

White Paper Concerning Evaporation and Evapotranspiration Values to use in WinSLAMM

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This white paper presents evaporation and evapotranspiration (ET) data for many US locations, from NOAA sources. These data are used in WinSLAMM to calculate water losses due to evaporation from standing water (such as from long-term evaporation at wet detention ponds or short-term evaporation from intermittent ponded water in biofilters). Evapotranspiration is also used to account for some water losses from biofilters due to plant respiration removing soil water from the root zone. Monthly values of evaporation and ET are entered on the forms where these are available as “outlets.” This white paper and attachments include pan evaporation and ETo (evapotranspiration potential) values from many locations throughout the US. The basic ETo values need to be adjusted according to the microenvironment. WinSLAMM further uses these values to calculate the ET losses according to the plants used in the biofilter. The pan evaporation values need to be adjusted according to the type of water body. This white paper also discusses these adjustments. It is anticipated that standard sets of evaporation and ET can eventually be entered on the WinSLAMM tools menu alongside the monthly water temperature values so these would not need to be entered directly on the control forms.

Sources of ET Data

The following discussions and data for ET are summarized from the following report: Pitt, R., L. Talebi, R. Bean, and S. Clark, *Stormwater Non-Potable Beneficial Uses and Effects on Urban Infrastructure*, Water Environment Research Foundation, Report No. INFR3SG09, Alexandria, VA, November 2011, 224 pgs. The data included in this white paper should be sufficient for use in calculating ET water losses from biofilters/bioretention stormwater controls. The WERF report noted above should be consulted for additional background and alternative ET data sources.

Most of the ET values included here were obtained from historic records collected by the Remote Automated Weather Stations (RAWS). The available climate data (including daily ET_o values) cover all 50 states, and covers a large portion of the geographic area of the U.S. The archive currently houses historic data for more than 2,200 RAWS units across the U.S. Appendix A includes many maps of state groupings showing the RAWS monitoring locations. Appendix B lists the monthly ET values for these locations.

There are also several state and regional systems that provide additional ET rates. One extensive state-wide example is the California Irrigation Management Information System (CIMIS). The data stations are

not limited to traditional agricultural areas, also including some locations in urban zones. The following CIMIS map shows the 18 regions covering the entire state of California. Appendix B also includes monthly average ET rates for many locations in these 18 regions.

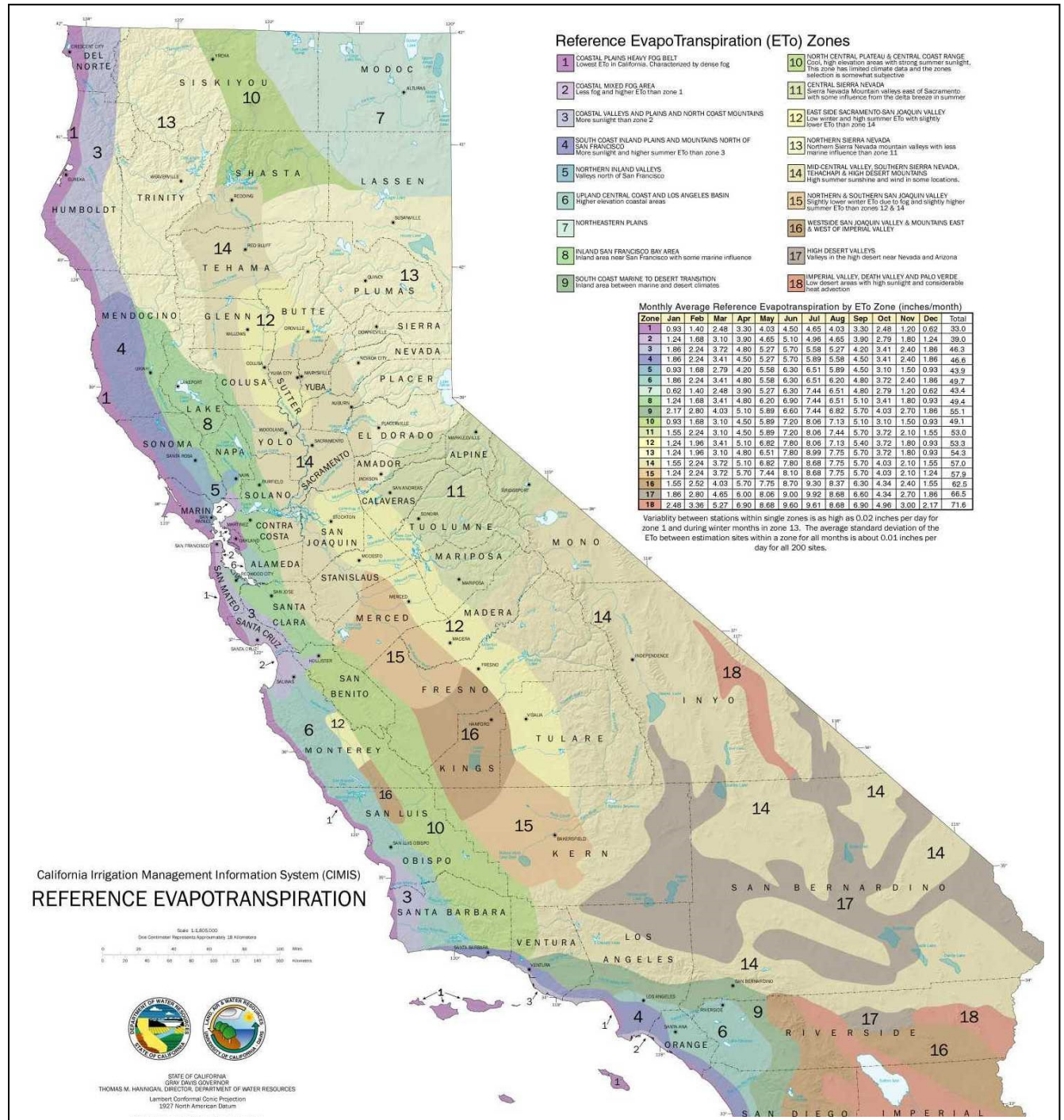


Figure 1. CIMIS Average Eto by Zone for California. <http://www.cimis.water.ca.gov/cimis/cimiSatEtoZones.jsp>

Adjustments of ET Data for use in Urban Areas

Most of the ET monitoring is in agricultural and wild land environments. Evapotranspiration potential, ET_o , is for a standard condition that reflects normalized agricultural conditions. The ET_o value is therefore adjusted according to the soils, plants, and growing season conditions. Most of these adjustment factors were developed for agricultural situations and their use in highly disturbed urban environments has not been well-documented. Most of the available ET_o values are also not located in urban areas. The RAWS data can be adjusted to account for the microclimate found in urban areas, based on methods from the California Department of Water Resources (*A Guide to Estimating Irrigation Needs of Landscape Plantings in California: The Landscape Coefficient Method*). The following table illustrate this method.

Landscape Coefficients Method:

$$K_L = k_S * k_d * k_{mc}$$

k_S = Landscape Coefficient

k_d = Plant Species Factor

k_{mc} = Microclimate Factor

Table 1. Landscape Coefficient Methods Assessment Standards. (Costello et al., 2000)

Estimated Values of Landscape Coefficient Factors				
	Very Low	Low	Moderate	High
Species Factor	<0.1	0.1 to 0.3	0.4 to 0.6	0.7 to 0.9
Density Factor	-	0.5 to 0.9	1	1.1 to 1.3
Microclimate Factor	-	0.5 to 0.9	1	1.1 to 1.4

Table 2. Example Landscape Coefficient Estimate for Oakmulgee, AL, RAWS Data.

k values	Observed Site Conditions	Assessed Category	Estimated Coefficient
Species Factor	cool season grasses	High	.9*/.95
Density Factor	Low density groundcover	Low	0.75
Microclimate	Shaded with wind protection	Low	0.65
$K_L = k_S * k_d * k_{mc}$.43*/.46
*Slight reduction in species factor to account for early spring growing season			

WinSLAMM provides adjustments to ET_o based on the plant species and planting density. Therefore, only the microclimate factor should be used to adjust the RAWS data for use in WinSLAMM. As noted above, the low factor is associated with a well-protected area that is shaded. The moderate factor would be for an unshaded open area, while the high factor would be for an exposed setting subject to wind

and full sun (such as on a green roof). For most biofilter locations, a low to moderate microclimate factor would be appropriate.

Example ETo for Wisconsin

The following map is a copy of one of the maps from Appendix A showing the three ETo data locations for Wisconsin (and some surrounding areas). As expected, most of the data are available for the agricultural areas in the southern part of the state. Two additional locations near the western boundary are also available in Minnesota that may be applicable for other state locations.

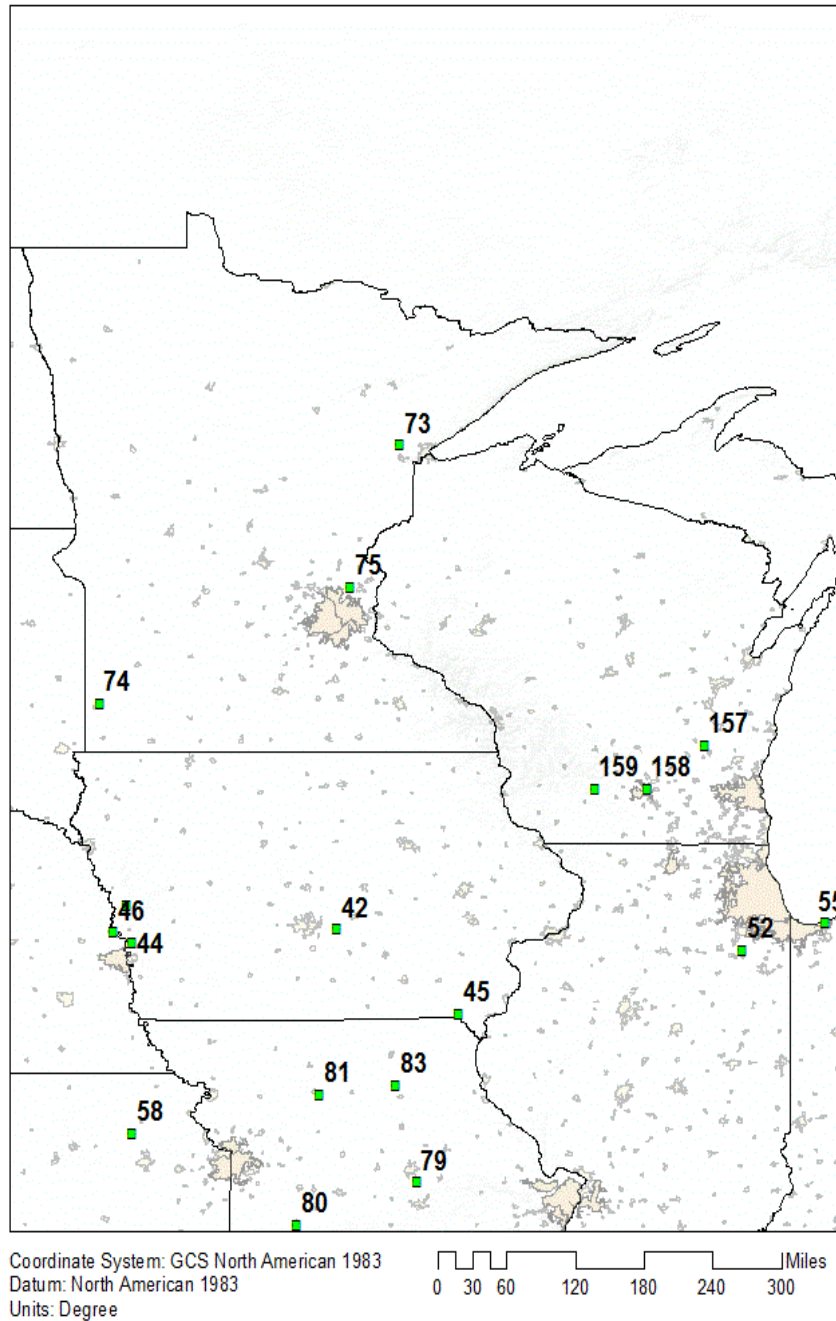


Figure 2. Map of Wisconsin and surrounding areas showing ET station locations

In this example, site 158 (Wautoma) in southern Wisconsin is used. The following shows the ASCE reference equation results from Appendix B:

Table 3. Example Table Showing Monthly Evapotranspiration Values (in/day)

