1921	140.	1973	290.	1938	151.	1942	0.	86
87	1987	0.	1971	0.	1987	25.	1937	131.	1987	269.	1931	146.	1945	0.	87
88	1988	0.	1973	0.	1929	23.	1914	119.	1909	259.	1933	139.	1946	0.	88
89	1989	0.	1974	0.	1953	22.	1960	113.	1960	245.	1946	88.	1949	0.	89
90	1990	0.	1976	0.	1941	18.	1913	110.	1937	239.	1932	88.	1950	0.	90
91	1991	0.	1981	0.	1960	16.	1993	106.	1954	214.	1975	83.	1951	0.	91
92	1992	0.	1982	0.	1993	16.	1973	106.	1931	211.	1992	71.	1952	0.	92
93	1993	0.	1983	0.	1906	16.	1995	102.	1933	200.	1995	60.	1953	0.	93
94	1994	0.	1985	0.	1983	14.	1949	90.	1950	193.	1991	48.	1954	0.	94
95	1995	0.	1986	0.	1942	14.	1983	90.	1921	187.	1987	37.	1955	0.	95
96	1996	0.	1987	0.	1972	7.	1989	87.	1906	184.	1976	14.	1957	0.	96
97	1997	0.	1988	0.	1985	4.	1975	77.	1992	172.	1949	13.	1958	0.	97
98	1998	0.	1991	0.	1924	2.	1933	70.	1975	140.	1983	9.	1960	0.	98
99	1999	0.	1992	0.	1995	2.	1953	67.	1919	131.	1919	2.	1961	0.	99
100	2000	0.	1993	0.	1932	2.	1998	59.	1949	128.	1998	0.	1964	0.	100
101	2001	0.	1994	0.	1950	0.	1919	56.	1953	63.	2000	0.	1966	0.	101
102	2002	0.	1995	0.	1958	0.	2002	50.	1983	58.	2002	0.	1967	0.	102
103	1898	0.	1996	0.	1966	0.	1950	38.	2002	21.	1921	0.	1968	0.	103
104	1899	0.	1998	0.	1975	0.	1932	27.	1998	0.	1953	0.	1969	0.	104
105	1900	0.	1999	0.	1980	0.	1906	2.	1932	0.	1973	0.	1972	0.	105

Severity Index	December	January	February	March	April	May
Upper Bound	year	FDD	year	FDD	year	FDD
Above Normal	1899	52.	1918	344.	1963	725.
Normal	1936	14.	1945	229.	1948	517.
Below Normal	1967	0.	1957	29.	1980	153.
Mild	1994	0.	1950	0.	1919	56.

Table 4.13 Ranked Seasonal FDD Accumulation on BOM Dates at Toledo, OH.

Rank	November		December		January		February		March		April		May		Rank
	year	FDD	year	FDD	year	FDD	year	FDD	year	FDD	year	FDD	year	FDD	
1	1926	4.	1951	86.	1990	472.	1977	1114.	1977	1330.	1978	1422.	1978	1010.	1
2	1899	0.	1904	72.	2001	442.	1918	896.	1978	1318.	1963	1103.	1904	742.	2
3	1900	0.	1957	65.	1977	419.	1984	872.	1963	1260.	1904	1073.	1982	648.	3
4	1901	0.	1899	59.	1959	396.	1963	869.	1904	1206.	1977	1035.	1963	639.	4
5	1902	0.	1959	58.	1964	389.	1904	794.	1918	1021.	1912	1008.	1912	515.	5
6	1903	0.	1972	58.	1984	385.	1945	763.	1982	1010.	1982	968.	1984	502.	6
7	1904	0.	1930	58.	1904	369.	1978	752.	1979	997.	1984	957.	1970	418.	7
8	1905	0.	1948	56.	1951	365.	1959	740.	1936	977.	1970	923.	1936	400.	8
9	1906	0.	1978	50.	1961	340.	1970	700.	1970	916.	1979	790.	1977	398.	9
10	1907	0.	1937	50.	1963	338.	1981	697.	1920	902.	1959	785.	1979	385.	10
11	1908	0.	1931	50.	1918	329.	1920	697.	1905	900.	1936	752.	1920	355.	11
12	1909	0.	1956	47.	1986	322.	1982	679.	1945	891.	1918	718.	1940	347.	12
13	1910	0.	1977	45.	1915	306.	1994	644.	1959	886.	1940	709.	1918	317.	13
14	1911	0.	1939	40.	1946	293.	1961	637.	1912	878.	1899	695.	1905	288.	14
15	1912	0.	1960	31.	1910	293.	2001	595.	1994	870.	1994	691.	1959	284.	15
16	1913	0.	1953	29.	1945	286.	1948	583.	1984	841.	1920	668.	1926	194.	16
17	1914	0.	1968	27.	1978	277.	1936	560.	1981	794.	1905	666.	1965	185.	17
18	1915	0.	1965	25.	1952	259.	1915	544.	1948	767.	1981	657.	1943	184.	18
19	1916	0.	1966	23.	1920	259.	1912	536.	1962	733.	1948	644.	1971	180.	19
20	1917	0.	1975	20.	1925	254.	1962	531.	1917	725.	1962	641.	1996	173.	20
21	1918	0.	1925	20.	1981	248.	1976	529.	1986	722.	1965	628.	1961	162.	21
22	1919	0.	1979	20.	1917	245.	1940	529.	1902	713.	1996	618.	1962	153.	22
23	1920	0.	1941	20.	1936	236.	1905	524.	1899	688.	1900	610.	1917	153.	23
24	1921	0.	1933	20.	1902	232.	1979	524.	1964	673.	1969	605.	1994	128.	24
25	1922	0.	1938	18.	1996	229.	1925	515.	1961	666.	1971	601.	1981	122.	25
26	1923	0.	1918	18.	1956	220.	1971	511.	1910	661.	1964	581.	1980	115.	26
27	1924	0.	1898	16.	1944	218.	1969	511.	1901	652.	1980	556.	1934	113.	27
28	1925	0.	1980	14.	1911	218.	1996	507.	1940	652.	1917	553.	1899	113.	28
29	1927	0.	1944	14.	1962	214.	1986	506.	1985	650.	1934	535.	1900	106.	29
30	1928	0.	1970	13.	1943	212.	1964	497.	1969	641.	1901	531.	1956	103.	30
31	1929	0.	1906	13.	1970	211.	1951	497.	1974	634.	1956	511.	1969	86.	31
32	1930	0.	1950	13.	1974	202.	1956	472.	1968	632.	2001	505.	1964	85.	32
33	1931	0.	1936	13.	1899	200.	1943	466.	1996	629.	1974	504.	1901	77.	33
34	1932	0.	1984	12.	1969	187.	1910	457.	1971	628.	1943	502.	1951	58.	34
35	1933	0.	1943	11.	1905	184.	1917	437.	1951	619.	1926	499.	1944	47.	35
36	1934	0.	1994	9.	1926	176.	1902	428.	2001	618.	1915	497.	1948	43.	36
37	1935	0.	1912	9.	1982	175.	1985	421.	1980	569.	1951	479.	1947	31.	37
38	1936	0.	1982	9.	1948	173.	1946	419.	1943	565.	1902	470.	1972	9.	38
39	1937	0.	1926	9.	1903	164.	1968	416.	1956	563.	1986	458.	1974	2.	39
40	1938	0.	1961	7.	1994	161.	1930	409.	1965	560.	1961	446.	1955	0.	40
41	1939	0.	1954	7.	1927	160.	1899	391.	1915	536.	1947	443.	1957	0.	41
42	1940	0.	1905	7.	1935	158.	1957	391.	1988	529.	1972	434.	1958	0.	42
43	1941	0.	1945	7.	1965	157.	1990	386.	1966	524.	1985	431.	1960	0.	43
44	1942	0.	1920	5.	1898	153.	1965	385.	1903	518.	1968	430.	1966	0.	44
45	1943	0.	1967	5.	1930	153.	1974	385.	1946	511.	1960	414.	1967	0.	45
46	1944	0.	2000	5.	1976	151.	1966	382.	1934	509.	1945	403.	1968	0.	46
47	1945	0.	1958	5.	1900	151.	1903	380.	1976	506.	1967	394.	1973	0.	47
48	1946	0.	1964	4.	1989	150.	1997	368.	1929	497.	1924	389.	1975	0.	48
49	1947	0.	1990	4.	1938	148.	2000	361.	1972	497.	1944	385.	1976	0.	49
50	1948	0.	1997	4.	1971	148.	1926	344.	1900	493.	1916	369.	1983	0.	50
51	1949	0.	1962	4.	1967	139.	1927	335.	1967	482.	1923	358.	1985	0.	51
52	1950	0.	1916	4.	1933	139.	1999	332.	1925	473.	1958	347.	1986	0.	52
53	1951	0.	1973	4.	1999	121.	1935	320.	1958	466.	1941	344.	1987	0.	53
54	1952	0.	1911	2.	1975	117.	1938	317.	1935	455.	1988	341.	1988	0.	54
55	1953	0.	1902	2.	1923	110.	1922	310.	1926	455.	1966	335.	1989	0.	55
56	1954	0.	1946	2.	1939	110.	1991	306.	1924	452.	1914	315.	1990	0.	56
57	1955	0.	2001	1.	1968	106.	1952	295.	1907	434.	1975	268.	1991	0.	57
58	1956	0.	1989	1.	1931	101.	1924	292.	1942	419.	1906	266.	1992	0.	58
59	1957	0.	1919	0.	2000	101.	1911	279.	1947	416.	1925	261.	1993	0.	59
60	1958	0.	1921	0.	1991	98.	1988	277.	1923	414.	1957	259.	1995	0.	60
61	1959	0.	1922	0.	1901	92.	1972	277.	1957	409.	1952	223.	1997	0.	61
62	1960	0.	1923	0.	1921	90.	1929	277.	1914	401.	1942	212.	1998	0.	62
63	1961	0.	1924	0.	2002	86.	1944	266.	1990	379.	1976	209.	1999	0.	63
64	1962	0.	1927	0.	1934	86.	1980	263.	1944	374.	1910	205.	2000	0.	64
65	1963	0.	1928	0.	1947	86.	1901	257.	1973	369.	1955	196.	2001	0.	65
66	1964	0.	1929	0.	1916	85.	1955	256.	1997	365.	1993	194.	2002	0.	66

Table 4.13 cont. Ranked Seasonal FDD Accumulation on BOM Dates at Toledo, OH.