Station Map ID	State	Lat	Long	Elev	Station Name	ASCE Standardized Reference Evapotranspiration Equation (ET_o) ($\frac{in}{day}$)												
						Years of Data	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
137	TN	35.99	-89.406	208	Dyersburg Tennessee	7	0.04	0.07	0.12	0.16	0.19	0.19	0.18	0.17	0.16	0.14	0.08	0.04
138	TN	35.84	-84.331	1240	Lenoir City Tennessee	7	0.04	0.07	0.11	0.14	0.15	0.16	0.15	0.14	0.13	0.09	0.06	0.05
139	TN	36.37	-83.899	1657	Chuck Swan SF TN	7	0.04	0.07	0.10	0.14	0.15	0.16	0.15	0.14	0.13	0.09	0.06	0.04
140	TX	30.17	-97.256	383	Bastrop Texas	7	0.07	0.10	0.14	0.18	0.21	0.24	0.24	0.23	0.19	0.14	0.09	0.07
141	TX	30.11	-94.931	100	Dayton Texas	7	0.06	0.08	0.12	0.15	0.17	0.19	0.17	0.15	0.15	0.11	0.07	0.06
142	TX	32.61	-96.993	520	Cedar Hill SP Texas	7	0.07	0.09	0.13	0.17	0.20	0.23	0.24	0.23	0.18	0.14	0.08	0.08
143	UT	41.15	-111.92	5100	Bues Canyon Utah	12	0.02	0.05	0.09	0.14	0.18	0.21	0.24	0.21	0.18	0.12	0.07	0.02
144	VA	36.68	-75.933	1200	Back Bay Virginia	8	0.05	0.08	0.11	0.15	0.16	0.17	0.17	0.15	0.14	0.11	0.08	0.06
145	VA	38.1	-78.785	2080	Sawmill Ridge Virginia	4	0.04	0.06	0.09	0.13	0.13	0.14	0.13	0.12	0.12	0.08	0.06	0.04
146	VA	37.01	-81.179	2540	Stony Fork Virginia	5	0.02	0.06	0.09	0.13	0.13	0.14	0.13	0.12	0.11	0.08	0.06	0.04
147	VA	37.99	-79.759	2580	Lime Kiln Virginia	4	0.04	0.07	0.11	0.15	0.15	0.15	0.15	0.13	0.12	0.09	0.06	0.04
148	VA	37.25	-77.25	50	James River Virginia	6	0.05	0.08	0.11	0.16	0.16	0.17	0.16	0.13	0.14	0.10	0.08	0.06
149	VT	44.51	-73.116	340	Essex Junction Vermont	6	0.02	0.02	0.04	0.11	0.14	0.16	0.17	0.14	0.11	0.07	0.04	0.02
150	VT	43.33	-73.033	668	Sweezy Vermont	9	0.02	0.03	0.04	0.11	0.13	0.14	0.14	0.12	0.10	0.08	0.04	0.02
151	VT	44.54	-72.529	1200	Elmore Vermont	6	0.02	0.02	0.04	0.09	0.13	0.13	0.14	0.12	0.09	0.07	0.03	0.01
152	WA	46.27	-117.5	4500	Alder Ridge Washington	8	0.04	0.05	0.07	0.12	0.15	0.18	0.25	0.19	0.14	0.09	0.07	0.03
153	WA	47.2	-121.96	771	Enumclaw Washington	6	0.03	0.04	0.07	0.10	0.10	0.15	0.16	0.13	0.08	0.06	0.05	0.04
154	WA	34.1	-118.22	920	Mt. Washington CA	7	0.02	0.04	0.07	0.09	0.12	0.14	0.17	0.15	0.12	0.06	0.03	0.02
155	WA	47.82	-122.88	62	Quilcene Washington	5	0.02	0.03	0.05	0.09	0.11	0.12	0.15	0.12	0.07	0.05	0.03	0.01
156	WA	47.42	-117.53	2230	Turnbull NWR WA	8	0.01	0.03	0.06	0.10	0.14	0.17	0.20	0.17	0.12	0.08	0.03	0.01
157	WI	43.57	-88.609	800	Horicon Wisconsin	8	0.02	0.02	0.09	0.18	0.18	0.19	0.12	0.10	0.11	0.12	0.11	0.02
158	WI	43.1	-89.333	857	Wautoma Wisconsin	5	0.01	0.02	0.05	0.12	0.16	0.17	0.18	0.14	0.10	0.07	0.04	0.01
159	WI	43.1	-90	1260	Dodgeville Wisconsin	5	0.02	0.02	0.05	0.12	0.16	0.18	0.18	0.14	0.12	0.09	0.06	0.02
160	WV	38.3	-82.417	735	Beech Fork West Virginia	3	0.02	0.06	0.10	0.13	0.14	0.15	0.15	0.13	0.13	0.09	0.06	0.04
161	WV	40.54	-80.584	1013	Tomlinson Run WV	6	0.01	0.01	0.08	0.12	0.15	0.15	0.15	0.14	0.12	0.09	0.07	0.04
162	WV	39.11	-79.426	3853	Davis (Bearden) WV	3	0.03	0.02	0.09	0.13	0.13	0.13	0.13	0.11	0.10	0.08	0.06	0.04
163	WY	42.71	-106.35	7740	Casper Mountain WY	11	0.03	0.07	0.11	0.14	0.17	0.20	0.23	0.21	0.17	0.12	0.07	0.03

Five years of data area available and the monthly ETo values range from about 0.01 to 0.02 in/day during December through February to highs of about 0.16 to 0.18 in/day during May to July. The total annual ETo is about 35 inches.

The microclimate factor for this site is assumed to be low, shaded with wind protection, 0.65. Therefore, these monthly values should be reduced by this factor. Again, the plant species and density factors are calculated in WinSLAMM, so only apply the microclimate factor.

Table 4. Evapotranspiration Adjustments due to Microclimate Factor

	ASCE Reference ETo (in/day)	Adjusted ETo due to microclimate factor
January	0.01	0.006
February	0.02	0.01
March	0.05	0.03
April	0.12	0.078
May	0.16	0.10
June	0.17	0.11
July	0.18	0.12
August	0.14	0.091
September	0.10	0.065
October	0.07	0.05
November	0.04	0.03
December	0.01	0.006

The low winter ETo values assume some, but very low plant activity. These can be reduced to zero for dormant plant conditions.

Evaporation Data and Use in WinSLAMM

Evaporation data is used to account for water losses from standing water in WinSLAMM, such as for wet detention ponds and water ponded in biofilters. Evaporation data is available for many locations in the US from Class A evaporation pans generally under the direction of NOAA. The attached spreadsheet data are from the NOAA Cooperative Observer (COOP) Network (<https://www.sciencebase.gov/catalog/item/59124c44e4b0e541a03c20de>).

As noted on the spreadsheet, “the datasets were compiled and quality controlled for the analysis shown in Dewes et al., 2017. The dataset is comprised of 247 stations reporting warm season (May-October; for 21 stations the data is only available for May-September) pan evaporation with at least 20 years of data between 1950 and 2001. Both monthly values and long-term monthly averages are made available, including the climatological measure for standard deviation and coefficient of variation. Missing or unobserved data is shown as NaN.”

Dewes C.F., I. Rangwala, J. J. Barsugli, M.T. Hobbins, and S. Kumar (2017). Drought risk assessment under climate change is sensitive to methodological choices for the estimation of evaporative demand. PLoS ONE 12(3): e0174045. doi:10.1371/journal.pone.0174045.
<https://doi.org/10.1371/journal.pone.0174045>

Hobbins MT. Regional evapotranspiration and pan evaporation: complementary interactions and long-term trends across the conterminous United States. Colorado State University. 2004a.

Hobbins MT, Ramirez JA, Brown TC. Trends in pan evaporation and actual evapotranspiration across the conterminous U.S.: Paradoxical or complementary? Geophysical Research Letters. 2004b;31

The following maps show the locations of these 247 pan evaporation stations:

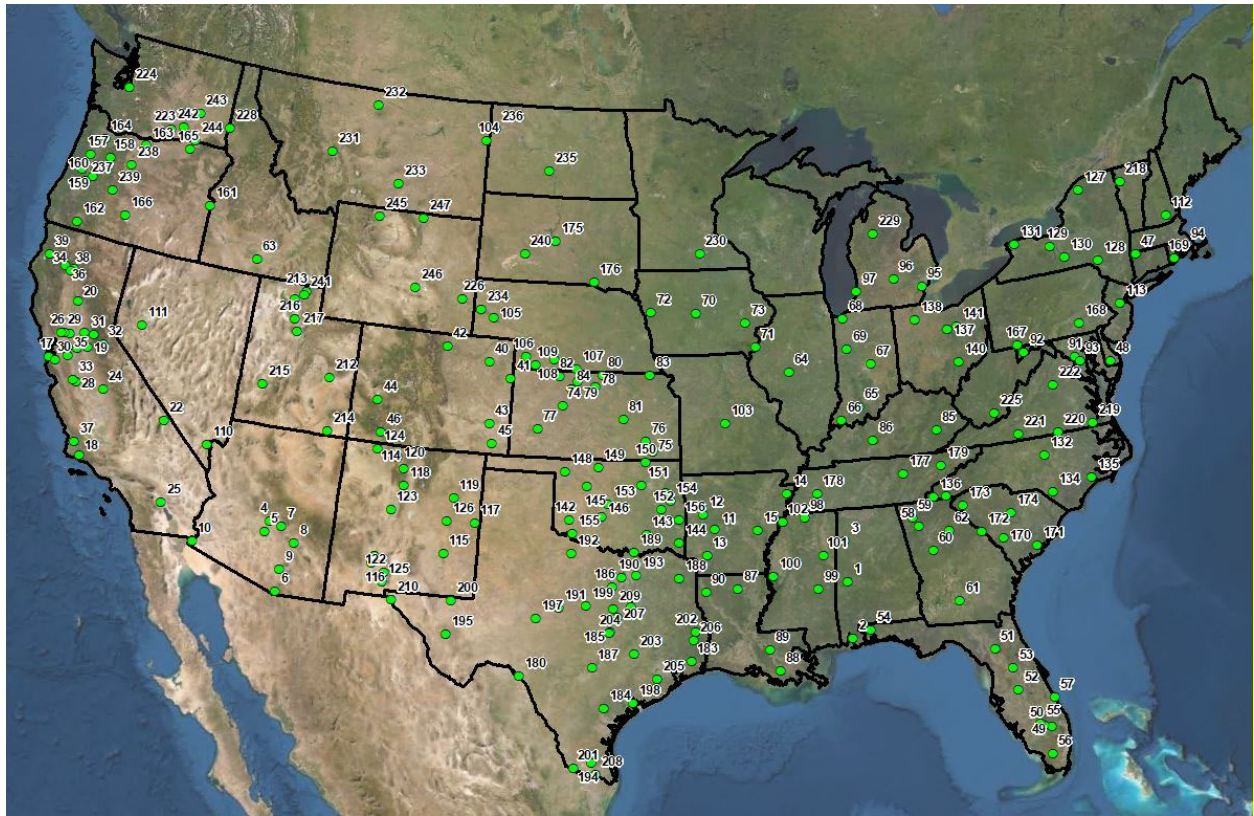


Figure 3. Locator map showing 247 pan evaporation station locations.

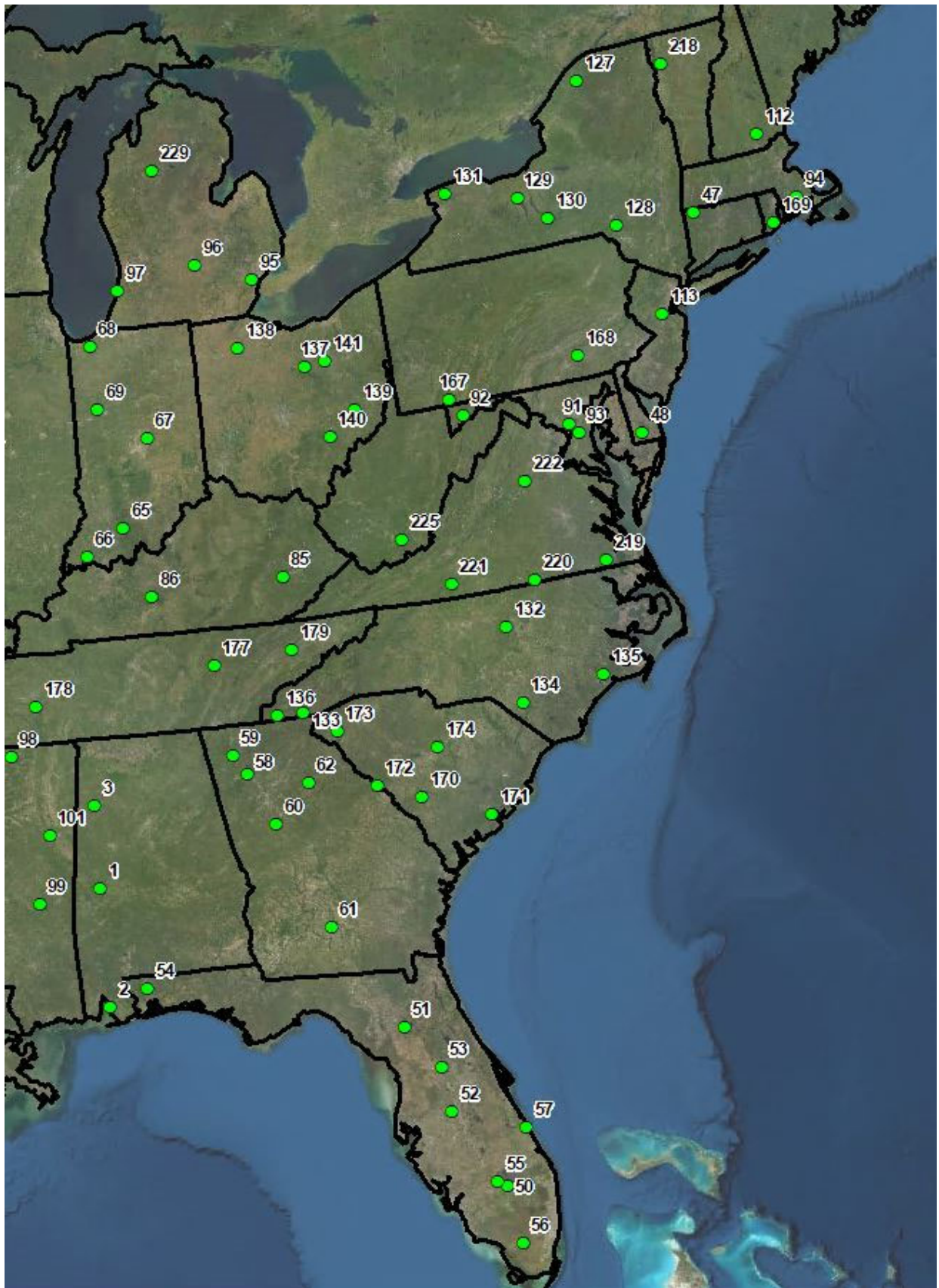


Figure 4. East coast map showing pan evaporation stations

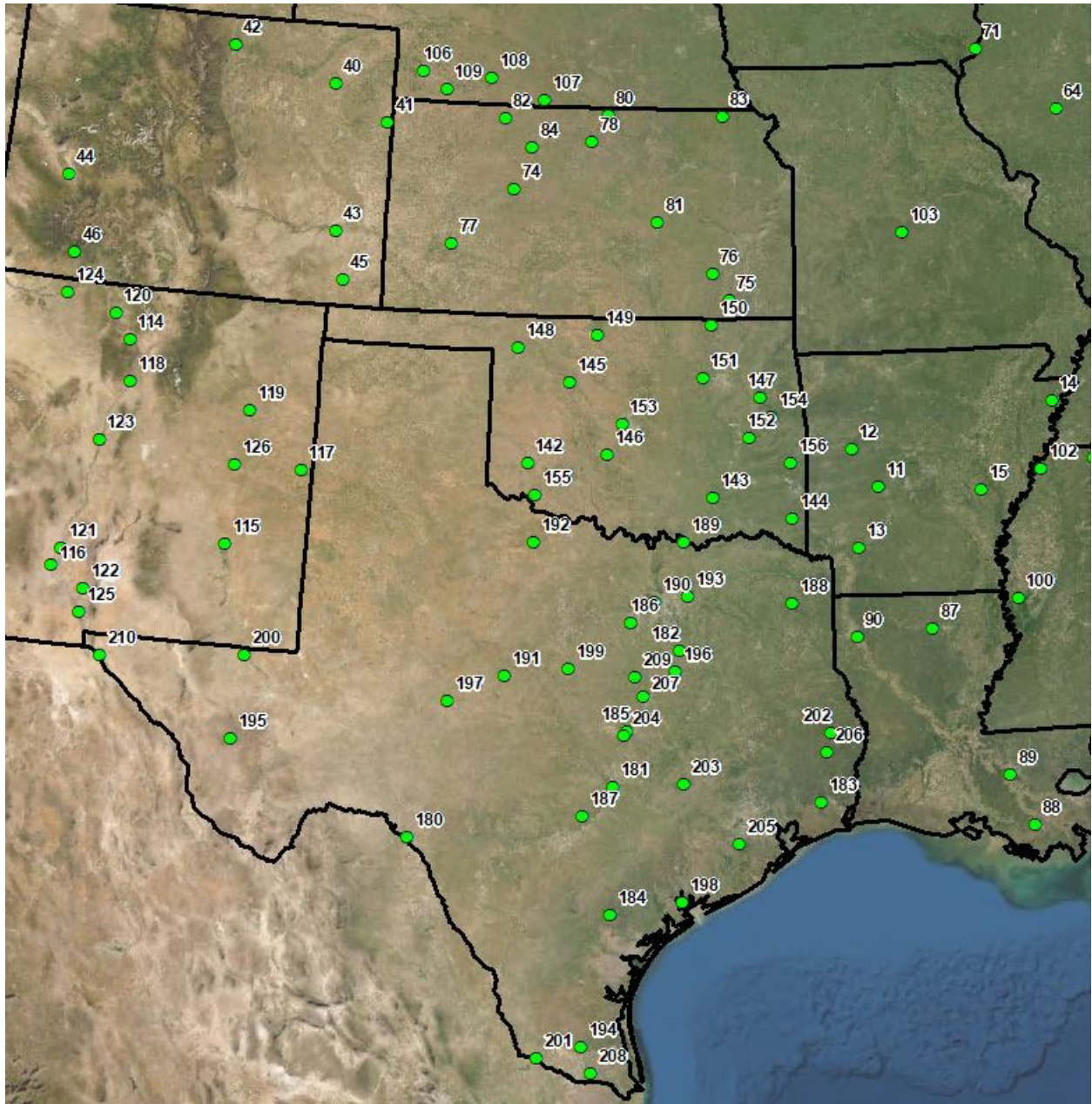


Figure 5. South central US pan evaporation locations.

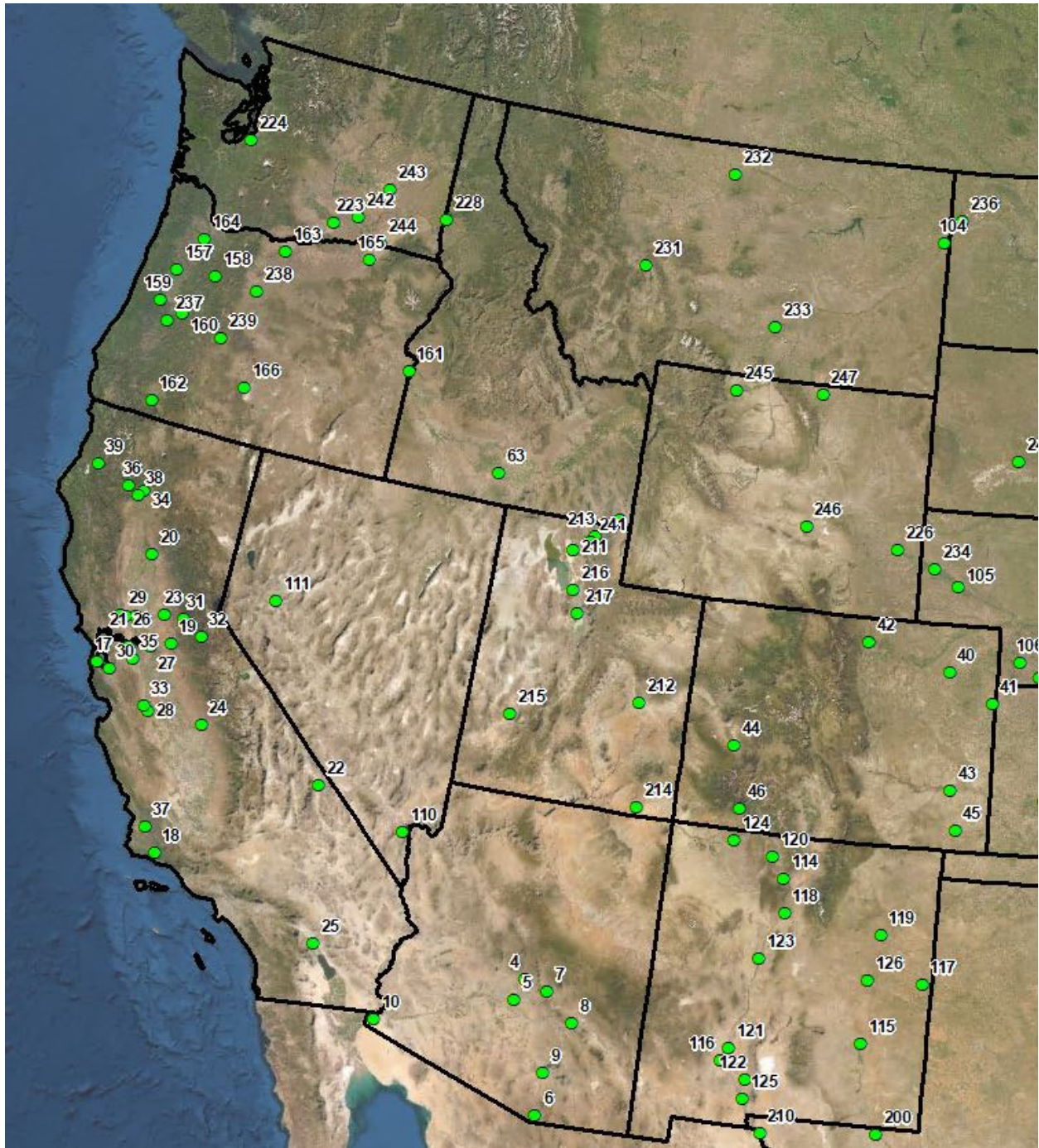


Figure 6. West coast pan evaporation station locations.

The above pan evaporation data cover much of the US, but there are some regions lacking information. Another source of collated pan evaporation data (attached as a pdf document) is NOAA Technical Report NWS 34: *Mean Monthly, Seasonal, and Annual Pan Evaporation for the United States (1982)*. This report has many more locations represented and for all 12 months of the year. However, the last period reported for most locations is 1979. Therefore, the prior data source is recommended as it contains information up through 2001.

With climate change occurring more rapidly in recent years, it is expected that these values will further change. These data sources may be sufficient for stormwater mass balance calculations at stormwater controls, but more recent data may be warranted for critical applications.

Pan Evaporation Adjustments

Class A evaporation data need to be adjusted to account for their shallow depths and small sizes, when applying to typical applications. Evaporation from a shallow lake, wet soil, or other moist natural surfaces is roughly 70 percent of the evaporation from a Class A pan for the same meteorological conditions. Some data are available showing how these vary by season. An example for Colorado (https://coagmet.colostate.edu/ET_Workshop/pdf/11_Jenson.pdf) is:

Table 5. Example Colorado Monthly Pan Evaporation Coefficients

	Pan coefficient
April	0.60
May	0.63
June	0.67
July	0.71
August	0.75
September	0.78
October	0.77

The average from April through October is the standard 0.70. Cooler months have lower coefficients as the water temperatures in the target water body is lower than during the later season months when the water temperatures are higher for a greater depth.

Pan Evaporation Data Example

The following is an example of evaporation values for the Horticulture Teaching and Research Center, Michigan State University, Lansing, MI.

Table 6. Pan Evaporation Location at Lansing, MI.

Station ID	Latitude	Longitude	Long-Term Annual Average (mm)	Standard Deviation (mm)	Coefficient of Variation
202395	42.6742	-84.485	880.28	52.78	0.06

The following table was extracted from the spreadsheet, and the years with missing data were removed. The monthly values are for total pan evaporation for each month. Most northern locations only have data for May through October. These values were then summarized by month.

Table 7. Monthly Pan Evaporation Data for Lansing, MI (mm/month)

Station ID	year	May	June	July	August	September	October	Annual total (mm/yr)
202395	1957	136.429	194.682	212.274	177.339	129.088	73.918	923.73
202395	1958	215.419	193.922	184.584	187.999	133.148	96.008	1011.08
202395	1960	127.289	195.952	216.084	152.439	146.868	79.758	918.39
202395	1961	177.829	197.982	183.314	145.589	132.898	71.118	908.73
202395	1962	184.689	205.852	192.454	181.649	150.418	70.358	985.42
202395	1963	145.319	199.252	207.694	152.949	125.778	104.138	935.13
202395	1964	184.179	220.842	204.654	169.459	137.978	70.608	987.72
202395	1965	182.149	213.732	249.604	166.919	125.528	68.068	1006
202395	1967	172.762	194.142	191.899	182.49	137.841	78.692	957.826
202395	1968	137.462	171.282	218.829	170.05	123.621	79.962	901.206
202395	1970	152.702	178.902	168.029	182.24	112.701	65.482	860.056
202395	1971	189.022	222.332	208.919	183.51	130.731	76.662	1011.176
202395	1972	163.112	166.202	191.899	129.41	115.491	68.022	834.136
202395	1974	130.852	180.682	236.609	176.65	138.861	90.122	953.776
202395	1975	176.062	191.602	217.299	143.89	99.241	90.122	918.216
202395	1976	170.482	247.732	232.539	186.05	195.761	113.492	1146.056
202395	1977	241.602	221.322	225.679	158.36	110.671	63.962	1021.596
202395	1978	156.512	228.682	194.189	175.64	161.971	75.642	992.636
202395	1979	170.222	227.672	183.769	146.43	160.451	69.552	958.096
202395	1983	168.528	179.917	199.603	155.998	145.758	80.007	929.811
202395	1984	169.798	225.637	213.063	177.588	124.668	78.487	989.241
202395	1990	164.55	203.62	200.83	154.265	150.54	92.924	966.729
202395	1993	189.44	193.21	219.37	188.805	106.09	75.394	972.309
202395	1994	191.98	231.31	198.04	161.625	148.76	70.824	1002.539
202395	1995	155.15	196.26	197.02	168.995	150.03	85.044	952.499
202395	1996	162.52	180	205.91	181.695	118.28	69.044	917.449
202395	1997	151.34	212.26	216.83	145.375	137.58	82.254	945.639
202395	1998	177.8	187.71	200.41	158.5	148.08	76.45	948.95
202395	1999	177.29	193.8	196.34	159.51	157.48	85.34	969.76
202395	2001	152.4	226.82	222.25	182.37	100.08	75.95	959.87

Table 8. Monthly Pan Evaporation Data Summary for Lansing, MI (mm/month).

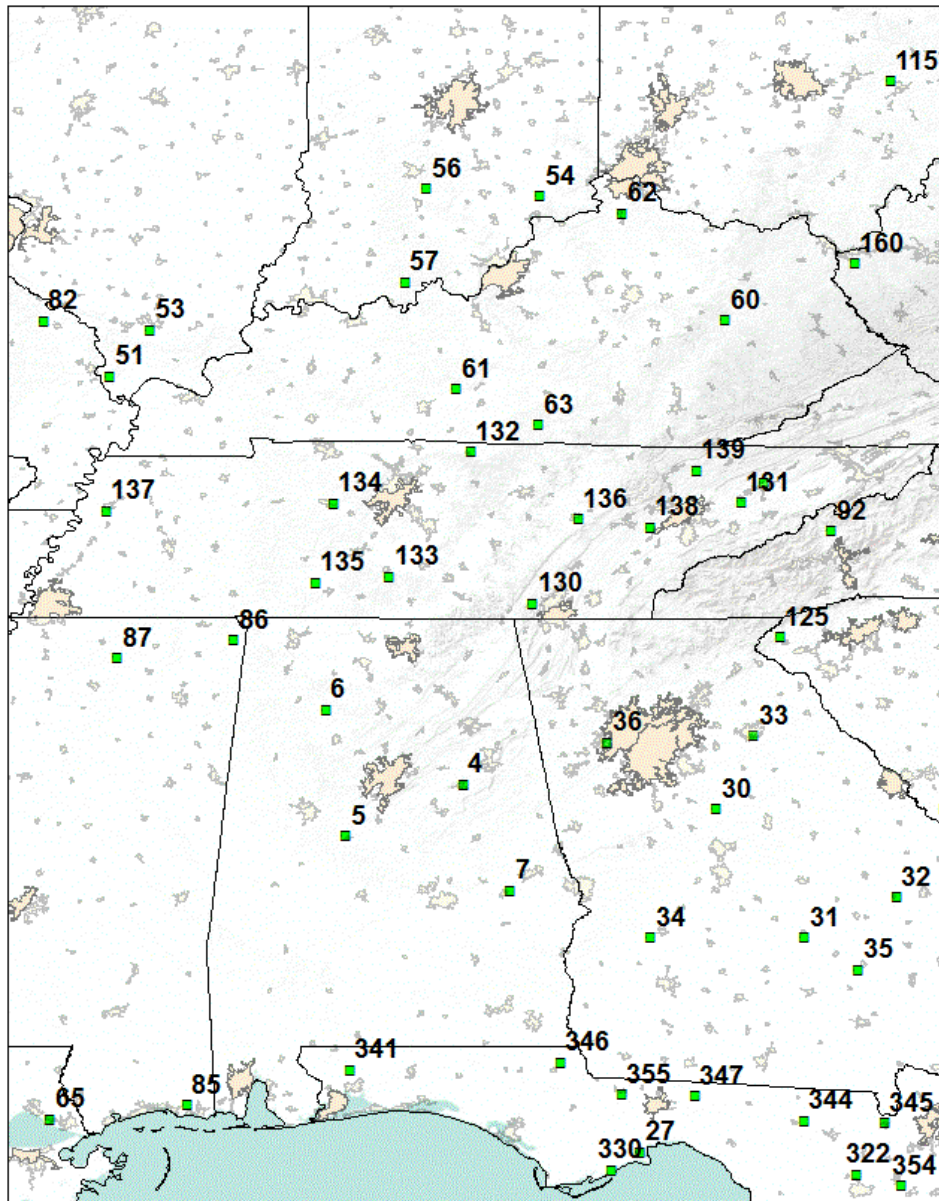
	May	June	July	August	September	October	Annual total
count	30	30	30	30	30	30	30
min	127.29	166.20	168.03	129.41	99.24	63.96	834.14
max	241.60	247.73	249.60	188.81	195.76	113.49	1146.06
average	169.16	202.78	206.33	166.79	135.21	79.25	959.53
median	170.01	197.12	205.28	169.23	135.36	76.56	957.96
stdev	24.09	20.17	17.57	15.88	20.75	11.48	56.22
COV	0.14	0.10	0.09	0.10	0.15	0.14	0.06

Table 9. Monthly Pan Evaporation Conversions and Adjustment Calculations for Lansing, MI

	average monthly total (mm)	days per month	mm/day	in/day	with 0.7 pan adjustment factor, in/day
May	169.163	31	5.457	0.21	0.15
June	202.7771	20	10.139	0.40	0.28
July	206.3329	31	6.656	0.26	0.18
August	166.7929	31	5.380	0.21	0.15
September	135.213	30	4.507	0.18	0.12
October	79.2468	31	2.556	0.10	0.07

The winter and spring months not shown (November through April) would have 0 in/day evaporation values.