Rank	November		December		January		February		March		April		May		Rank
	year	FDD	year	FDD	year	FDD	year	FDD	year	FDD	year	FDD	year	FDD	
67	1965	0.	1932	0.	1907	81.	1900	238.	1908	353.	1903	184.	1898	0.	67
68	1966	0.	1934	0.	1940	81.	1954	236.	1922	349.	1930	178.	1902	0.	68
69	1967	0.	1935	0.	1954	79.	1967	229.	1955	342.	1999	177.	1903	0.	69
70	1968	0.	1940	0.	1979	79.	1987	225.	1952	342.	1911	176.	1906	0.	70
71	1969	0.	1942	0.	1922	74.	1975	203.	1941	324.	1950	173.	1907	0.	71
72	1970	0.	1947	0.	1949	70.	1898	193.	1916	319.	1935	166.	1908	0.	72
73	1971	0.	1949	0.	1973	58.	1907	193.	1989	315.	1997	164.	1909	0.	73
74	1972	0.	1952	0.	1988	57.	1958	191.	1975	308.	1929	164.	1910	0.	74
75	1973	0.	1955	0.	1955	56.	1942	180.	1911	297.	1937	157.	1911	0.	75
76	1974	0.	1963	0.	1997	48.	1973	178.	1938	292.	1922	153.	1913	0.	76
77	1975	0.	1969	0.	1928	45.	1923	173.	2000	292.	1928	151.	1914	0.	77
78	1976	0.	1971	0.	1992	39.	1928	171.	1898	290.	1939	148.	1915	0.	78
79	1977	0.	1974	0.	1998	38.	1939	166.	1995	288.	1913	144.	1916	0.	79
80	1978	0.	1976	0.	1914	34.	1992	158.	1999	283.	1989	142.	1919	0.	80
81	1979	0.	1981	0.	1913	34.	1983	158.	1930	281.	1907	128.	1921	0.	81
82	1980	0.	1983	0.	1987	34.	1941	157.	1991	279.	1908	113.	1922	0.	82
83	1981	0.	1985	0.	1953	23.	1931	146.	1993	278.	1954	77.	1923	0.	83
84	1982	0.	1986	0.	1960	23.	1908	135.	1927	275.	1990	72.	1924	0.	84
85	1983	0.	1987	0.	1983	23.	1947	135.	1987	274.	1946	61.	1925	0.	85
86	1984	0.	1988	0.	1909	23.	1960	124.	1928	257.	1932	56.	1927	0.	86
87	1985	0.	1991	0.	1980	22.	1995	109.	1939	257.	1987	41.	1928	0.	87
88	1986	0.	1992	0.	1957	20.	1921	97.	1913	257.	1983	29.	1929	0.	88
89	1987	0.	1993	0.	1919	20.	1989	95.	1960	254.	1991	28.	1930	0.	89
90	1988	0.	1995	0.	1912	14.	1934	94.	1983	200.	1931	9.	1931	0.	90
91	1989	0.	1996	0.	1972	9.	1993	83.	1906	176.	1992	7.	1932	0.	91
92	1990	0.	1998	0.	1942	9.	1916	81.	1937	158.	1995	4.	1933	0.	92
93	1991	0.	1999	0.	1993	8.	1909	70.	1950	155.	1933	2.	1935	0.	93
94	1992	0.	2002	0.	1906	5.	1937	68.	1954	142.	1919	2.	1937	0.	94
95	1993	0.	1900	0.	1995	4.	1998	56.	1992	126.	1953	0.	1938	0.	95
96	1994	0.	1901	0.	1908	2.	1949	52.	1921	99.	1973	0.	1939	0.	96
97	1995	0.	1903	0.	1958	0.	1953	45.	1933	95.	1998	0.	1941	0.	97
98	1996	0.	1907	0.	1966	0.	1914	34.	1931	92.	2000	0.	1942	0.	98
99	1997	0.	1908	0.	1985	0.	1913	32.	1909	88.	2002	0.	1945	0.	99
100	1998	0.	1909	0.	1924	0.	1933	29.	1953	49.	1898	0.	1946	0.	100
101	1999	0.	1910	0.	1929	0.	1950	25.	1949	43.	1909	0.	1949	0.	101
102	2000	0.	1913	0.	1932	0.	1932	23.	1919	29.	1921	0.	1950	0.	102
103	2001	0.	1914	0.	1937	0.	1919	2.	2002	16.	1927	0.	1952	0.	103
104	2002	0.	1915	0.	1941	0.	1906	2.	1998	0.	1938	0.	1953	0.	104
105	1898	0.	1917	0.	1950	0.	2002	0.	1932	0.	1949	0.	1954	0.	105

Severity Index	December	January	February	March	April	May
Upper Bound	year	FDD	year	FDD	year	FDD
Above Normal	1972	58.	1984	385.	1945	763.
Normal	1979	20.	1917	245.	1940	529.
Below Normal	1987	0.	1983	23.	1947	135.
Mild	1910	0.	1929	0.	1950	25.

Table 4.14 Ranked Seasonal FDD Accumulation on BOM Dates at Cleveland, OH.

Rank	November		December		January		February		March		April		May		Rank	
	year	FDD	year	FDD	year	FDD	year	FDD	year	FDD	year	FDD	year	FDD		
1	1926		2.	1951	68.	1990	398.	1977	961.	1977	1159.	1904	979.	1904	720.	1
2	1899		0.	1904	63.	1959	320.	1918	832.	1963	1094.	1912	918.	1978	446.	2
3	1900		0.	1930	50.	1904	320.	1904	704.	1904	1089.	1978	896.	1912	437.	3
4	1901		0.	1959	49.	1964	311.	1963	688.	1918	938.	1963	875.	1963	382.	4
5	1902		0.	1957	45.	1977	310.	1984	667.	1978	907.	1977	826.	1918	270.	5
6	1903		0.	1948	43.	1918	308.	1961	628.	1912	826.	1984	687.	1905	252.	6
7	1904		0.	1899	41.	1984	308.	1945	612.	1920	815.	1918	686.	1920	250.	7
8	1905		0.	1977	38.	1961	304.	1920	598.	1905	799.	1970	639.	1940	247.	8
9	1906		0.	1931	36.	2001	296.	1994	569.	1936	769.	1905	610.	1977	245.	9
10	1907		0.	1937	32.	1951	284.	1959	567.	1994	698.	1940	583.	1984	233.	10
11	1908		0.	1956	32.	1986	281.	1970	558.	1970	693.	1899	580.	1971	205.	11
12	1909		0.	1953	25.	1910	277.	1981	551.	1979	691.	1920	567.	1926	169.	12
13	1910		0.	1978	22.	1963	254.	1912	509.	1945	689.	1900	544.	1936	167.	13
14	1911		0.	1966	14.	1946	241.	1978	481.	1910	671.	1971	540.	1982	130.	14
15	1912		0.	1925	14.	1915	232.	1982	470.	1902	666.	1996	539.	1970	94.	15
16	1913		0.	1980	13.	1996	208.	1936	448.	1982	662.	1994	538.	1917	86.	16
17	1914		0.	1939	13.	1917	207.	1940	448.	1917	653.	1936	536.	1900	85.	17
18	1915		0.	1968	11.	1945	203.	1905	446.	1959	650.	1959	511.	1996	85.	18
19	1916		0.	1912	11.	1911	200.	1910	443.	1968	643.	1982	506.	1961	50.	19
20	1917		0.	1938	11.	1925	194.	1948	437.	1961	639.	1962	499.	1899	40.	20
21	1918		0.	1906	11.	1920	194.	1986	432.	1899	610.	1917	488.	1980	40.	21
22	1919		0.	1898	11.	1936	191.	1996	417.	1984	596.	1968	472.	1962	36.	22
23	1920		0.	1965	11.	1952	185.	1915	416.	1964	571.	1934	464.	1901	7.	23
24	1921		0.	1960	11.	1981	182.	1976	410.	1981	567.	1980	461.	1902	7.	24
25	1922		0.	1961	7.	1944	182.	1971	410.	1962	554.	1926	448.	1934	5.	25
26	1923		0.	1926	7.	1902	175.	2001	409.	1940	549.	1981	445.	1935	0.	26
27	1924		0.	1954	7.	1943	169.	1925	398.	1986	544.	1915	443.	1937	0.	27
28	1925		0.	1918	7.	1926	157.	1962	385.	1985	542.	1902	428.	1938	0.	28
29	1927		0.	1943	7.	1994	154.	1964	382.	1948	535.	1964	414.	1939	0.	29
30	1928		0.	1984	6.	1970	151.	1985	379.	1971	526.	1924	394.	1941	0.	30
31	1929		0.	1916	5.	1905	149.	1968	369.	1901	526.	1961	394.	1942	0.	31
32	1930		0.	1936	5.	1956	146.	1902	356.	1996	520.	1901	382.	1943	0.	32
33	1931		0.	1902	5.	1899	137.	1917	355.	1980	509.	1960	378.	1944	0.	33
34	1932		0.	2000	4.	1962	133.	1966	349.	1966	499.	1979	355.	1945	0.	34
35	1933		0.	1905	4.	1900	131.	1951	347.	1934	470.	1969	347.	1946	0.	35
36	1934		0.	1945	4.	1903	126.	1979	328.	1907	446.	1965	326.	1947	0.	36
37	1935		0.	1990	3.	1927	124.	1946	319.	1924	439.	1916	324.	1948	0.	37
38	1936		0.	1958	2.	1898	119.	1899	311.	1900	439.	1948	322.	1949	0.	38
39	1937		0.	1911	2.	1978	112.	1903	311.	1969	418.	2001	320.	1950	0.	39
40	1938		0.	1944	2.	1999	107.	1957	302.	1929	414.	1966	320.	1951	0.	40
41	1939		0.	1973	2.	2002	97.	1926	302.	1926	410.	1941	295.	1952	0.	41
42	1940		0.	1974	0.	1969	95.	1969	301.	1903	410.	1947	295.	1953	0.	42
43	1941		0.	1975	0.	1982	92.	1927	290.	1951	407.	1985	293.	1954	0.	43
44	1942		0.	1976	0.	1968	90.	1956	281.	2001	399.	1914	288.	1955	0.	44
45	1943		0.	1979	0.	1967	88.	1990	264.	1915	394.	1910	283.	1956	0.	45
46	1944		0.	1981	0.	1976	86.	1997	260.	1988	380.	1923	274.	1957	0.	46
47	1945		0.	1982	0.	2000	84.	2000	257.	1942	378.	1986	269.	1958	0.	47
48	1946		0.	1983	0.	1921	83.	1922	250.	1958	365.	1958	259.	1959	0.	48
49	1947		0.	1985	0.	1971	83.	1924	248.	1923	360.	1906	254.	1960	0.	49
50	1948		0.	1986	0.	1923	70.	1911	245.	1946	358.	1972	254.	1964	0.	50
51	1949		0.	1987	0.	1938	68.	1999	229.	1914	349.	1951	218.	1965	0.	51
52	1950		0.	1988	0.	1934	68.	1930	229.	1925	346.	1944	200.	1966	0.	52
53	1951		0.	1989	0.	1948	67.	1929	221.	1972	338.	1988	191.	1967	0.	53
54	1952		0.	1991	0.	1940	61.	1980	216.	1908	326.	1911	178.	1968	0.	54
55	1953		0.	1992	0.	1954	61.	1955	209.	1965	317.	1956	178.	1969	0.	55
56	1954		0.	1993	0.	1933	61.	1965	202.	1956	301.	1945	175.	1972	0.	56
57	1955		0.	1994	0.	1935	58.	1991	198.	1976	295.	1907	164.	1973	0.	57
58	1956		0.	1995	0.	1931	58.	1988	197.	1947	290.	1942	158.	1974	0.	58
59	1957		0.	1996	0.	1901	56.	1900	196.	1957	275.	1993	132.	1975	0.	59
60	1958		0.	1997	0.	1989	56.	1907	191.	1916	263.	1928	131.	1976	0.	60
61	1959		0.	1998	0.	1991	54.	1952	182.	1935	259.	1925	130.	1979	0.	61
62	1960		0.	1999	0.	1922	52.	1944	178.	1922	256.	1908	113.	1981	0.	62
63	1961		0.	2001	0.	1947	50.	1901	176.	1944	252.	1957	88.	1983	0.	63
64	1962		0.	2002	0.	1930	50.	1954	173.	1911	250.	1967	86.	1985	0.	64
65	1963		0.	1900	0.	1939	50.	1987	163.	1941	248.	1950	77.	1986	0.	65
66	1964		0.	1901	0.	1907	45.	1938	162.	1967	245.	1913	74.	1987	0.	66

Table 4.14 cont. Ranked Seasonal FDD Accumulation on BOM Dates at Cleveland, OH.

Rank	November		December		January		February		March		April		May		Rank
	year	FDD	year	FDD	year	FDD	year	FDD	year	FDD	year	FDD	year	FDD	
67	1965	0.	1903	0.	1928	41.	1935	162.	1927	243.	1937	58.	1988	0.	67
68	1966	0.	1907	0.	1916	40.	1942	160.	1955	241.	1929	56.	1989	0.	68
69	1967	0.	1908	0.	1949	40.	1972	157.	1898	239.	1903	52.	1990	0.	69
70	1968	0.	1909	0.	1998	30.	1928	151.	1928	236.	1932	50.	1991	0.	70
71	1969	0.	1910	0.	1914	29.	1992	141.	1995	215.	1999	47.	1992	0.	71
72	1970	0.	1913	0.	1988	26.	1898	131.	1913	212.	1922	45.	1993	0.	72
73	1971	0.	1914	0.	1957	23.	1923	128.	1990	209.	1955	40.	1994	0.	73
74	1972	0.	1915	0.	1992	22.	1908	124.	1993	201.	1952	34.	1995	0.	74
75	1973	0.	1917	0.	1987	20.	1958	119.	1987	196.	1975	31.	1997	0.	75
76	1974	0.	1919	0.	1919	18.	1939	110.	1989	180.	1943	9.	1998	0.	76
77	1975	0.	1920	0.	1979	16.	1941	97.	1952	178.	1987	9.	1999	0.	77
78	1976	0.	1921	0.	1975	14.	1921	85.	1973	178.	1919	4.	2000	0.	78
79	1977	0.	1922	0.	1980	14.	1983	77.	1997	167.	1992	2.	2001	0.	79
80	1978	0.	1923	0.	1942	14.	1967	74.	2000	160.	1954	2.	2002	0.	80
81	1979	0.	1924	0.	1960	13.	1995	72.	1906	153.	1931	0.	1898	0.	81
82	1980	0.	1927	0.	1913	13.	1931	70.	1999	151.	1933	0.	1903	0.	82
83	1981	0.	1928	0.	1953	13.	1975	67.	1991	140.	1935	0.	1906	0.	83
84	1982	0.	1929	0.	1983	13.	1934	63.	1974	131.	1938	0.	1907	0.	84
85	1983	0.	1932	0.	1912	11.	1960	58.	1960	130.	1939	0.	1908	0.	85
86	1984	0.	1933	0.	1974	11.	1973	56.	1943	126.	1946	0.	1909	0.	86
87	1985	0.	1934	0.	1909	7.	1949	50.	1938	110.	1949	0.	1910	0.	87
88	1986	0.	1935	0.	1972	5.	1909	49.	1975	110.	1953	0.	1911	0.	88
89	1987	0.	1940	0.	1965	5.	1943	41.	1950	110.	1973	0.	1913	0.	89
90	1988	0.	1941	0.	1929	5.	1993	31.	1939	110.	1974	0.	1914	0.	90
91	1989	0.	1942	0.	1997	3.	1947	29.	1992	99.	1976	0.	1915	0.	91
92	1990	0.	1946	0.	1906	2.	1932	22.	1921	81.	1983	0.	1916	0.	92
93	1991	0.	1947	0.	1993	2.	1998	20.	1930	76.	1989	0.	1919	0.	93
94	1992	0.	1949	0.	1973	0.	1914	16.	1937	52.	1990	0.	1921	0.	94
95	1993	0.	1950	0.	1985	0.	1953	14.	1954	52.	1991	0.	1922	0.	95
96	1994	0.	1952	0.	1995	0.	1974	13.	1931	45.	1995	0.	1923	0.	96
97	1995	0.	1955	0.	1908	0.	1933	11.	1933	41.	1997	0.	1924	0.	97
98	1996	0.	1962	0.	1924	0.	1950	11.	1909	38.	1998	0.	1925	0.	98
99	1997	0.	1963	0.	1932	0.	1937	7.	1983	25.	2000	0.	1927	0.	99
100	1998	0.	1964	0.	1937	0.	1919	5.	1919	23.	2002	0.	1928	0.	100
101	1999	0.	1967	0.	1941	0.	1906	0.	2002	19.	1898	0.	1929	0.	101
102	2000	0.	1969	0.	1950	0.	1913	0.	1949	7.	1909	0.	1930	0.	102
103	2001	0.	1970	0.	1955	0.	1916	0.	1953	2.	1921	0.	1931	0.	103
104	2002	0.	1971	0.	1958	0.	1989	0.	1998	0.	1927	0.	1932	0.	104
105	1898	0.	1972	0.	1966	0.	2002	0.	1932	0.	1930	0.	1933	0.	105

Severity Index	December		January		February		March		April		May	
Upper Bound	year	FDD	year	FDD	year	FDD	year	FDD	year	FDD	year	FDD
Above Normal	1948	43.	1918	308.	1961	628.	1912	826.	1984	687.	1905	252.
Normal	1898	11.	1936	191.	1996	417.	1984	596.	1968	472.	1962	36.
Below Normal	1932	0.	1912	11.	1960	58.	1960	130.	1939	0.	1908	0.
Mild	1967	0.	1941	0.	1906	0.	2002	19.	1898	0.	1929	0.

Table 4.15 Ranked Seasonal FDD Accumulation on BOM Dates at Erie, PA.