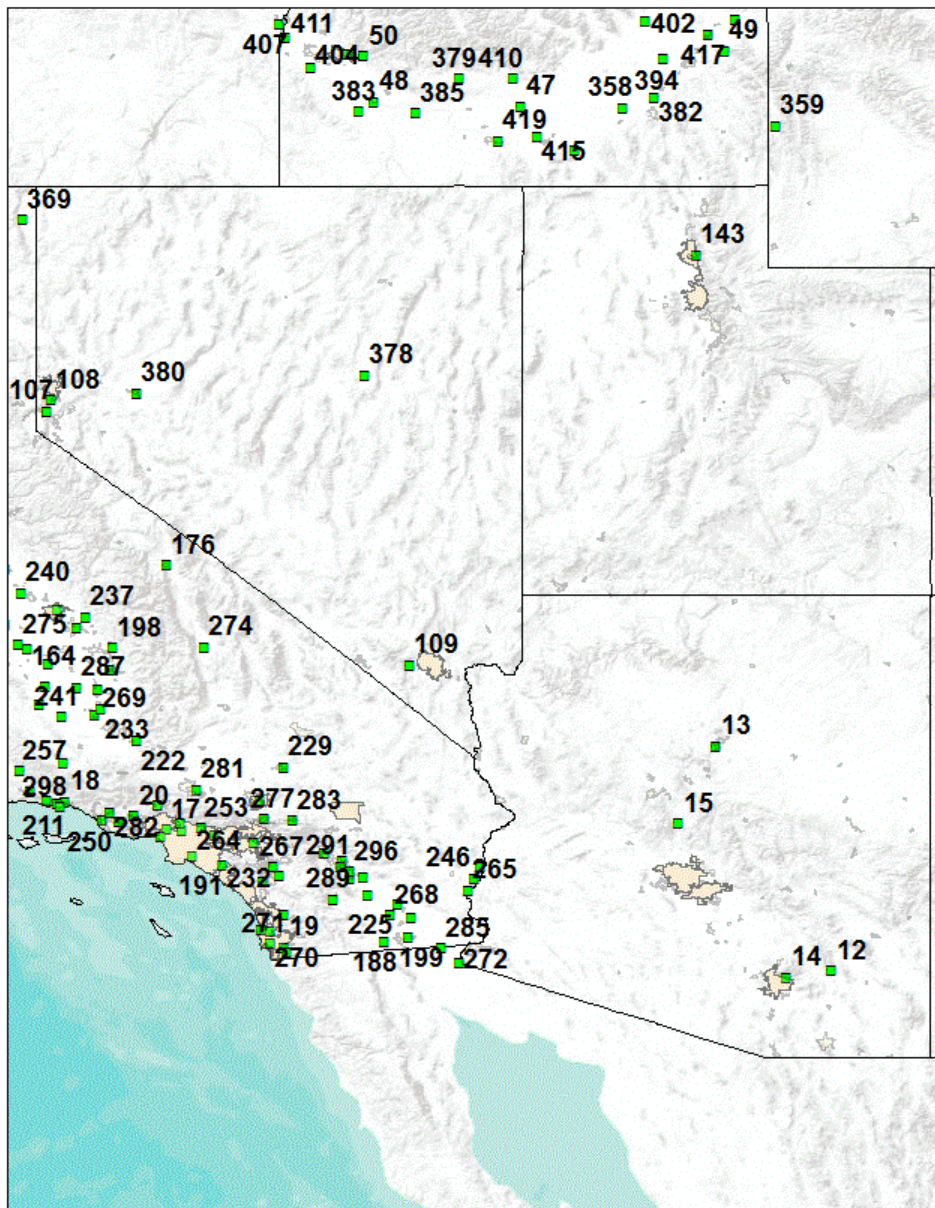
Appendix A: Maps Showing ETo Data Availability



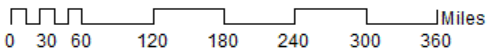
Coordinate System: GCS North American 1983
Datum: North American 1983
Units: Degree

0 20 40 80 120 160 200 240 Miles

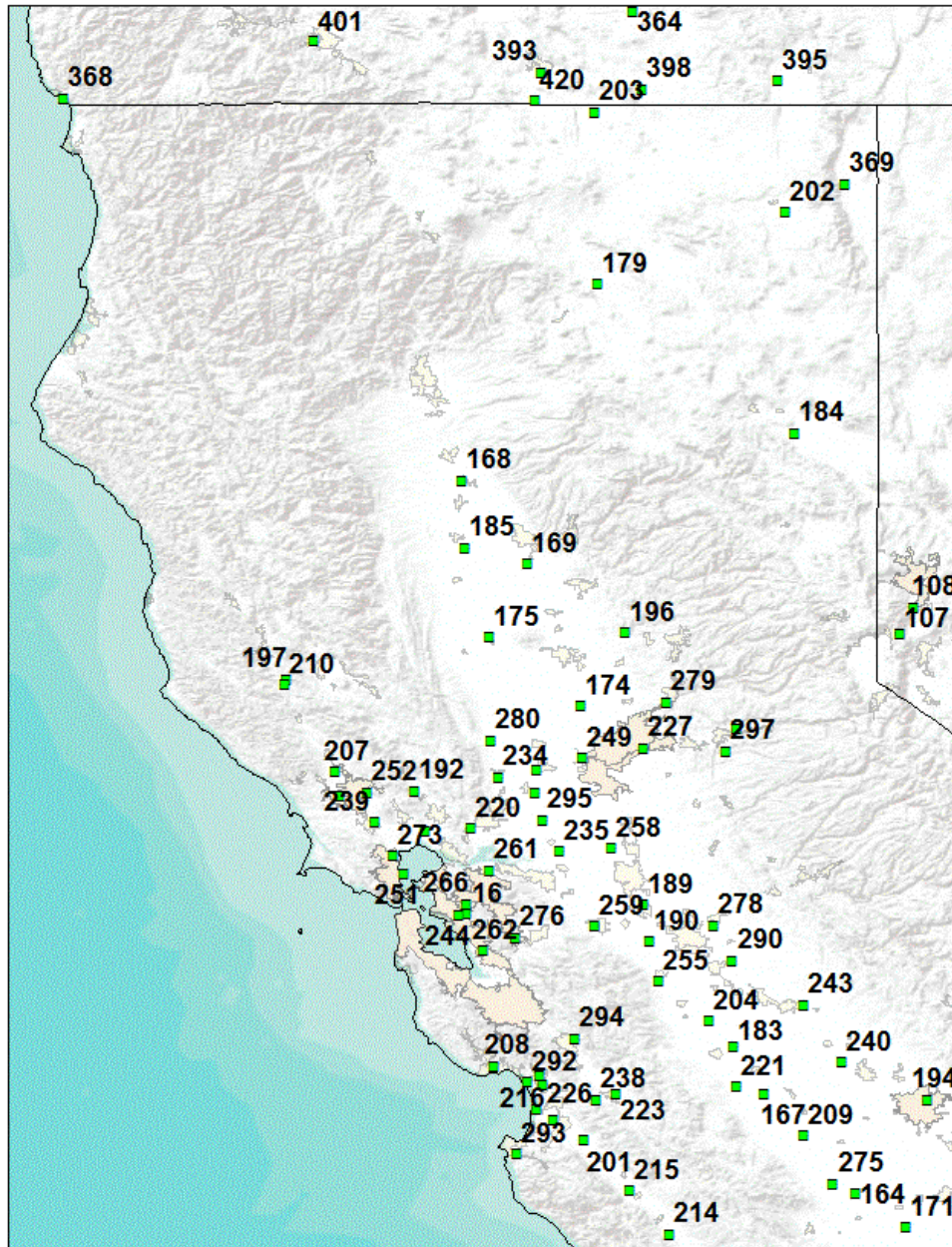
Alabama, Kentucky, and Tennessee



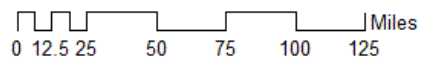
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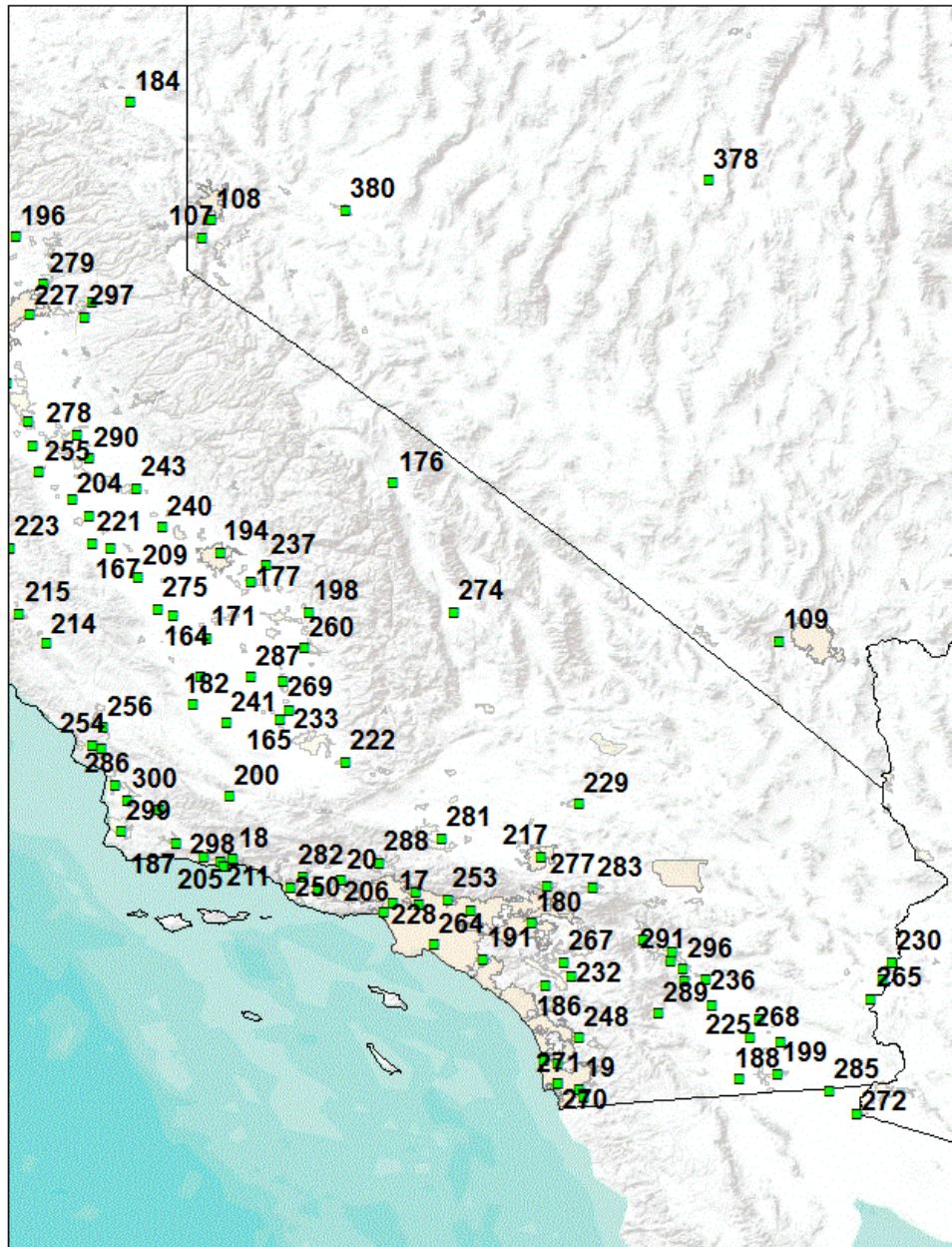
Arizona, Utah, and Nevada



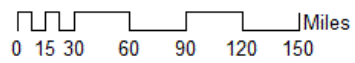
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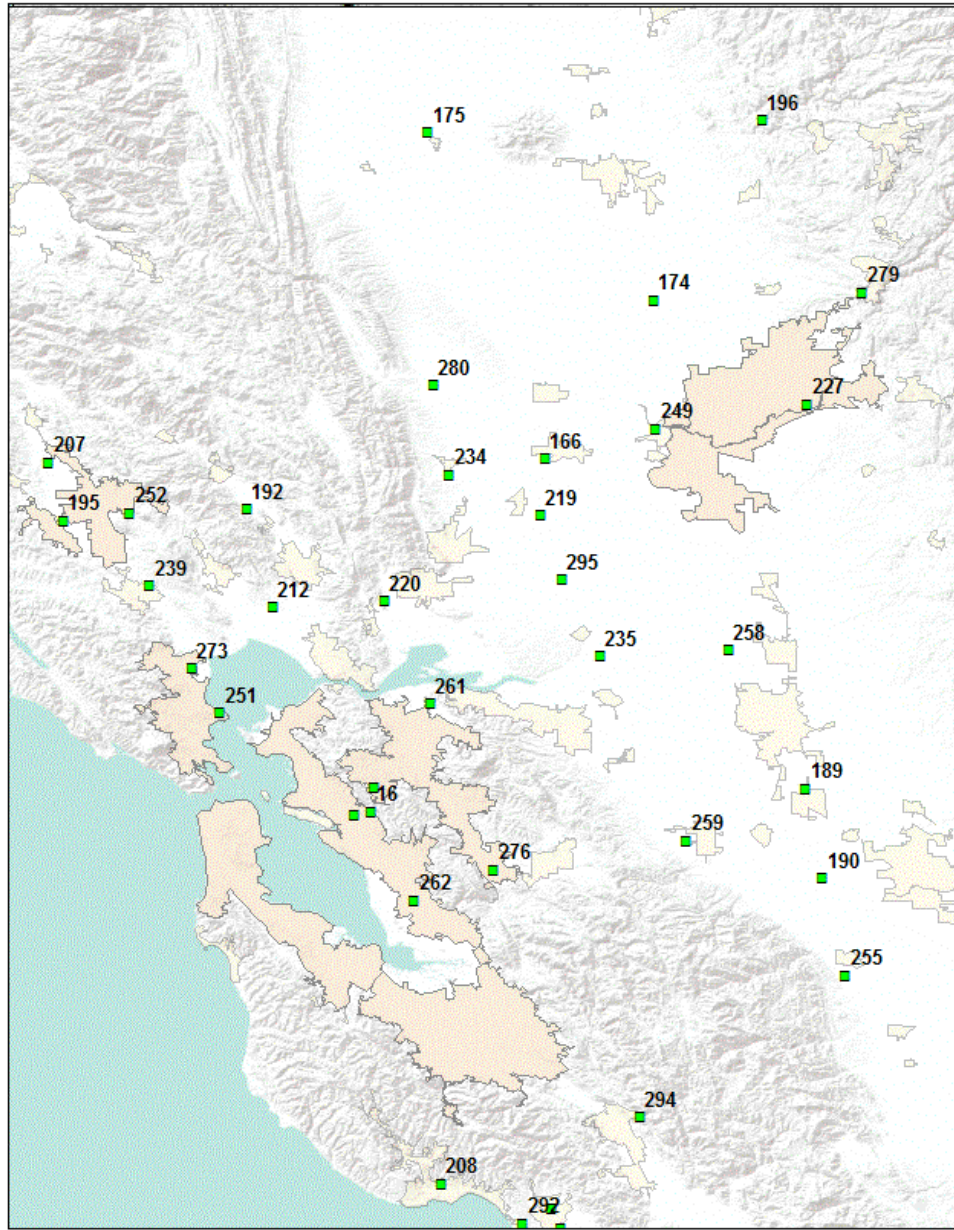
Northern California