Rank	November		December		January		February		March		April		May		Rank	
	year	FDD	year	FDD	year	FDD	year	FDD	year	FDD	year	FDD	year	FDD		
1	1918		2.	1904	72.	1990	328.	1977	891.	1904	1089.	1978	1134.	1978	842.	1
2	1899		0.	1951	54.	1959	308.	1918	815.	1977	1087.	1970	1031.	1904	774.	2
3	1900		0.	1930	50.	1904	293.	1904	693.	1978	1006.	1904	1017.	1970	639.	3
4	1901		0.	1937	49.	1918	288.	1970	668.	1963	995.	1912	932.	1912	535.	4
5	1902		0.	1957	41.	1977	286.	1920	628.	1918	986.	1979	826.	1979	520.	5
6	1903		0.	1931	36.	2001	260.	1963	608.	1979	967.	1977	824.	1918	409.	6
7	1904		0.	1959	36.	1984	253.	1994	589.	1970	918.	1963	819.	1940	401.	7
8	1905		0.	1977	34.	1961	250.	1984	583.	1920	893.	1918	788.	1920	380.	8
9	1906		0.	1939	25.	1963	230.	1959	580.	1912	823.	1994	736.	1963	374.	9
10	1907		0.	1899	23.	1910	229.	1981	574.	1905	817.	1959	725.	1977	351.	10
11	1908		0.	1948	22.	1951	220.	1961	536.	1936	814.	1940	700.	1905	344.	11
12	1909		0.	1918	20.	1986	217.	1978	517.	1994	797.	1920	693.	1971	340.	12
13	1910		0.	1956	18.	1915	211.	1945	511.	1959	738.	1905	691.	1936	326.	13
14	1911		0.	1953	18.	1964	209.	1912	502.	1982	698.	1934	666.	1926	317.	14
15	1912		0.	1968	16.	1920	203.	1905	477.	1968	670.	1996	642.	1982	308.	15
16	1913		0.	1978	14.	1970	196.	1940	468.	1917	666.	1936	637.	1934	275.	16
17	1914		0.	1925	14.	1981	191.	1979	464.	1902	650.	1982	623.	1959	268.	17
18	1915		0.	1975	14.	1936	191.	1982	457.	1934	628.	1971	596.	1996	261.	18
19	1916		0.	1902	14.	1911	187.	1936	450.	1981	623.	1981	590.	1972	259.	19
20	1917		0.	1980	11.	1925	182.	1976	437.	1940	616.	1900	580.	1994	222.	20
21	1919		0.	1905	11.	1905	176.	1996	428.	1910	614.	1984	574.	1917	187.	21
22	1920		0.	1898	9.	1946	175.	1971	401.	1961	610.	1899	572.	1980	185.	22
23	1921		0.	1966	9.	1996	175.	1925	401.	1945	608.	1926	551.	1965	171.	23
24	1922		0.	1990	9.	1917	164.	1910	385.	1996	589.	1917	542.	1900	171.	24
25	1923		0.	1960	9.	1944	157.	1915	376.	1899	585.	1962	540.	1961	142.	25
26	1924		0.	2000	8.	1927	144.	2001	375.	1962	580.	1968	533.	1981	128.	26
27	1925		0.	1906	7.	1956	142.	1962	369.	1971	533.	1980	524.	1984	115.	27
28	1926		0.	1979	7.	1994	139.	1986	352.	1901	513.	1972	500.	1962	106.	28
29	1927		0.	1926	7.	1902	139.	1985	350.	1986	505.	1915	493.	1956	104.	29
30	1928		0.	1965	7.	1952	137.	1948	346.	1985	495.	1916	463.	1901	103.	30
31	1929		0.	1961	7.	1978	137.	1902	346.	1980	491.	1965	459.	1899	101.	31
32	1930		0.	1938	7.	1926	135.	1968	340.	1907	488.	1901	448.	1914	85.	32
33	1931		0.	1912	5.	1903	124.	1956	338.	1966	482.	1961	443.	1916	77.	33
34	1932		0.	1967	5.	1900	122.	1917	333.	1984	481.	1956	439.	1924	54.	34
35	1933		0.	1973	5.	1945	122.	1966	329.	1964	479.	1958	436.	1943	50.	35
36	1934		0.	1916	4.	1962	119.	1927	311.	1958	479.	1924	430.	1907	49.	36
37	1935		0.	1987	2.	1930	115.	1957	310.	1926	473.	1902	428.	1968	45.	37
38	1936		0.	1946	2.	1943	113.	1943	308.	1923	459.	1969	425.	1923	34.	38
39	1937		0.	1984	2.	1898	101.	1930	293.	1948	454.	1960	418.	1902	16.	39
40	1938		0.	1936	2.	1899	99.	1903	293.	1924	452.	1923	412.	1975	7.	40
41	1939		0.	1970	2.	1938	97.	1951	292.	1972	430.	1914	412.	1960	0.	41
42	1940		0.	1969	0.	1935	94.	1926	286.	1956	428.	1941	409.	1964	0.	42
43	1941		0.	1971	0.	1976	92.	1899	277.	1914	425.	2001	402.	1966	0.	43
44	1942		0.	1972	0.	1971	92.	1964	270.	2001	423.	1964	338.	1967	0.	44
45	1943		0.	1974	0.	1969	88.	1938	257.	1969	419.	1985	334.	1969	0.	45
46	1944		0.	1976	0.	1999	85.	1922	256.	1929	419.	1943	315.	1973	0.	46
47	1945		0.	1981	0.	1931	85.	1997	248.	1900	419.	1966	310.	1974	0.	47
48	1946		0.	1982	0.	2002	84.	1935	247.	1976	416.	1948	295.	1976	0.	48
49	1947		0.	1983	0.	1934	83.	1969	243.	1935	414.	1906	286.	1983	0.	49
50	1948		0.	1985	0.	1923	79.	1999	235.	1903	410.	1907	275.	1985	0.	50
51	1949		0.	1986	0.	1979	77.	2000	231.	1943	410.	1910	274.	1986	0.	51
52	1950		0.	1988	0.	1968	76.	1965	229.	1915	405.	1944	270.	1987	0.	52
53	1951		0.	1989	0.	1974	74.	1911	223.	1942	392.	1993	263.	1988	0.	53
54	1952		0.	1991	0.	1921	68.	1955	221.	1951	391.	1911	261.	1989	0.	54
55	1953		0.	1992	0.	1940	67.	1946	216.	1965	380.	1928	259.	1990	0.	55
56	1954		0.	1993	0.	2000	65.	1929	216.	1908	378.	1986	257.	1991	0.	56
57	1955		0.	1994	0.	1939	65.	1954	211.	1925	378.	1947	257.	1992	0.	57
58	1956		0.	1995	0.	1933	63.	1924	203.	1988	354.	1951	252.	1993	0.	58
59	1957		0.	1996	0.	1982	59.	1900	196.	1974	346.	1957	248.	1995	0.	59
60	1958		0.	1997	0.	1922	59.	1990	193.	1957	344.	1974	243.	1997	0.	60
61	1959		0.	1998	0.	1967	52.	1931	185.	1916	322.	1942	223.	1998	0.	61
62	1960		0.	1999	0.	1907	47.	1907	185.	1922	317.	1908	220.	1999	0.	62
63	1961		0.	2001	0.	1901	47.	1958	182.	1955	315.	1930	214.	2000	0.	63
64	1962		0.	2002	0.	1975	47.	1923	182.	1927	315.	1955	211.	2001	0.	64
65	1963		0.	1900	0.	1954	47.	1944	176.	1946	313.	1975	209.	2002	0.	65
66	1964		0.	1901	0.	1916	43.	1952	173.	1941	310.	1976	203.	1898	0.	66

Table 4.15 cont. Ranked Seasonal FDD Accumulation on BOM Dates at Erie, PA.

Rank	November		December		January		February		March		April		May		Rank
	year	FDD	year	FDD	year	FDD	year	FDD	year	FDD	year	FDD	year	FDD	
67	1965	0.	1903	0.	1948	43.	1980	169.	1973	306.	1988	202.	1903	0.	67
68	1966	0.	1907	0.	1928	38.	1972	167.	1911	292.	1925	182.	1906	0.	68
69	1967	0.	1908	0.	1992	36.	1928	164.	1928	290.	1950	176.	1908	0.	69
70	1968	0.	1909	0.	1914	31.	1988	156.	1995	287.	1935	175.	1909	0.	70
71	1969	0.	1910	0.	1991	30.	1942	153.	1944	274.	1931	171.	1910	0.	71
72	1970	0.	1911	0.	1949	29.	1991	151.	1938	274.	1967	169.	1911	0.	72
73	1971	0.	1913	0.	1989	28.	1901	146.	1993	262.	1952	164.	1913	0.	73
74	1972	0.	1914	0.	1957	27.	1987	140.	1987	259.	1999	161.	1915	0.	74
75	1973	0.	1915	0.	1988	24.	1992	138.	1967	248.	1922	155.	1919	0.	75
76	1974	0.	1917	0.	1998	23.	1974	137.	1930	248.	1945	149.	1921	0.	76
77	1975	0.	1919	0.	1955	23.	1939	133.	1947	247.	1954	140.	1922	0.	77
78	1976	0.	1920	0.	1947	22.	1898	133.	1997	236.	1929	106.	1925	0.	78
79	1977	0.	1921	0.	1919	20.	1908	130.	1952	230.	1997	104.	1927	0.	79
80	1978	0.	1922	0.	1960	18.	1941	130.	1931	230.	1939	104.	1928	0.	80
81	1979	0.	1923	0.	1953	18.	1934	124.	1898	223.	1937	103.	1929	0.	81
82	1980	0.	1924	0.	1983	18.	1975	112.	1999	221.	1995	102.	1930	0.	82
83	1981	0.	1927	0.	1912	11.	1921	86.	1989	220.	1903	101.	1931	0.	83
84	1982	0.	1928	0.	1909	9.	1960	86.	1913	218.	1987	100.	1932	0.	84
85	1983	0.	1929	0.	1997	8.	1983	81.	1975	212.	1989	99.	1933	0.	85
86	1984	0.	1932	0.	1972	7.	1973	74.	2000	211.	1992	91.	1935	0.	86
87	1985	0.	1933	0.	1942	7.	1995	67.	1960	189.	1927	86.	1937	0.	87
88	1986	0.	1934	0.	1929	5.	1914	61.	1939	176.	1909	63.	1938	0.	88
89	1987	0.	1935	0.	1908	4.	1993	46.	1906	169.	1932	61.	1939	0.	89
90	1988	0.	1940	0.	1987	3.	1949	38.	1990	169.	1913	43.	1941	0.	90
91	1989	0.	1941	0.	1993	3.	1909	34.	1954	166.	1933	34.	1942	0.	91
92	1990	0.	1942	0.	1906	2.	1998	32.	1992	165.	1983	11.	1944	0.	92
93	1991	0.	1943	0.	1950	2.	1967	29.	1950	104.	1919	7.	1945	0.	93
94	1992	0.	1944	0.	1980	0.	1919	23.	1991	104.	1938	4.	1946	0.	94
95	1993	0.	1945	0.	1985	0.	1932	14.	1921	104.	1990	0.	1947	0.	95
96	1994	0.	1947	0.	1995	0.	1950	13.	1983	95.	1991	0.	1948	0.	96
97	1995	0.	1949	0.	1913	0.	1933	11.	1933	83.	1998	0.	1949	0.	97
98	1996	0.	1950	0.	1924	0.	1953	9.	1909	61.	2000	0.	1950	0.	98
99	1997	0.	1952	0.	1932	0.	1937	9.	1937	50.	2002	0.	1951	0.	99
100	1998	0.	1954	0.	1937	0.	1947	7.	1919	47.	1898	0.	1952	0.	100
101	1999	0.	1955	0.	1941	0.	1906	0.	1949	18.	1921	0.	1953	0.	101
102	2000	0.	1958	0.	1958	0.	1913	0.	2002	16.	1946	0.	1954	0.	102
103	2001	0.	1962	0.	1965	0.	1916	0.	1953	5.	1949	0.	1955	0.	103
104	2002	0.	1963	0.	1966	0.	1989	0.	1998	0.	1953	0.	1957	0.	104
105	1898	0.	1964	0.	1973	0.	2002	0.	1932	0.	1973	0.	1958	0.	105

Severity Index	December		January		February		March		April		May	
Upper Bound	year	FDD	year	FDD	year	FDD	year	FDD	year	FDD	year	FDD
Above Normal	1931	36.	2001	260.	1963	608.	1979	967.	1977	824.	1918	409.
Normal	1898	9.	1946	175.	1971	401.	1961	610.	1899	572.	1980	185.
Below Normal	1929	0.	1997	8.	1983	81.	1975	212.	1989	99.	1933	0.
Mild	1955	0.	1941	0.	1906	0.	1949	18.	1921	0.	1953	0.

Table 4.16 Ranked Seasonal FDD Accumulation on BOM Dates at Buffalo, NY.

Rank	November		December		January		February		March		April		May		Rank
	year	FDD	year	FDD	year	FDD	year	FDD	year	FDD	year	FDD	year	FDD	
1	1907	2.	1937	74.	1990	471.	1918	947.	1918	1199.	1918	1120.	1904	900.	1
2	1926	2.	1904	67.	1918	391.	1977	907.	1920	1132.	1904	1100.	1918	812.	2
3	1918	2.	1930	52.	1961	349.	1920	781.	1977	1114.	1978	1093.	1978	779.	3
4	1901	0.	1957	49.	1959	347.	1961	769.	1904	1111.	1912	1037.	1920	756.	4
5	1902	0.	1959	43.	1977	344.	1945	695.	1963	1055.	1905	1022.	1926	752.	5
6	1903	0.	1918	43.	2001	324.	1963	686.	1905	1042.	1934	1019.	1905	751.	6
7	1904	0.	1939	40.	1984	301.	1984	679.	1978	976.	1920	1004.	1912	727.	7
8	1905	0.	1990	38.	1963	281.	1970	677.	1979	927.	1963	950.	1934	697.	8
9	1906	0.	1975	38.	1946	279.	1904	671.	1961	923.	1970	941.	1940	652.	9
10	1908	0.	1948	36.	1904	279.	1959	650.	1934	913.	1959	902.	1943	625.	10
11	1909	0.	1973	36.	1964	272.	1905	632.	1936	905.	1940	895.	1961	623.	11
12	1910	0.	1977	32.	1920	270.	1994	626.	1912	895.	1977	873.	1936	603.	12
13	1911	0.	1899	31.	1911	268.	1981	625.	1970	880.	1961	857.	1963	585.	13
14	1912	0.	1931	29.	1905	259.	1982	572.	1959	869.	1926	842.	1917	545.	14
15	1913	0.	1951	27.	1996	249.	1948	565.	1994	865.	1996	832.	1982	517.	15
16	1914	0.	1946	27.	1915	243.	1996	554.	1945	857.	1936	812.	1996	507.	16
17	1915	0.	1902	27.	1936	238.	1925	547.	1917	832.	1982	805.	1970	495.	17
18	1916	0.	1926	22.	1956	232.	1943	545.	1982	817.	1994	799.	1959	482.	18
19	1917	0.	1950	22.	1986	231.	1971	536.	1968	783.	1917	797.	1923	470.	19
20	1919	0.	1925	20.	1970	230.	1912	535.	1996	762.	1943	770.	1971	457.	20
21	1920	0.	1978	20.	1925	229.	1940	531.	1948	761.	1900	751.	1907	439.	21
22	1921	0.	1953	20.	1981	229.	1976	531.	1940	738.	1984	751.	1977	423.	22
23	1922	0.	1956	20.	1943	214.	1978	513.	1962	725.	1971	749.	1900	407.	23
24	1923	0.	1979	18.	1944	212.	1936	513.	1943	718.	1979	734.	1914	365.	24
25	1924	0.	1905	18.	1927	211.	1927	482.	1907	713.	1923	724.	1979	365.	25
26	1925	0.	1968	18.	1910	209.	1956	468.	1926	682.	1962	711.	1916	344.	26
27	1927	0.	2001	18.	1945	205.	2001	458.	1971	679.	1948	677.	1962	326.	27
28	1928	0.	1965	14.	1934	202.	1968	454.	1910	666.	1968	670.	1965	317.	28
29	1929	0.	1941	14.	1917	202.	1915	452.	1935	659.	1916	668.	1994	299.	29
30	1930	0.	1960	14.	1930	196.	1979	446.	1986	649.	1941	648.	1972	299.	30
31	1931	0.	1972	13.	1926	191.	1917	437.	1923	641.	1969	646.	1924	293.	31
32	1932	0.	1898	13.	1971	191.	1986	431.	1901	635.	1915	644.	1956	292.	32
33	1933	0.	1944	13.	1969	187.	1935	428.	1902	623.	1960	626.	1930	284.	33
34	1934	0.	1934	11.	1951	180.	1962	425.	1984	618.	1956	623.	1984	277.	34
35	1935	0.	1906	11.	1952	180.	1930	423.	1899	617.	1899	621.	1928	265.	35
36	1936	0.	1933	11.	1935	173.	1946	410.	1946	617.	1907	617.	1935	257.	36
37	1937	0.	1966	11.	1903	169.	1990	409.	1969	610.	1901	616.	1911	248.	37
38	1938	0.	1984	9.	1907	162.	1969	405.	1964	605.	1914	614.	1944	247.	38
39	1939	0.	1987	9.	1974	155.	1926	400.	1981	599.	1965	592.	1939	239.	39
40	1940	0.	1997	8.	1978	153.	1957	398.	1966	583.	1911	572.	1901	203.	40
41	1941	0.	1952	7.	1994	150.	1911	389.	1942	581.	1972	572.	1969	203.	41
42	1942	0.	1980	7.	1948	149.	1910	389.	1925	581.	1924	567.	1947	196.	42
43	1943	0.	2000	7.	1976	149.	1966	385.	1974	580.	2001	566.	1915	196.	43
44	1944	0.	1961	7.	1898	140.	1922	378.	1956	578.	1930	565.	1908	173.	44
45	1945	0.	1943	5.	1916	135.	1985	366.	2001	561.	1974	551.	1948	173.	45
46	1946	0.	1923	5.	1938	133.	1938	365.	1927	554.	1964	544.	1966	162.	46
47	1947	0.	1970	5.	1962	131.	2000	365.	1914	554.	1981	542.	1899	160.	47
48	1948	0.	1938	4.	1902	124.	1907	364.	1900	547.	1967	536.	1941	158.	48
49	1949	0.	1964	4.	1923	122.	1964	356.	1985	545.	1947	536.	1968	155.	49
50	1950	0.	1962	2.	1900	121.	1965	353.	1911	542.	1935	527.	1960	135.	50
51	1951	0.	1945	2.	1999	115.	1999	351.	1924	540.	1980	520.	1974	124.	51
52	1952	0.	1908	2.	1931	113.	1903	351.	1958	540.	1944	518.	1967	113.	52
53	1953	0.	1916	2.	1947	113.	1902	347.	1976	538.	1966	500.	1950	101.	53
54	1954	0.	1901	0.	1967	112.	1934	340.	1929	538.	1928	491.	1980	97.	54
55	1955	0.	1903	0.	1982	112.	1955	328.	1965	527.	1986	481.	1964	97.	55
56	1956	0.	1907	0.	1899	110.	1923	322.	1916	515.	1945	475.	1927	95.	56
57	1957	0.	1909	0.	1922	104.	1954	320.	1972	515.	1925	464.	1981	86.	57
58	1958	0.	1910	0.	1955	104.	1931	313.	1980	515.	1958	463.	1925	83.	58
59	1959	0.	1911	0.	1940	103.	1899	311.	1922	513.	1942	455.	2001	71.	59
60	1960	0.	1912	0.	1992	95.	1974	308.	1915	511.	1939	450.	1931	41.	60
61	1961	0.	1913	0.	2000	95.	1951	290.	1930	506.	1985	440.	1922	29.	61
62	1962	0.	1914	0.	1965	92.	1900	288.	1967	502.	1993	439.	1986	14.	62
63	1963	0.	1915	0.	1979	90.	1952	288.	1903	493.	1931	436.	1906	13.	63
64	1964	0.	1917	0.	1989	90.	1944	284.	1990	491.	1908	436.	1942	11.	64
65	1965	0.	1919	0.	1939	88.	1929	270.	1908	472.	1910	428.	1909	9.	65
66	1966	0.	1920	0.	2002	84.	1942	270.	1947	472.	1927	423.	1975	7.	66

Table 4.16 cont. Ranked Seasonal FDD Accumulation on BOM Dates at Buffalo, NY.