Coordinate System: GCS North American 1983
 Datum: North American 1983
 Units: Degree



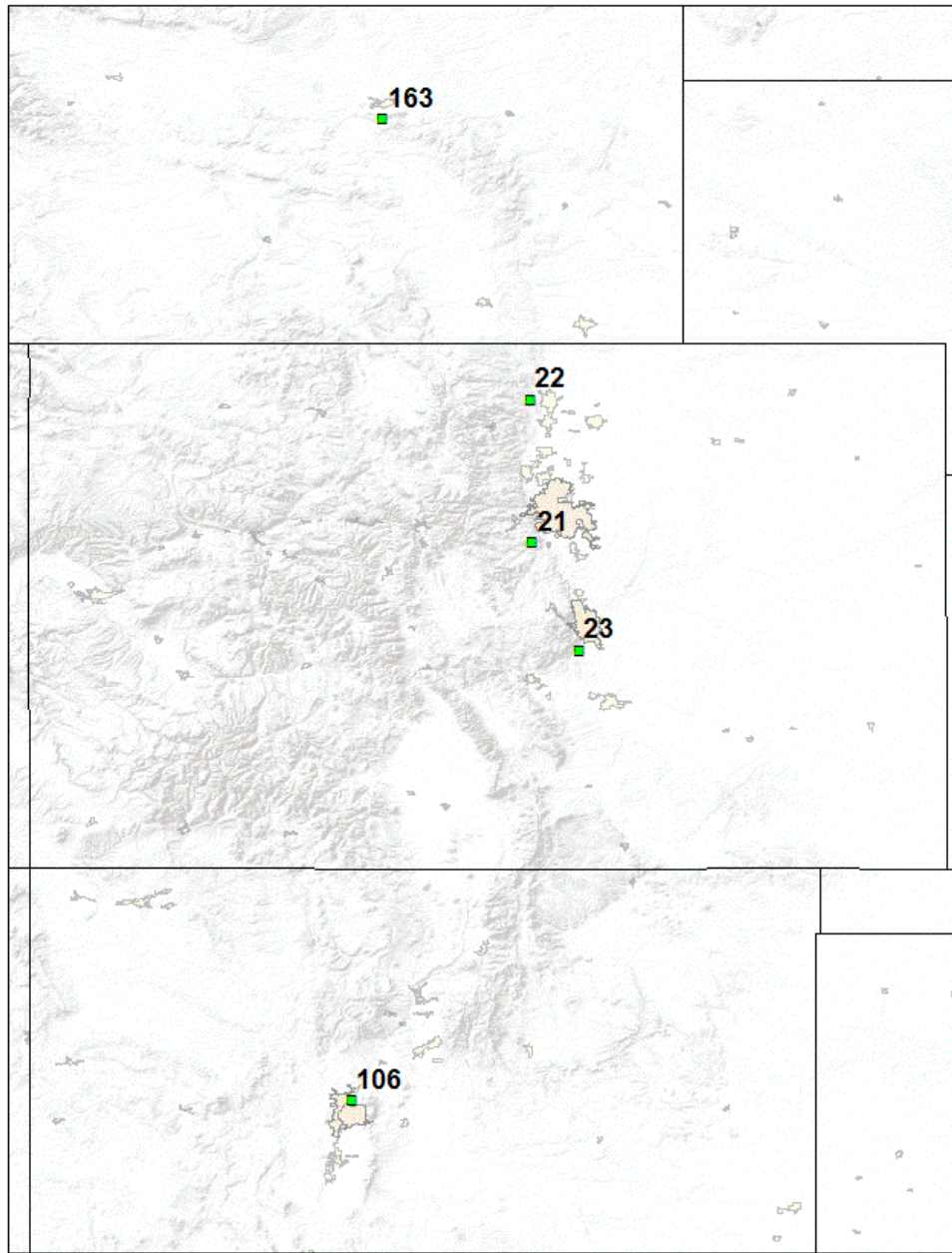
Southern California



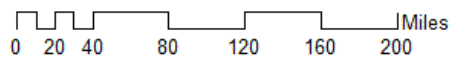
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 Units: Degree

10 5 0 10 20 30 Miles

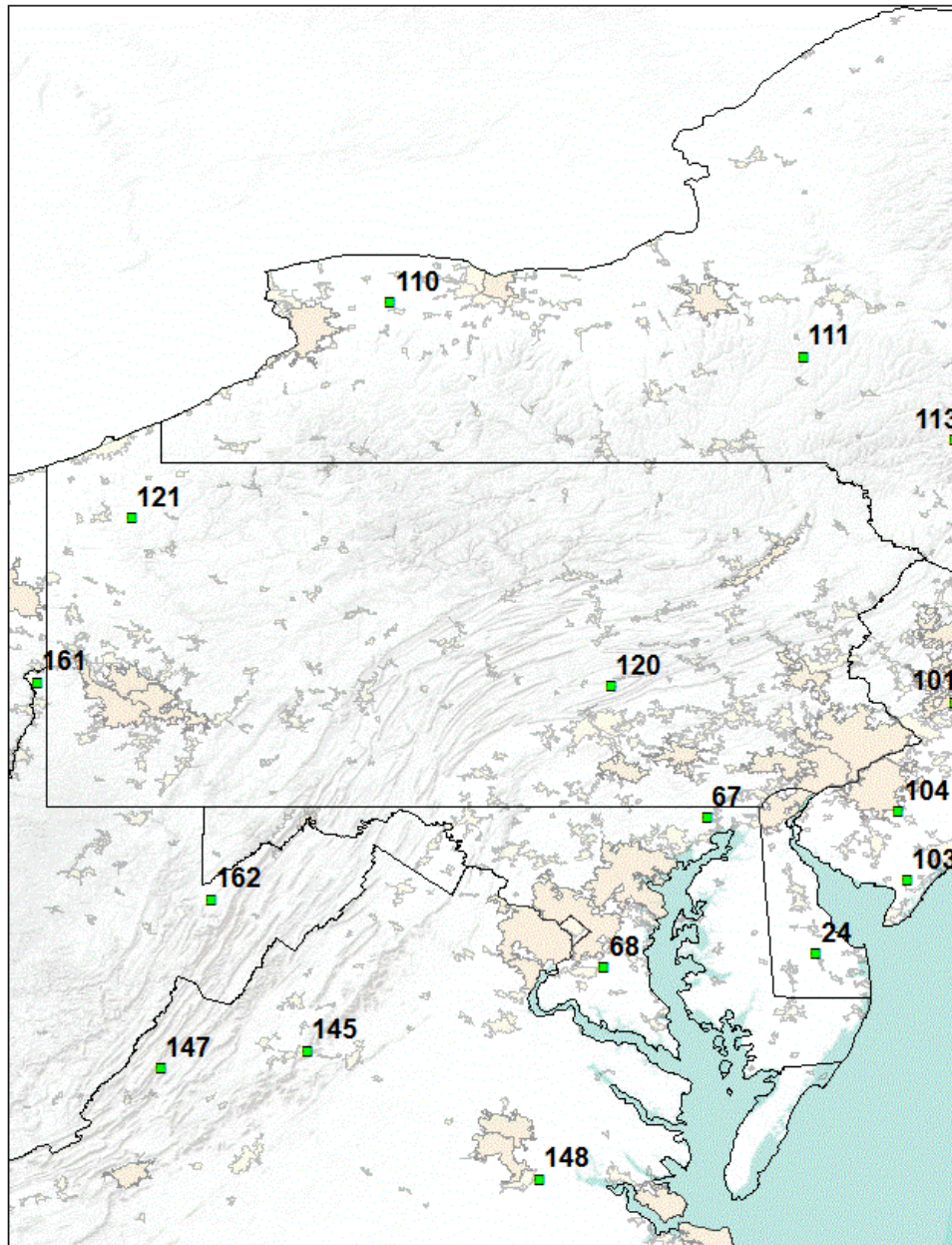
San Francisco Bay Area



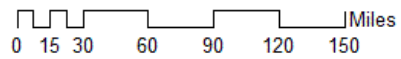
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Datum: North American 1983
Units: Degree



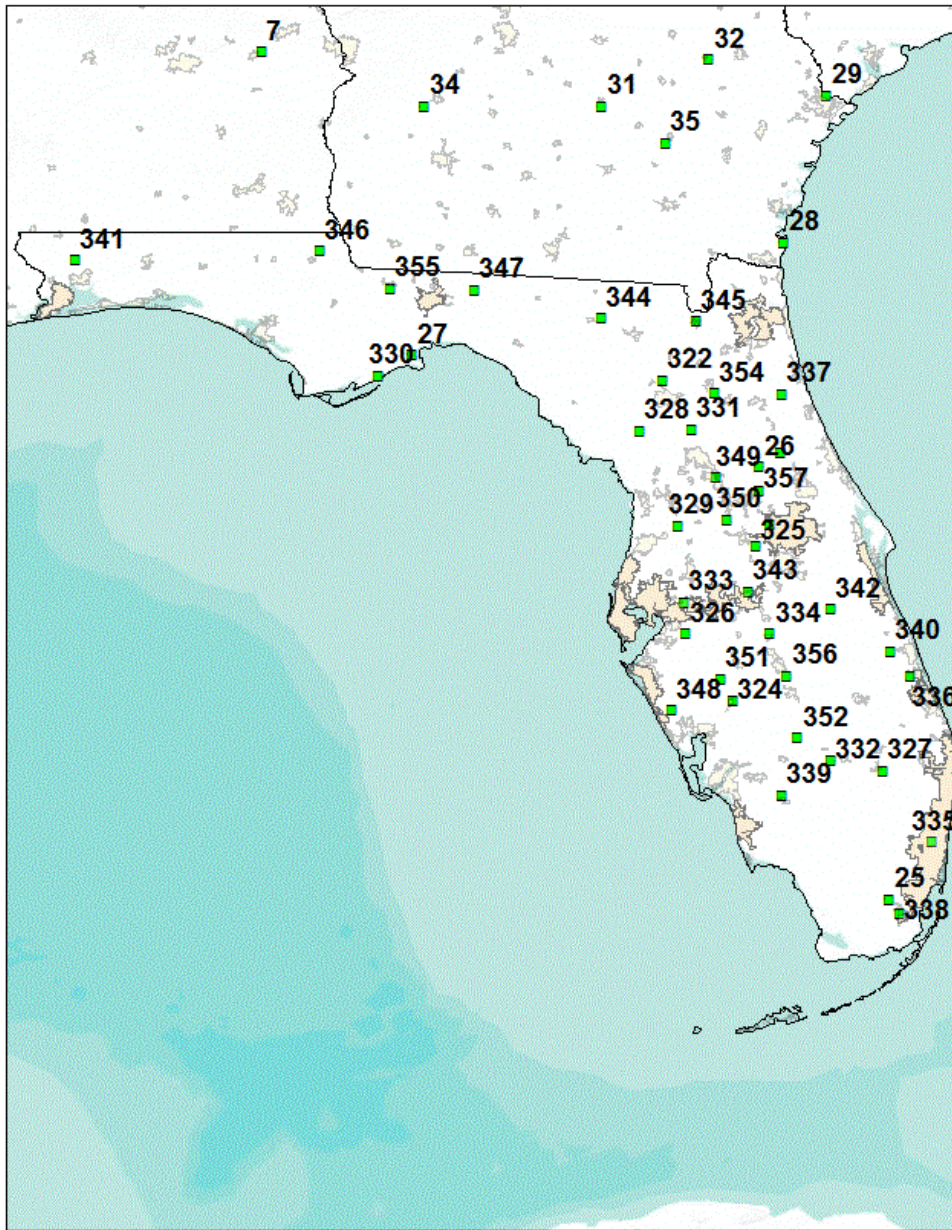
Colorado



Coordinate System: GCS North American 1983
Datum: North American 1983
Units: Degree