Rank	November		December		January		February		March		April		May		Rank
	year	FDD	year	FDD	year	FDD	year	FDD	year	FDD	year	FDD	year	FDD	
67	1967	0.	1921	0.	1933	83.	1939	266.	1941	470.	1922	418.	1902	5.	67
68	1968	0.	1922	0.	1909	79.	1997	261.	1973	468.	1902	401.	1991	0.	68
69	1969	0.	1924	0.	1968	76.	1898	257.	1938	464.	1955	389.	1992	0.	69
70	1970	0.	1927	0.	1949	74.	1928	250.	1944	459.	1999	379.	1993	0.	70
71	1971	0.	1928	0.	1973	74.	1992	248.	1931	452.	1976	376.	1995	0.	71
72	1972	0.	1929	0.	1928	72.	1960	243.	1955	445.	1992	358.	1997	0.	72
73	1973	0.	1932	0.	1901	72.	1901	239.	1928	443.	1929	349.	1998	0.	73
74	1974	0.	1935	0.	1921	70.	1941	236.	1988	432.	1906	347.	1999	0.	74
75	1975	0.	1936	0.	1960	70.	1924	234.	1957	432.	1950	338.	2000	0.	75
76	1976	0.	1940	0.	1954	54.	1991	232.	1993	422.	1952	326.	2002	0.	76
77	1977	0.	1942	0.	1997	54.	1972	225.	1951	418.	1951	317.	1898	0.	77
78	1978	0.	1947	0.	1991	49.	1958	214.	1939	398.	1990	314.	1903	0.	78
79	1979	0.	1949	0.	1975	47.	1973	212.	2000	398.	1957	313.	1910	0.	79
80	1980	0.	1954	0.	1988	46.	1980	200.	1898	387.	1989	310.	1913	0.	80
81	1981	0.	1955	0.	1953	45.	1988	190.	1960	382.	1909	302.	1919	0.	81
82	1982	0.	1958	0.	1957	41.	1908	187.	1999	374.	1988	297.	1921	0.	82
83	1983	0.	1963	0.	1998	39.	1987	187.	1952	373.	1938	284.	1929	0.	83
84	1984	0.	1967	0.	1914	36.	1909	184.	1987	371.	1954	265.	1932	0.	84
85	1985	0.	1969	0.	1919	29.	1967	182.	1989	363.	1997	263.	1933	0.	85
86	1986	0.	1971	0.	1942	29.	1947	178.	1995	362.	1937	263.	1937	0.	86
87	1987	0.	1974	0.	1912	27.	1983	173.	1992	355.	1946	234.	1938	0.	87
88	1988	0.	1976	0.	1972	22.	1921	160.	1997	293.	1975	227.	1945	0.	88
89	1989	0.	1981	0.	1932	20.	1916	137.	1954	292.	1987	206.	1946	0.	89
90	1990	0.	1982	0.	1937	18.	1914	131.	1913	274.	1903	200.	1949	0.	90
91	1991	0.	1983	0.	1983	16.	1993	121.	1909	250.	1913	187.	1951	0.	91
92	1992	0.	1985	0.	1995	13.	1975	108.	1983	243.	1933	182.	1952	0.	92
93	1993	0.	1986	0.	1929	13.	1949	97.	1921	238.	1995	167.	1953	0.	93
94	1994	0.	1988	0.	1908	13.	1998	94.	1991	238.	1932	157.	1954	0.	94
95	1995	0.	1989	0.	1993	13.	1989	92.	1950	221.	1973	149.	1955	0.	95
96	1996	0.	1991	0.	1950	11.	1995	79.	1906	194.	2000	146.	1957	0.	96
97	1997	0.	1992	0.	1980	7.	2002	72.	1975	189.	1898	106.	1958	0.	97
98	1998	0.	1993	0.	1906	4.	1953	67.	1919	151.	1983	97.	1973	0.	98
99	1999	0.	1994	0.	1987	1.	1919	61.	1933	148.	1991	62.	1976	0.	99
100	2000	0.	1995	0.	1958	0.	1937	36.	1937	131.	1949	52.	1983	0.	100
101	2001	0.	1996	0.	1966	0.	1932	20.	1949	104.	1919	43.	1985	0.	101
102	2002	0.	1998	0.	1985	0.	1950	20.	1953	104.	2002	12.	1987	0.	102
103	1898	0.	1999	0.	1913	0.	1933	18.	2002	97.	1921	0.	1988	0.	103
104	1899	0.	2002	0.	1924	0.	1906	13.	1932	47.	1953	0.	1989	0.	104
105	1900	0.	1900	0.	1941	0.	1913	0.	1998	30.	1998	0.	1990	0.	105

Severity Index	December		January		February		March		April		May	
Upper Bound	year	FDD	year	FDD	year	FDD	year	FDD	year	FDD	year	FDD
Above Normal	1918	43.	2001	324.	1963	686.	1905	1042.	1934	1019.	1905	751.
Normal	1953	20.	1981	229.	1976	531.	1940	738.	1984	751.	1977	423.
Below Normal	1969	0.	1919	29.	1967	182.	1989	363.	1997	263.	1933	0.
Mild	1996	0.	1966	0.	1932	20.	1949	104.	1919	43.	1985	0.

Table 4.17 Ranked Seasonal FDD Accumulation on BOM Dates at Rochester, NY.

Rank	November		December		January		February		March		April		May		Rank
	year	FDD	year	FDD	year	FDD	year	FDD	year	FDD	year	FDD	year	FDD	
1	1994	1.	1904	83.	1990	498.	1918	943.	1904	1193.	1904	1206.	1904	956.	1
2	1899	0.	1937	76.	1918	407.	1977	801.	1918	1175.	1918	1066.	1918	673.	2
3	1900	0.	1990	50.	1959	369.	1945	796.	1920	1058.	1959	1006.	1920	625.	3
4	1901	0.	1902	50.	1904	335.	1920	761.	1963	1051.	1994	996.	1912	621.	4
5	1902	0.	1918	50.	1964	322.	1981	754.	1905	1021.	1912	981.	1905	616.	5
6	1903	0.	1930	47.	1961	306.	1904	740.	1994	1015.	1905	961.	1971	601.	6
7	1904	0.	1939	43.	1911	299.	1994	723.	1945	988.	1963	938.	1978	587.	7
8	1905	0.	1957	43.	2001	293.	1961	698.	1977	986.	1978	934.	1940	574.	8
9	1906	0.	1959	40.	1946	292.	1959	682.	1959	949.	1920	932.	1959	571.	9
10	1907	0.	1899	34.	1977	290.	1963	657.	1979	940.	1970	920.	1943	567.	10
11	1908	0.	1948	34.	1905	281.	1970	650.	1936	889.	1940	889.	1963	515.	11
12	1909	0.	1975	32.	1945	275.	1905	641.	1970	882.	1934	889.	1994	513.	12
13	1910	0.	1931	32.	1920	268.	1971	621.	1934	873.	1971	873.	1934	504.	13
14	1911	0.	1973	31.	1963	261.	1948	617.	1982	866.	1941	826.	1956	486.	14
15	1912	0.	1977	27.	1956	259.	1984	615.	1948	864.	1982	821.	1982	484.	15
16	1913	0.	1905	27.	1981	248.	1982	612.	1912	862.	1948	799.	1961	464.	16
17	1914	0.	1950	27.	1944	243.	1943	599.	1978	862.	1960	794.	1926	457.	17
18	1915	0.	1972	25.	1943	243.	1976	540.	1961	826.	1956	790.	1970	428.	18
19	1916	0.	1941	25.	1915	241.	1956	536.	1917	801.	1943	763.	1936	427.	19
20	1917	0.	1956	22.	1986	240.	1940	531.	1968	779.	1996	761.	1917	419.	20
21	1918	0.	1997	22.	1984	240.	1925	517.	1971	765.	1901	761.	1996	410.	21
22	1919	0.	1944	18.	1936	239.	1912	513.	1943	756.	1961	754.	1944	400.	22
23	1920	0.	1951	16.	1971	232.	1936	508.	1981	745.	1923	747.	1923	396.	23
24	1921	0.	1968	16.	1996	224.	1996	501.	1907	745.	1977	745.	1965	385.	24
25	1922	0.	1925	16.	1925	223.	1946	470.	1940	745.	1917	743.	1979	378.	25
26	1923	0.	1960	16.	1927	218.	1935	464.	1901	734.	1979	738.	1914	360.	26
27	1924	0.	2000	15.	1970	216.	1986	459.	1902	720.	1900	734.	1901	337.	27
28	1925	0.	1898	14.	1910	209.	1927	455.	1962	713.	1936	725.	1907	335.	28
29	1926	0.	1926	14.	1917	200.	1968	454.	1946	711.	1984	723.	1941	295.	29
30	1927	0.	1952	14.	1948	196.	1902	450.	1996	702.	1926	684.	1960	295.	30
31	1928	0.	1953	14.	1935	194.	2001	446.	1956	686.	1981	668.	1948	290.	31
32	1929	0.	1966	14.	1934	194.	1990	444.	1923	682.	1962	666.	1977	270.	32
33	1930	0.	1933	13.	1903	193.	1957	441.	1986	676.	1965	662.	1900	265.	33
34	1931	0.	1979	13.	1952	193.	1915	437.	1910	675.	1916	659.	1984	257.	34
35	1932	0.	1906	13.	1951	191.	1964	437.	1935	675.	1914	657.	1962	257.	35
36	1933	0.	1965	11.	1930	189.	1911	437.	1964	668.	1968	657.	1916	245.	36
37	1934	0.	1978	11.	1902	182.	1917	430.	1980	648.	1944	646.	1972	243.	37
38	1935	0.	1946	11.	1907	182.	1979	428.	1899	630.	1899	637.	1911	236.	38
39	1936	0.	2001	10.	1926	166.	1922	421.	1914	619.	1993	635.	1947	203.	39
40	1937	0.	1987	10.	1994	166.	1978	419.	1941	616.	1980	635.	1981	187.	40
41	1938	0.	1943	9.	1969	160.	1962	414.	1958	607.	1945	623.	1924	176.	41
42	1939	0.	1962	7.	1976	160.	1965	407.	1942	592.	1911	607.	1993	175.	42
43	1940	0.	1984	7.	1899	157.	1907	405.	1993	589.	2001	595.	1980	162.	43
44	1941	0.	1980	5.	1898	140.	1955	401.	1911	587.	1964	594.	1899	144.	44
45	1942	0.	1961	5.	1978	139.	1910	400.	1965	583.	1915	592.	1964	139.	45
46	1943	0.	1934	4.	1955	135.	1903	392.	1984	575.	1907	583.	1968	133.	46
47	1944	0.	1916	4.	1962	133.	1999	389.	1955	574.	1947	576.	1939	124.	47
48	1945	0.	1996	4.	1947	133.	2000	387.	1944	572.	1958	556.	1935	124.	48
49	1946	0.	1994	3.	1900	130.	1969	374.	1926	563.	1972	549.	1950	106.	49
50	1947	0.	1945	2.	1916	128.	1930	371.	2001	554.	1969	544.	1989	106.	50
51	1948	0.	1964	2.	1922	128.	1923	371.	1969	544.	1955	542.	1992	101.	51
52	1949	0.	1982	2.	1923	124.	1899	360.	1924	531.	1924	520.	2001	91.	52
53	1950	0.	1912	2.	1901	124.	1954	355.	1988	531.	1974	495.	1930	88.	53
54	1951	0.	1936	2.	1938	122.	1941	347.	1900	531.	1935	495.	1958	81.	54
55	1952	0.	1938	2.	1999	120.	1944	346.	1990	530.	1902	493.	1969	77.	55
56	1953	0.	1913	2.	1982	119.	1938	346.	1974	527.	1942	482.	1945	76.	56
57	1954	0.	1908	2.	1992	114.	1901	337.	1922	527.	1986	479.	1902	65.	57
58	1955	0.	1998	1.	1931	113.	1926	335.	1908	518.	1992	479.	1908	54.	58
59	1956	0.	1920	0.	1989	113.	1951	333.	1947	515.	1999	437.	1999	37.	59
60	1957	0.	1921	0.	1940	112.	1985	333.	1925	513.	1930	430.	1975	29.	60
61	1958	0.	1922	0.	1974	108.	1934	331.	1915	513.	1957	427.	1988	27.	61
62	1959	0.	1923	0.	1979	101.	1952	326.	1903	506.	1939	427.	1928	22.	62
63	1960	0.	1924	0.	2000	96.	1966	322.	1966	504.	1988	423.	1915	11.	63
64	1961	0.	1927	0.	1960	94.	1960	322.	1976	504.	1908	421.	1986	11.	64
65	1962	0.	1928	0.	1949	92.	1942	313.	1957	500.	1989	419.	1954	0.	65
66	1963	0.	1929	0.	1939	88.	1992	300.	1951	499.	1967	398.	1955	0.	66