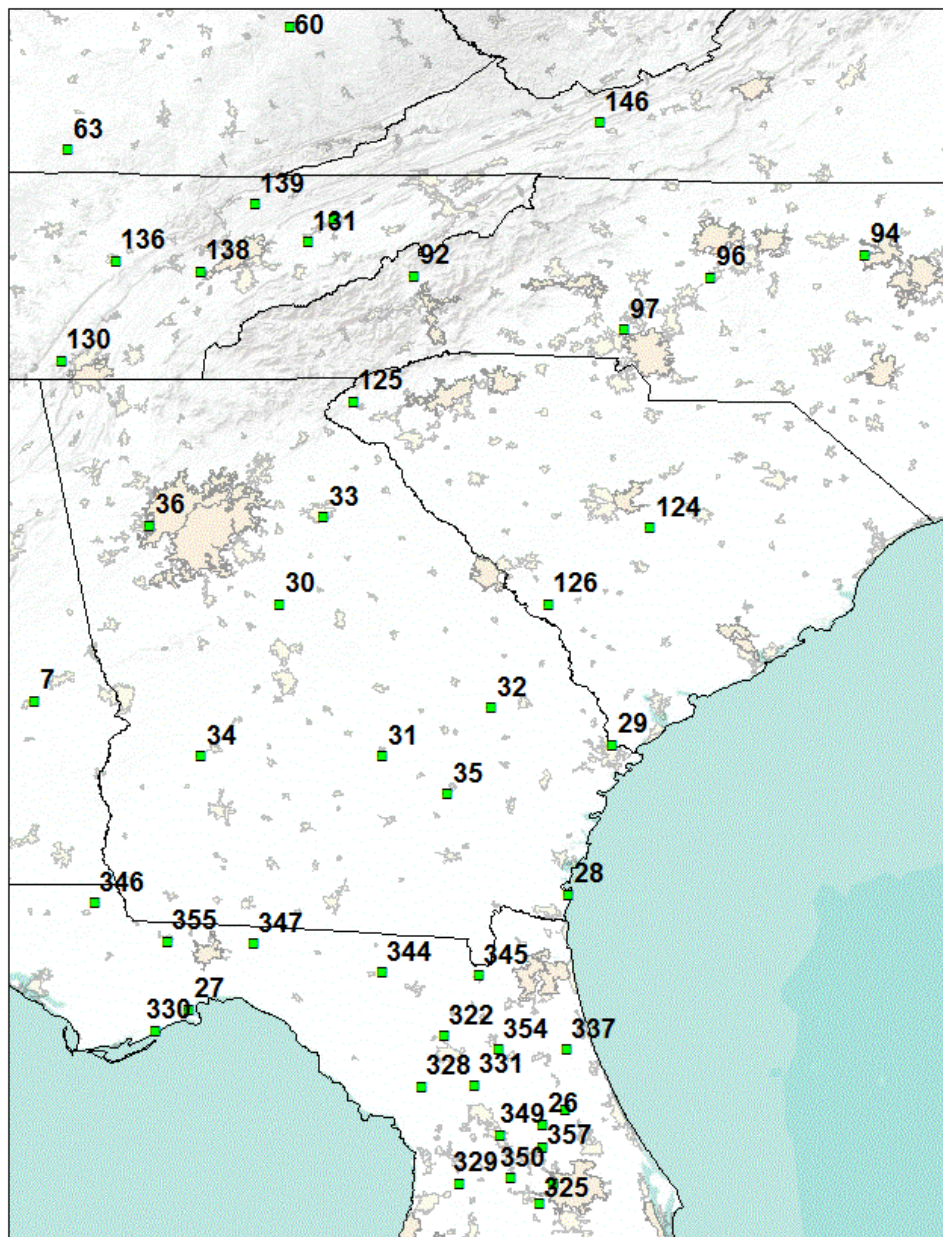


Delaware, Pennsylvania, and Maryland

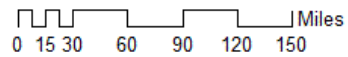


Coordinate System: GCS North American 1983
 Datum: North American 1983
 Units: Degree

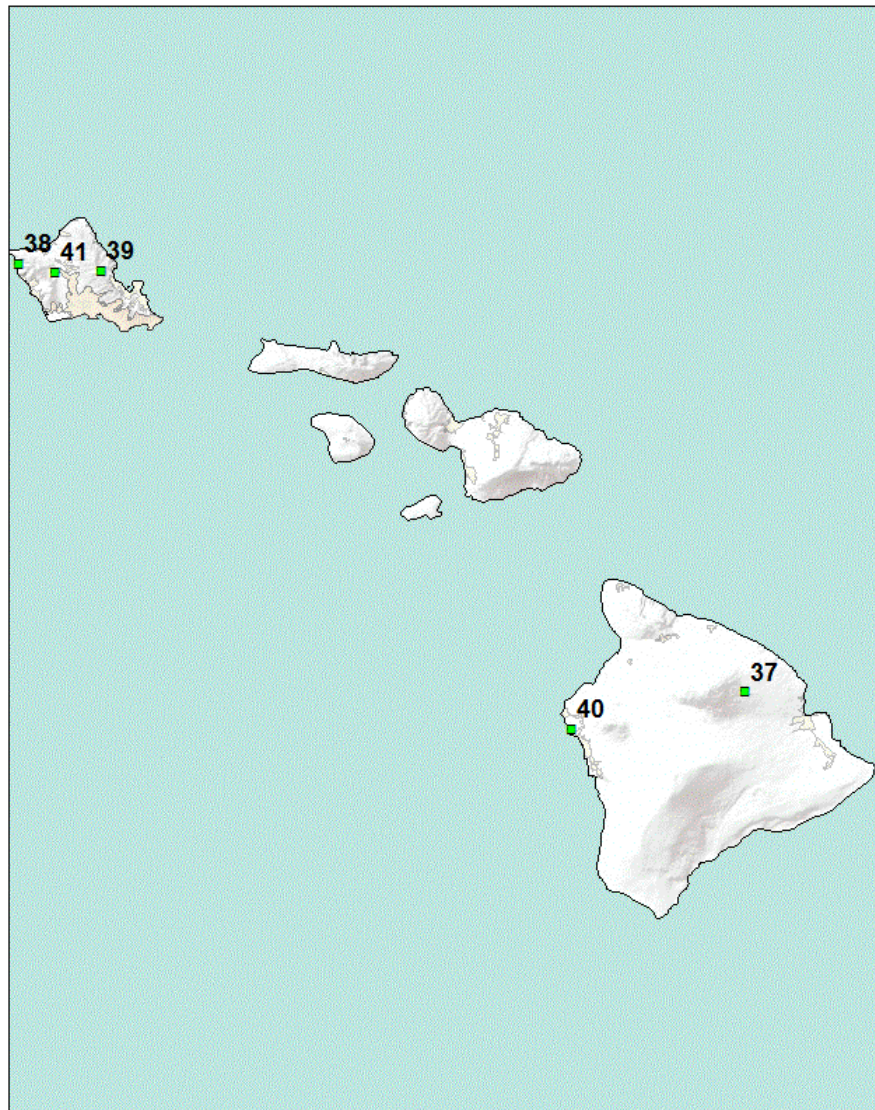
Florida



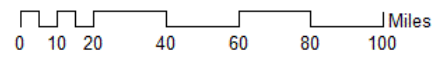
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 Datum: North American 1983
 Units: Degree



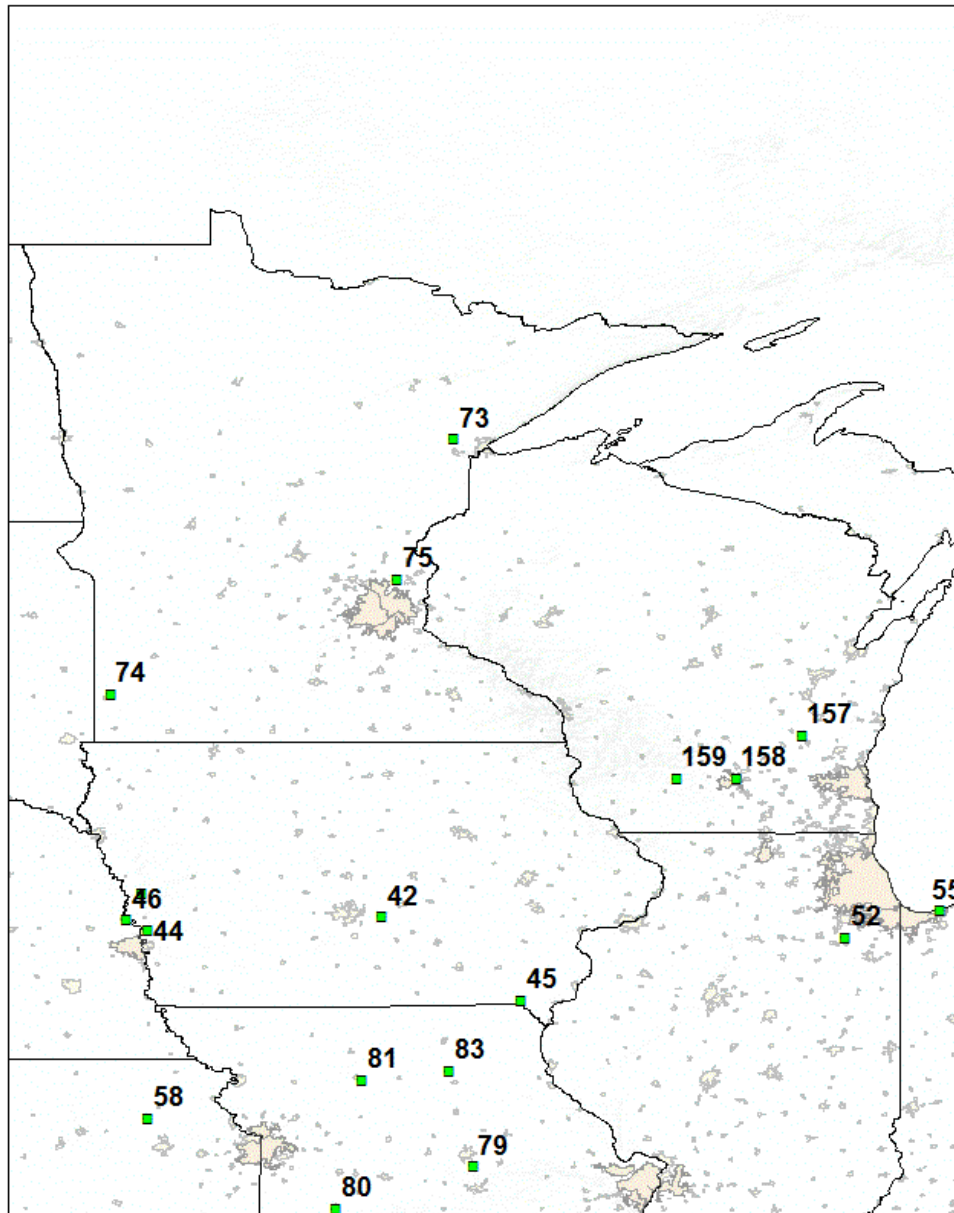
Georgia and South Carolina



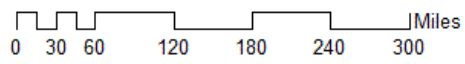
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Datum: North American 1983
Units: Degree



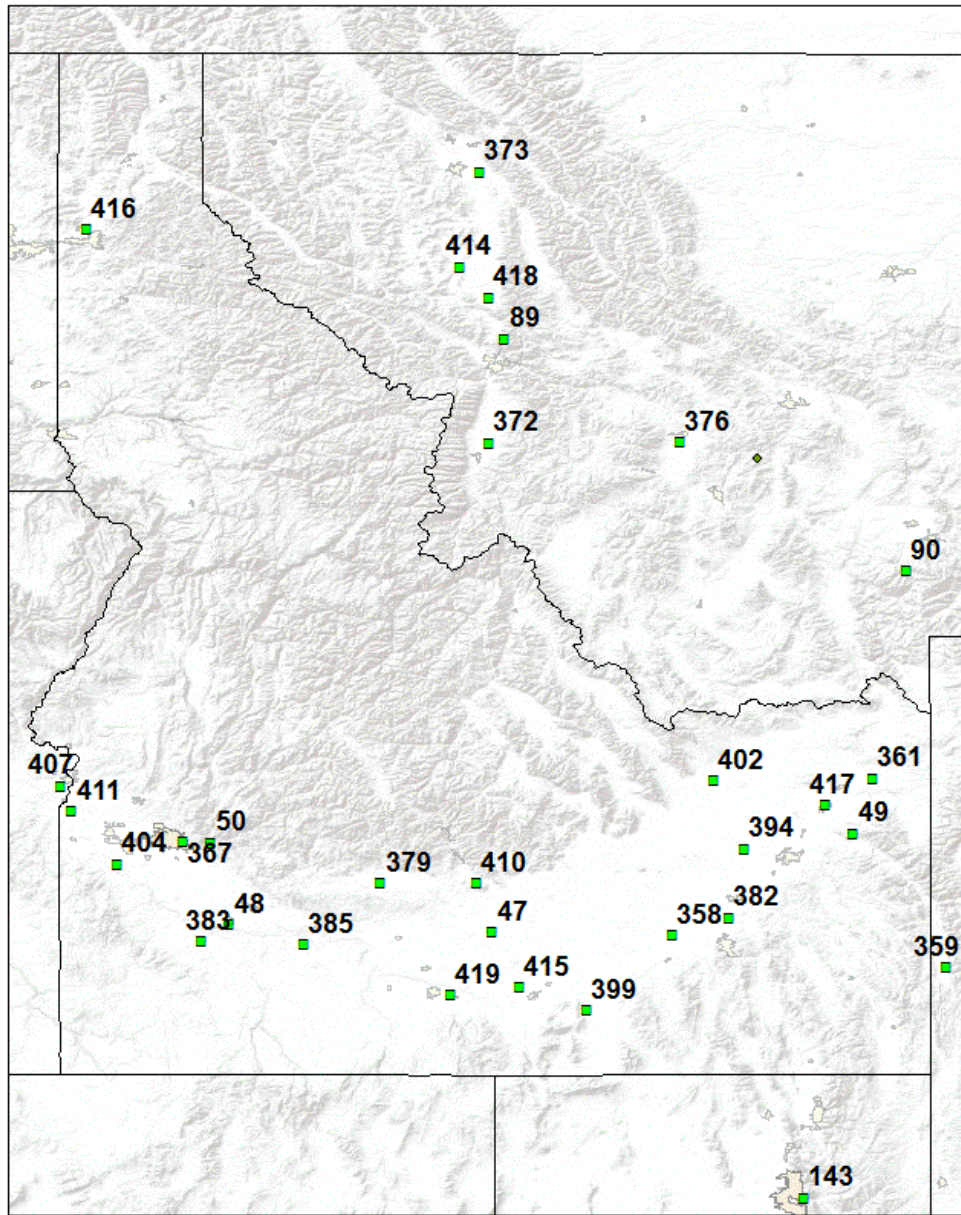
Hawaii



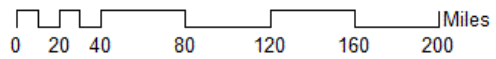
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 Datum: North American 1983
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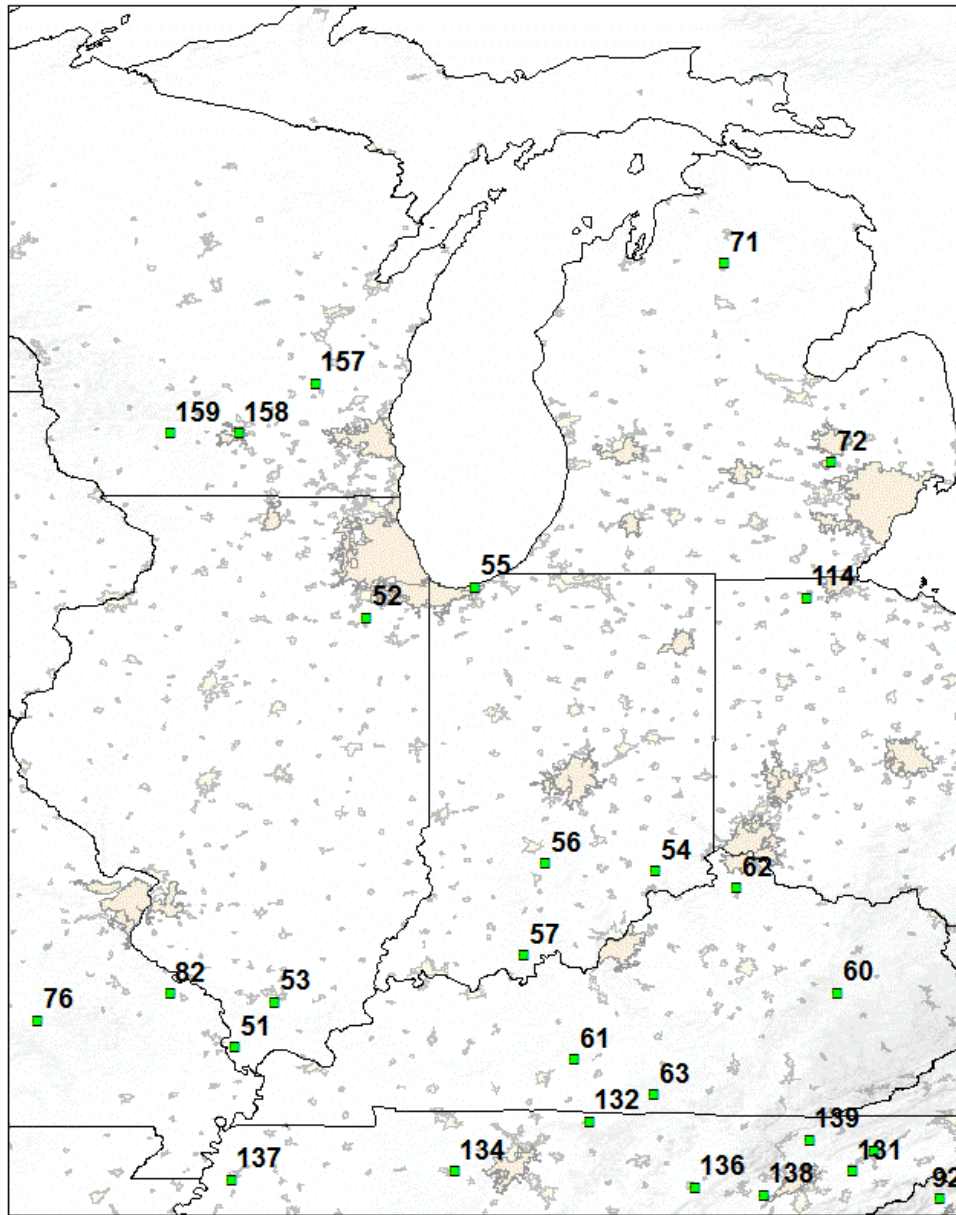
Iowa, Minnesota, and Wisconsin



Coordinate System: GCS North American 1983
 Datum: North American 1983
 Units: Degree



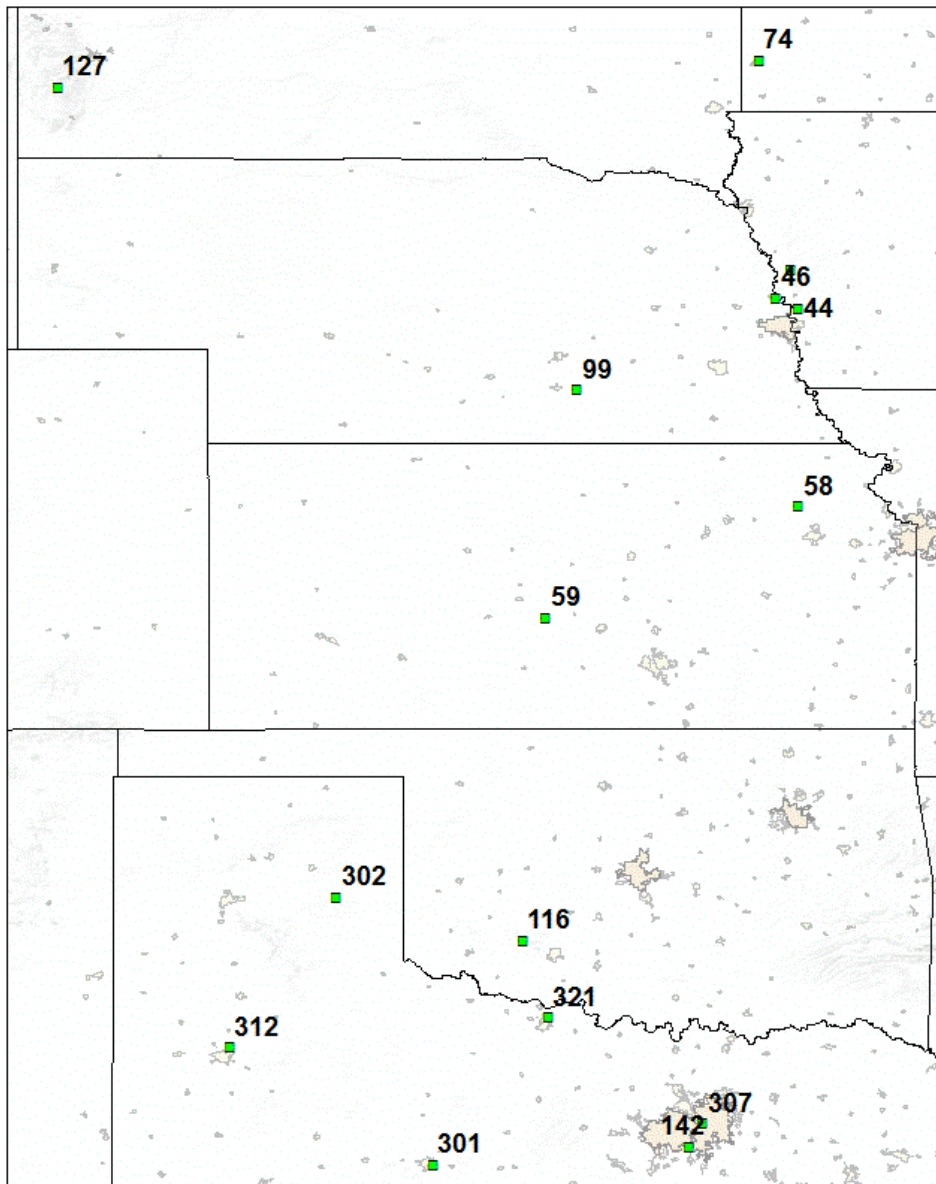
Idaho



Coordinate System: GCS North American 1983
 Datum: North American 1983
 Units: Degree

0 25 50 100 150 200 250 Miles

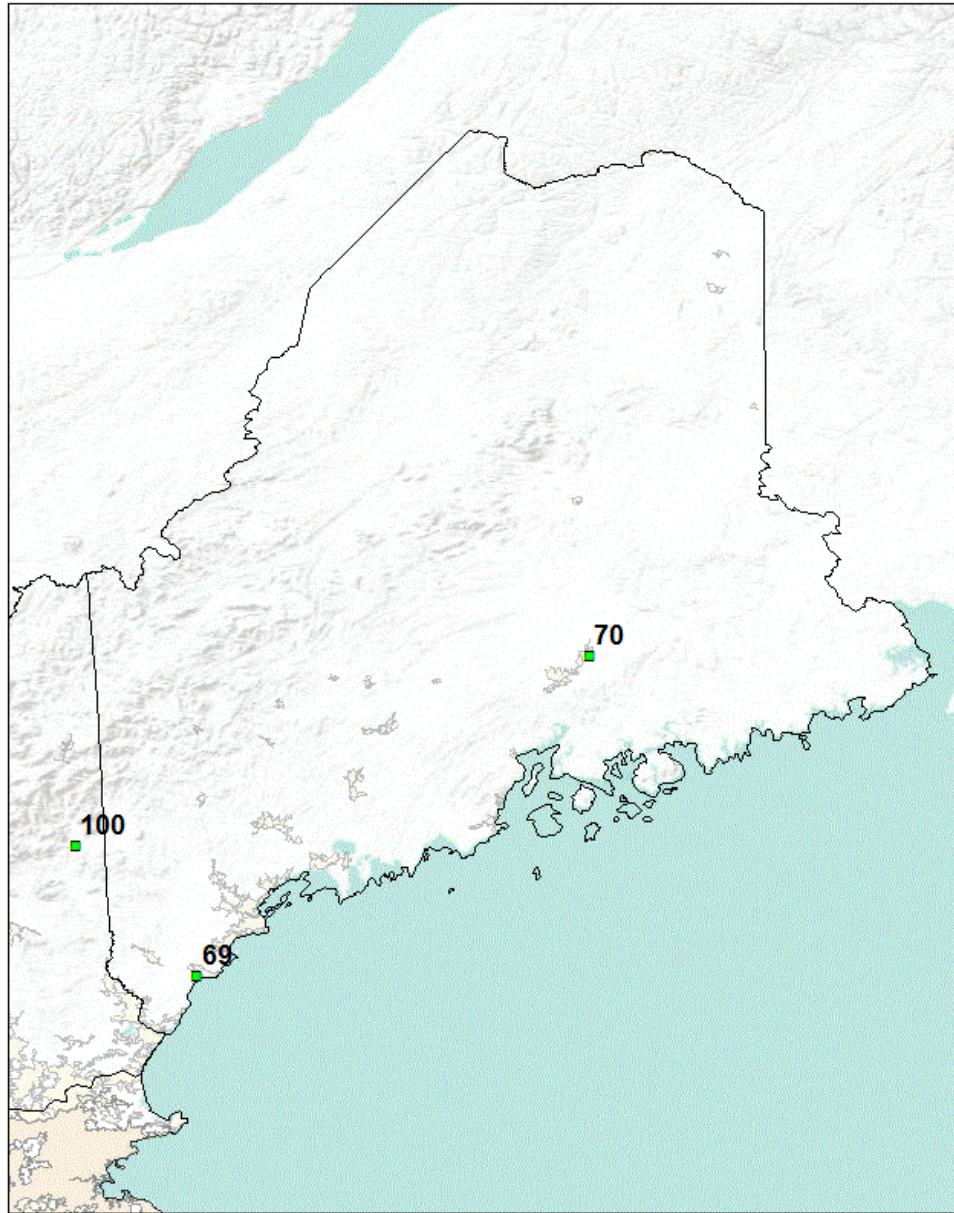
Illinois, Indiana, and Michigan



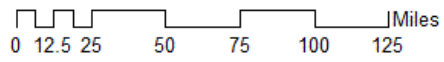
Coordinate System: GCS North American 1983
 Datum: North American 1983
 Units: Degree