Table 4.17 cont. Ranked Seasonal FDD Accumulation on BOM Dates at Rochester, NY.

Rank	November		December		January		February		March		April		May		Rank
	year	FDD	year	FDD	year	FDD	year	FDD	year	FDD	year	FDD	year	FDD	
67	1964	0.	1932	0.	1965	86.	1931	293.	1960	495.	1951	394.	1957	0.	67
68	1965	0.	1935	0.	1909	86.	1980	290.	1972	495.	1952	385.	1966	0.	68
69	1966	0.	1940	0.	1967	83.	1997	282.	1985	493.	1910	382.	1967	0.	69
70	1967	0.	1942	0.	1921	83.	1898	275.	1927	484.	1922	378.	1973	0.	70
71	1968	0.	1947	0.	1942	77.	1939	274.	1916	479.	1950	371.	1974	0.	71
72	1969	0.	1949	0.	1928	76.	1900	272.	1929	454.	1946	362.	1976	0.	72
73	1970	0.	1954	0.	1968	74.	1991	267.	1987	448.	1928	362.	1983	0.	73
74	1971	0.	1955	0.	1993	72.	1988	261.	1989	441.	1966	362.	1985	0.	74
75	1972	0.	1958	0.	2002	68.	1974	259.	1992	430.	1985	356.	1987	0.	75
76	1973	0.	1963	0.	1941	65.	1958	254.	1930	425.	1990	352.	1990	0.	76
77	1974	0.	1967	0.	1988	62.	1972	245.	1952	425.	1954	351.	1991	0.	77
78	1975	0.	1969	0.	1954	61.	1929	245.	2000	421.	1925	347.	1995	0.	78
79	1976	0.	1970	0.	1997	59.	1993	227.	1999	419.	1976	344.	1997	0.	79
80	1977	0.	1971	0.	1972	59.	1987	225.	1938	416.	1906	322.	1998	0.	80
81	1978	0.	1974	0.	1914	54.	1947	223.	1967	412.	1931	311.	2000	0.	81
82	1979	0.	1976	0.	1991	50.	1928	209.	1939	407.	1987	303.	2002	0.	82
83	1980	0.	1981	0.	1975	50.	1914	209.	1898	403.	1997	293.	1898	0.	83
84	1981	0.	1983	0.	1957	49.	1924	209.	1931	401.	1909	290.	1903	0.	84
85	1982	0.	1985	0.	1953	47.	1908	207.	1973	383.	1927	275.	1906	0.	85
86	1983	0.	1986	0.	1933	47.	1909	185.	1928	365.	1975	247.	1909	0.	86
87	1984	0.	1988	0.	1998	43.	1921	171.	1954	353.	1937	221.	1910	0.	87
88	1985	0.	1989	0.	1980	41.	1989	155.	1997	314.	1903	184.	1913	0.	88
89	1986	0.	1991	0.	1950	34.	1983	153.	1913	290.	1929	180.	1919	0.	89
90	1987	0.	1992	0.	1919	34.	1949	146.	1995	286.	1913	158.	1921	0.	90
91	1988	0.	1993	0.	1912	32.	1975	131.	1991	284.	1938	153.	1922	0.	91
92	1989	0.	1995	0.	1932	31.	1967	113.	1909	265.	1991	134.	1925	0.	92
93	1990	0.	1999	0.	1987	14.	1973	110.	1950	238.	2000	134.	1927	0.	93
94	1991	0.	2002	0.	1995	12.	1916	108.	1983	234.	1932	130.	1929	0.	94
95	1992	0.	1900	0.	1929	11.	1998	98.	1975	232.	1949	119.	1931	0.	95
96	1993	0.	1901	0.	1983	9.	1953	90.	1921	223.	1933	90.	1932	0.	96
97	1995	0.	1903	0.	1908	7.	1919	67.	1906	189.	1995	82.	1933	0.	97
98	1996	0.	1907	0.	1937	5.	1995	51.	1949	185.	1983	74.	1937	0.	98
99	1997	0.	1909	0.	1906	2.	2002	31.	1919	144.	1898	72.	1938	0.	99
100	1998	0.	1910	0.	1966	0.	1937	25.	1953	139.	1973	58.	1942	0.	100
101	1999	0.	1911	0.	1973	0.	1950	23.	1933	110.	1919	34.	1946	0.	101
102	2000	0.	1914	0.	1985	0.	1932	13.	1937	110.	1953	0.	1949	0.	102
103	2001	0.	1915	0.	1913	0.	1933	11.	1998	75.	1998	0.	1951	0.	103
104	2002	0.	1917	0.	1924	0.	1906	2.	1932	56.	2002	0.	1952	0.	104
105	1898	0.	1919	0.	1958	0.	1913	0.	2002	44.	1921	0.	1953	0.	105

Severity Index	December		January		February		March		April		May	
Upper Bound	year	FDD	year	FDD	year	FDD	year	FDD	year	FDD	year	FDD
Above Normal	1930	47.	1961	306.	1904	740.	1994	1015.	1905	961.	1971	601.
Normal	1944	18.	1936	239.	1912	513.	1943	756.	1961	754.	1944	400.
Below Normal	1985	0.	1953	47.	1908	207.	1973	383.	1927	275.	1906	0.
Mild	1911	0.	1973	0.	1950	23.	1933	110.	1919	34.	1946	0.

Table 4.18 Ranked Seasonal FDD Accumulation on BOM Dates at Oswego, NY.

Rank	November		December		January		February		March		April		May		Rank	
	year	FDD	year	FDD	year	FDD	year	FDD	year	FDD	year	FDD	year	FDD		
1	1926		2.	1904	86.	1990	509.	1918	1039.	1918	1352.	1904	1373.	1904	1154.	1
2	1899		0.	1937	68.	1918	475.	1920	866.	1904	1301.	1918	1355.	1918	1040.	2
3	1900		0.	1918	45.	1964	355.	1904	832.	1920	1183.	1905	1233.	1905	968.	3
4	1901		0.	1902	43.	1905	353.	1981	815.	1905	1145.	1934	1139.	1920	902.	4
5	1902		0.	1939	43.	1959	349.	1977	779.	1934	1076.	1920	1139.	1934	817.	5
6	1903		0.	1930	40.	1904	349.	1994	745.	1994	1050.	1912	1094.	1912	805.	6
7	1904		0.	1931	38.	1911	322.	1970	742.	1977	988.	1994	1055.	1978	794.	7
8	1905		0.	1905	34.	1981	319.	1905	738.	1970	972.	1978	1049.	1923	767.	8
9	1906		0.	1990	33.	1920	308.	1945	671.	1936	965.	1923	1040.	1940	767.	9
10	1907		0.	1934	32.	1956	288.	1925	655.	1978	934.	1970	1015.	1926	697.	10
11	1908		0.	1979	31.	1977	284.	1935	632.	1912	913.	1940	1003.	1907	625.	11
12	1909		0.	1957	27.	2001	272.	1959	626.	1923	909.	1959	923.	1943	617.	12
13	1910		0.	1933	27.	1936	268.	1961	614.	1979	896.	1926	853.	1970	603.	13
14	1911		0.	1975	27.	1925	266.	1976	612.	1959	893.	1917	851.	1917	598.	14
15	1912		0.	1926	25.	1934	265.	1984	610.	1907	889.	1936	839.	1994	578.	15
16	1913		0.	1941	23.	1935	263.	1943	607.	1935	886.	1901	830.	1971	576.	16
17	1914		0.	1959	23.	1927	261.	1971	603.	1948	851.	1971	830.	1936	569.	17
18	1915		0.	1948	23.	1903	259.	1940	590.	1917	850.	1996	822.	1914	567.	18
19	1916		0.	1978	22.	1915	257.	1948	578.	1940	844.	1914	821.	1959	538.	19
20	1917		0.	1950	20.	1961	245.	1936	565.	1964	832.	1948	814.	1956	533.	20
21	1918		0.	1977	18.	1943	245.	1964	565.	1963	830.	1907	814.	1965	499.	21
22	1919		0.	1968	16.	1944	243.	1996	564.	1968	823.	1911	806.	1911	495.	22
23	1920		0.	1925	13.	1984	238.	1982	562.	1945	819.	1916	803.	1996	494.	23
24	1921		0.	1899	13.	1970	238.	1912	554.	1981	806.	1900	801.	1916	479.	24
25	1922		0.	1944	11.	1946	238.	1927	554.	1943	778.	1935	792.	1935	473.	25
26	1923		0.	1956	11.	1996	233.	1956	554.	1996	774.	1977	790.	1901	472.	26
27	1924		0.	1906	11.	1971	229.	1922	547.	1901	770.	1956	787.	1900	450.	27
28	1925		0.	1946	11.	1907	225.	1923	529.	1982	761.	1964	785.	1961	446.	28
29	1927		0.	1997	10.	1963	221.	1978	527.	1971	758.	1899	778.	1944	441.	29
30	1928		0.	2000	10.	1910	207.	1903	524.	1914	752.	1943	776.	1972	437.	30
31	1929		0.	1973	9.	1986	205.	1911	517.	1902	751.	1941	760.	1963	425.	31
32	1930		0.	1996	9.	1930	200.	1963	506.	1961	745.	1963	756.	1964	416.	32
33	1931		0.	1987	7.	1945	194.	1907	500.	1911	727.	1968	754.	1979	389.	33
34	1932		0.	1960	7.	1917	193.	1990	491.	1910	722.	1981	734.	1982	385.	34
35	1933		0.	1953	7.	1976	184.	1968	488.	1922	711.	1982	727.	1899	369.	35
36	1934		0.	1898	7.	1902	184.	1902	482.	1925	711.	1979	724.	1948	365.	36
37	1935		0.	1943	4.	1948	184.	1934	479.	1899	702.	1984	718.	1977	356.	37
38	1936		0.	1965	4.	1922	180.	1917	470.	1946	686.	1961	709.	1939	335.	38
39	1937		0.	1994	3.	1952	171.	1915	466.	1926	682.	1965	702.	1924	333.	39
40	1938		0.	1980	2.	1951	171.	1986	455.	1956	679.	1915	695.	1968	319.	40
41	1939		0.	1908	2.	1969	169.	1957	436.	1986	677.	1944	671.	1908	308.	41
42	1940		0.	1962	2.	1978	169.	1910	428.	1903	675.	1972	659.	1984	304.	42
43	1941		0.	1936	2.	1923	167.	1946	423.	1976	650.	1922	646.	1981	290.	43
44	1942		0.	1984	2.	1989	162.	1930	416.	1927	643.	1969	634.	1941	283.	44
45	1943		0.	1907	2.	1926	162.	2001	412.	1942	632.	1993	618.	1922	275.	45
46	1944		0.	1966	2.	1994	156.	1979	403.	1908	628.	1924	612.	1930	272.	46
47	1945		0.	1952	2.	1901	151.	1931	400.	1974	614.	1925	601.	1925	254.	47
48	1946		0.	1969	2.	1931	149.	1965	400.	1965	610.	1908	598.	1928	230.	48
49	1947		0.	1970	2.	1898	140.	1901	398.	1924	596.	1974	592.	1915	229.	49
50	1948		0.	1912	2.	1974	139.	1899	398.	1915	596.	1939	592.	1947	227.	50
51	1949		0.	1972	2.	1899	137.	1938	387.	1962	594.	1960	590.	1969	218.	51
52	1950		0.	1942	2.	1940	131.	1926	376.	1941	589.	1902	585.	1962	196.	52
53	1951		0.	1945	2.	1909	130.	1969	374.	1969	587.	1980	572.	1993	196.	53
54	1952		0.	2001	1.	1947	122.	1944	373.	1984	580.	1930	569.	1902	196.	54
55	1953		0.	1909	0.	1938	122.	1985	369.	1980	578.	1962	554.	1909	180.	55
56	1954		0.	1910	0.	1916	119.	1898	367.	1990	575.	1947	554.	1980	176.	56
57	1955		0.	1911	0.	1900	115.	1955	367.	1944	572.	2001	518.	1960	175.	57
58	1956		0.	1913	0.	1939	101.	1941	358.	1931	571.	1955	511.	1989	169.	58
59	1957		0.	1914	0.	1992	101.	1999	355.	1916	569.	1910	509.	1927	164.	59
60	1958		0.	1915	0.	1979	99.	1942	353.	1930	565.	1928	504.	1992	153.	60
61	1959		0.	1916	0.	1999	97.	1939	340.	1900	556.	1942	499.	1906	144.	61
62	1960		0.	1917	0.	1942	97.	1974	338.	1993	555.	1992	497.	1950	133.	62
63	1961		0.	1919	0.	1955	97.	1954	338.	1972	547.	1927	497.	1975	121.	63
64	1962		0.	1920	0.	1960	95.	2000	329.	1958	535.	1989	495.	1974	106.	64
65	1963		0.	1921	0.	1962	94.	1962	319.	1947	527.	1976	495.	1931	99.	65
66	1964		0.	1922	0.	1982	92.	1997	318.	2001	521.	1931	493.	1903	81.	66

Table 4.18 cont. Ranked Seasonal FDD Accumulation on BOM Dates at Oswego, NY.

Rank	November		December		January		February		March		April		May		Rank
	year	FDD	year	FDD	year	FDD	year	FDD	year	FDD	year	FDD	year	FDD	
67	1965	0.	1923	0.	1921	86.	1992	317.	1985	518.	1945	484.	1955	68.	67
68	1966	0.	1924	0.	1949	86.	1966	313.	1898	518.	1986	482.	1976	58.	68
69	1967	0.	1927	0.	1937	85.	1914	311.	1955	513.	1906	482.	1966	56.	69
70	1968	0.	1928	0.	1967	85.	1952	308.	1938	506.	1958	468.	1958	50.	70
71	1969	0.	1929	0.	2000	80.	1951	302.	1939	502.	1909	464.	1910	49.	71
72	1970	0.	1932	0.	1973	79.	1991	291.	1989	501.	1985	419.	1946	43.	72
73	1971	0.	1935	0.	1933	77.	1900	286.	1988	499.	1903	416.	1942	40.	73
74	1972	0.	1938	0.	1965	76.	1960	284.	1973	495.	1988	412.	2001	38.	74
75	1973	0.	1940	0.	1928	74.	1909	283.	1957	493.	1990	409.	1988	23.	75
76	1974	0.	1947	0.	1941	67.	1988	279.	1929	484.	1957	401.	1986	13.	76
77	1975	0.	1949	0.	1968	67.	1947	257.	1987	476.	1950	389.	1983	0.	77
78	1976	0.	1951	0.	1997	61.	1921	256.	1966	475.	1946	376.	1985	0.	78
79	1977	0.	1954	0.	1988	54.	1958	250.	1951	464.	1952	373.	1987	0.	79
80	1978	0.	1955	0.	1914	54.	1972	247.	1928	457.	1999	367.	1990	0.	80
81	1979	0.	1958	0.	1953	52.	1929	247.	1992	449.	1951	365.	1991	0.	81
82	1980	0.	1961	0.	2002	51.	1987	240.	1909	410.	1997	351.	1995	0.	82
83	1981	0.	1963	0.	1998	50.	1908	236.	1952	407.	1966	349.	1997	0.	83
84	1982	0.	1964	0.	1975	47.	1989	235.	1960	403.	1938	335.	1998	0.	84
85	1983	0.	1967	0.	1919	47.	1980	229.	1999	386.	1975	331.	1999	0.	85
86	1984	0.	1971	0.	1932	47.	1924	227.	2000	372.	1967	329.	2000	0.	86
87	1985	0.	1974	0.	1993	47.	1928	221.	1997	370.	1987	307.	2002	0.	87
88	1986	0.	1976	0.	1991	46.	1983	212.	1921	362.	1937	299.	1898	0.	88
89	1987	0.	1981	0.	1972	45.	1993	206.	1995	358.	1929	293.	1913	0.	89
90	1988	0.	1982	0.	1957	43.	1973	205.	1913	346.	1954	257.	1919	0.	90
91	1989	0.	1983	0.	1906	40.	1916	182.	1967	335.	1913	238.	1921	0.	91
92	1990	0.	1985	0.	1912	32.	1949	171.	1991	320.	1898	230.	1929	0.	92
93	1991	0.	1986	0.	1954	29.	1975	151.	1906	319.	1919	221.	1932	0.	93
94	1992	0.	1988	0.	1995	28.	1919	149.	1954	313.	1995	204.	1933	0.	94
95	1993	0.	1989	0.	1950	25.	1998	117.	1983	311.	1973	203.	1937	0.	95
96	1994	0.	1991	0.	1980	23.	1953	88.	1975	286.	1932	198.	1938	0.	96
97	1995	0.	1992	0.	1983	18.	1906	81.	1919	266.	1991	182.	1945	0.	97
98	1996	0.	1993	0.	1929	11.	1937	79.	1950	259.	1983	182.	1949	0.	98
99	1997	0.	1995	0.	1924	11.	1995	76.	1949	212.	1949	128.	1951	0.	99
100	1998	0.	1998	0.	1913	7.	1967	74.	1937	171.	1933	124.	1952	0.	100
101	1999	0.	1999	0.	1908	7.	1950	36.	1953	155.	2000	96.	1953	0.	101
102	2000	0.	2002	0.	1987	4.	1933	18.	1933	122.	1921	95.	1954	0.	102
103	2001	0.	1900	0.	1958	0.	1932	11.	1998	107.	1953	18.	1957	0.	103
104	2002	0.	1901	0.	1966	0.	1913	9.	1932	104.	2002	0.	1967	0.	104
105	1898	0.	1903	0.	1985	0.	2002	1.	2002	9.	1998	0.	1973	0.	105

Severity Index	December		January		February		March		April		May	
Upper Bound	year	FDD	year	FDD	year	FDD	year	FDD	year	FDD	year	FDD
Above Normal	1930	40.	1904	349.	1994	745.	1994	1050.	1912	1094.	1912	805.
Normal	1968	16.	1944	243.	1996	564.	1968	823.	1911	806.	1911	495.
Below Normal	1967	0.	1919	47.	1980	229.	1999	386.	1975	331.	1999	0.
Mild	1999	0.	1908	7.	1950	36.	1953	155.	2000	96.	1953	0.