0 30 60 120 180 240 300 Miles

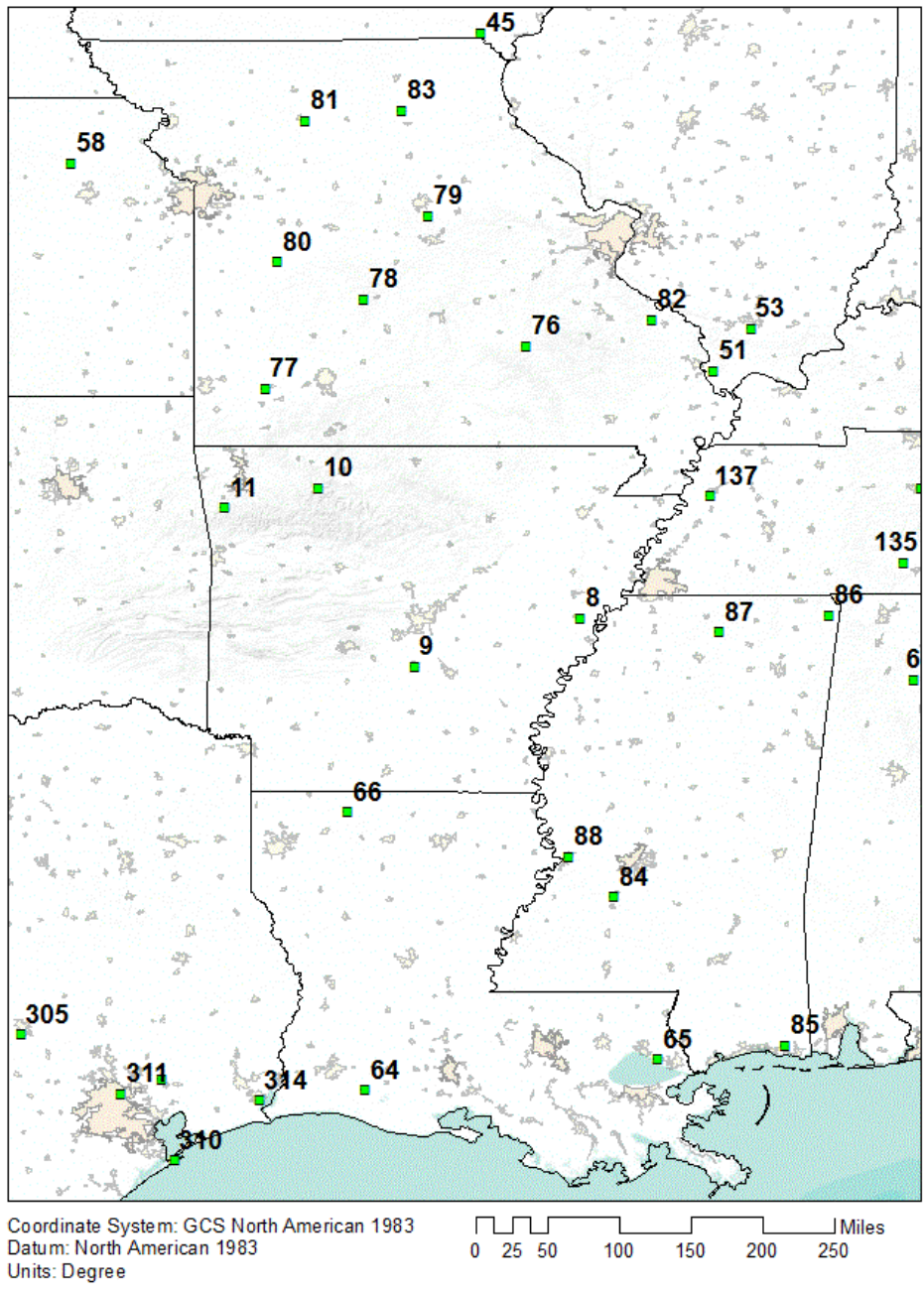
Kansas, Nebraska, and Oklahoma



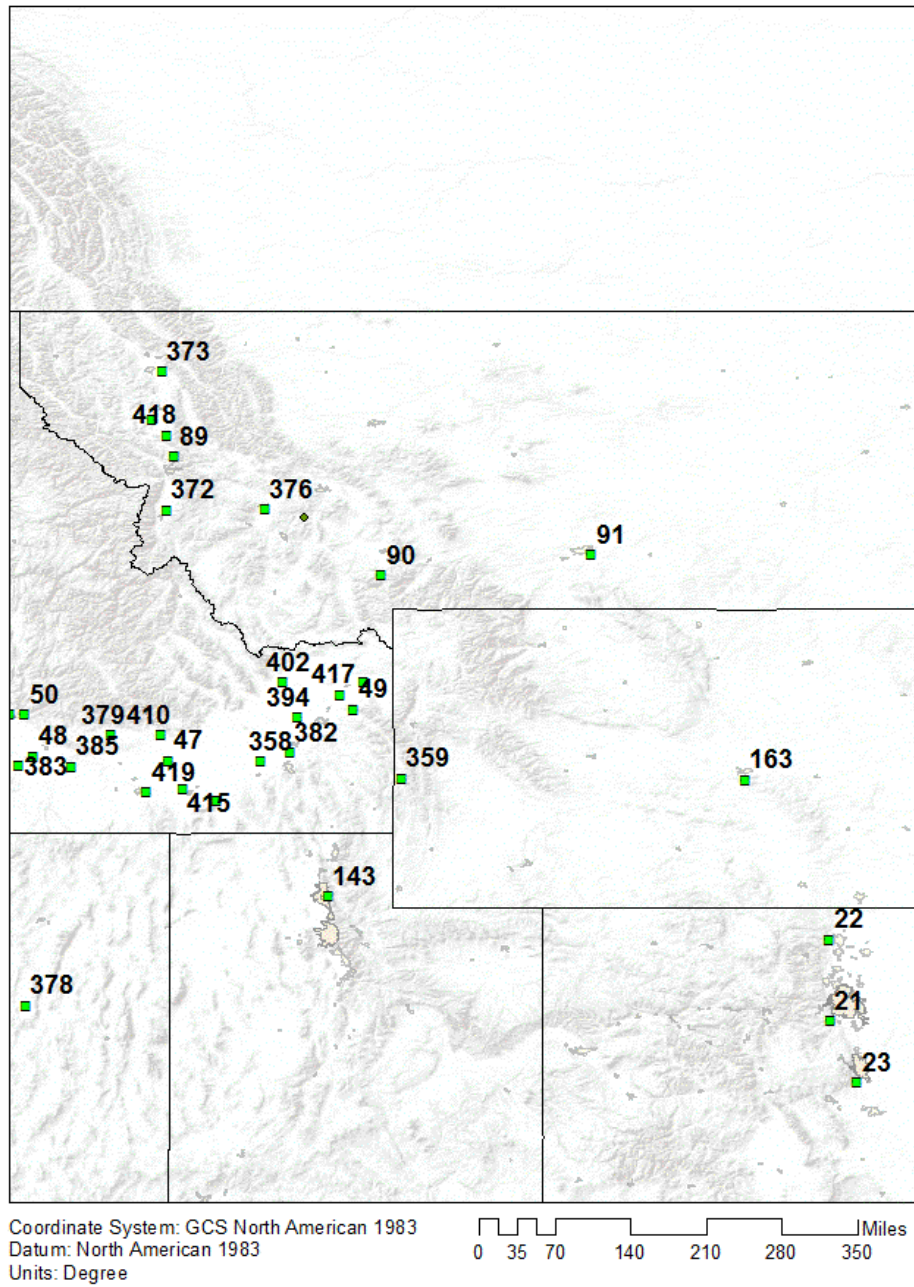
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Units: Degree



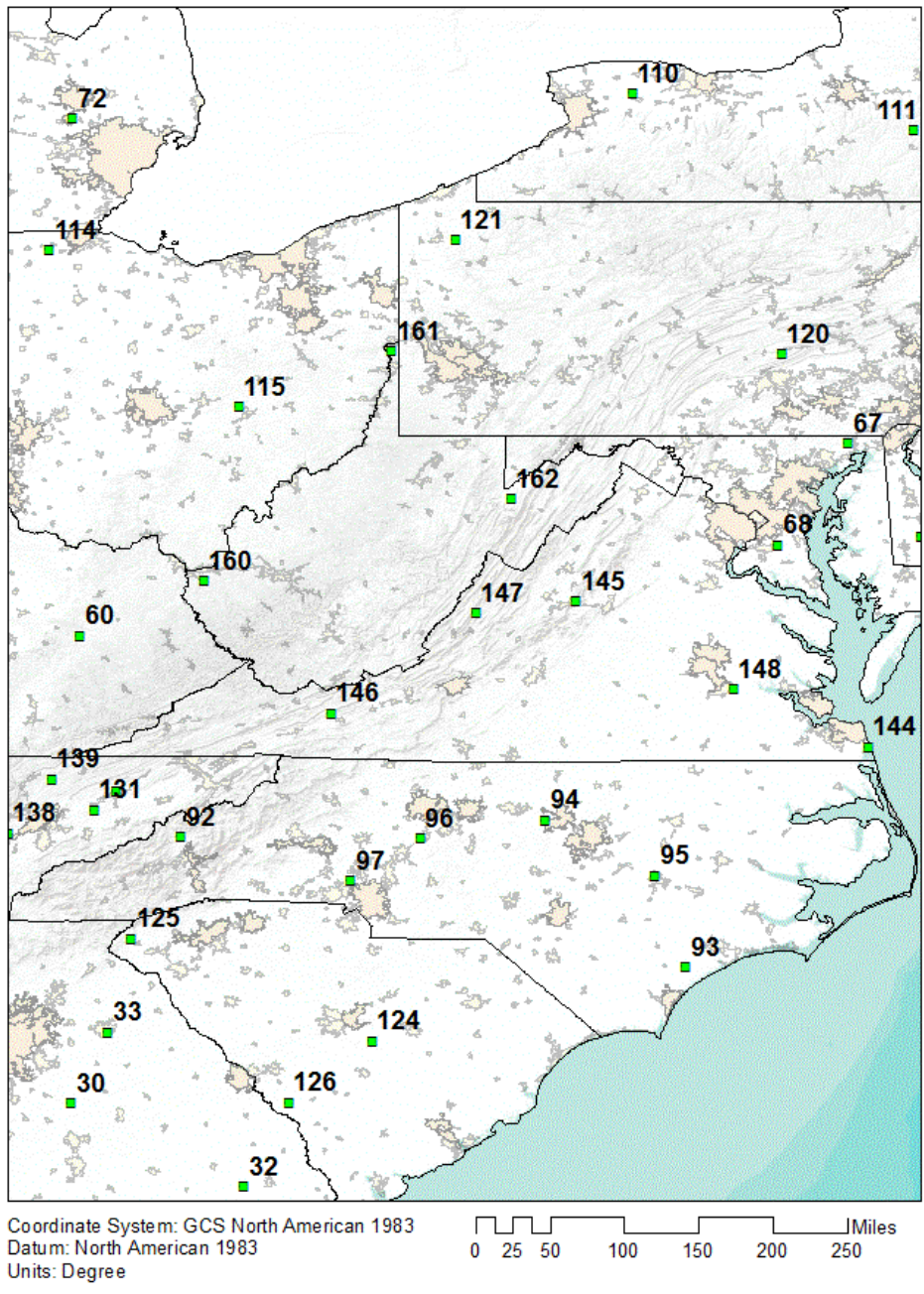
Maine



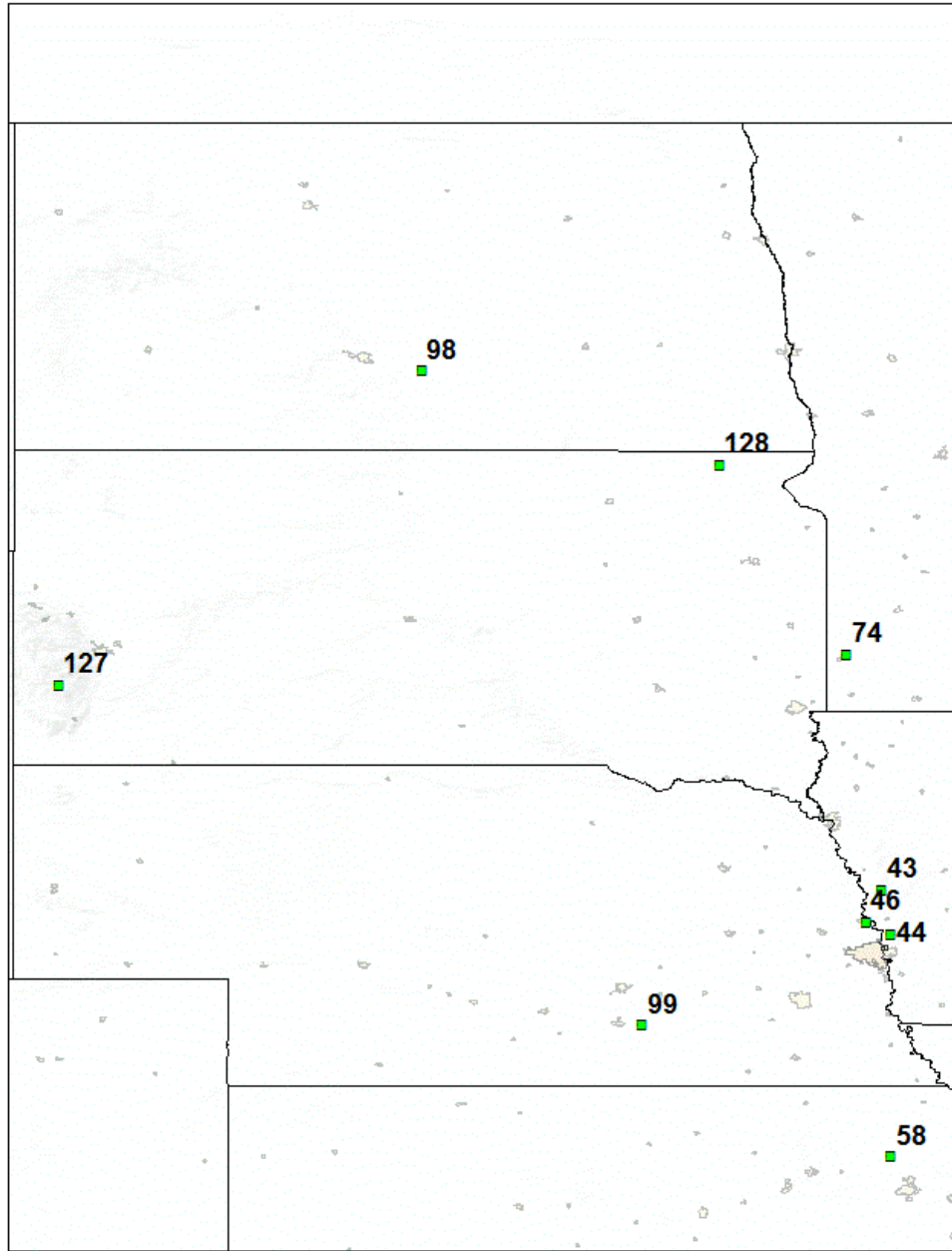
Missouri, Arkansas, Louisiana, and Mississippi



Montana and Wyoming



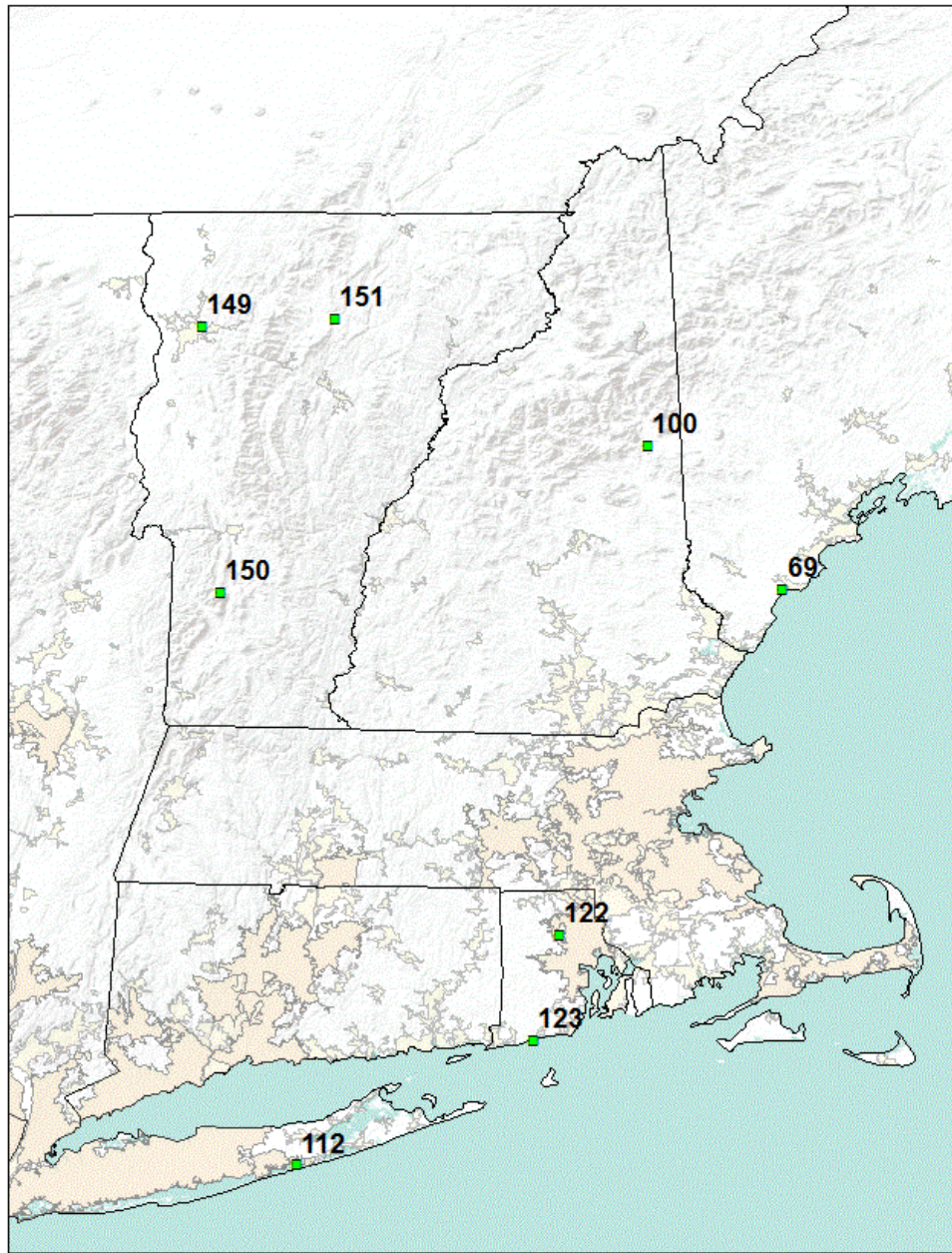
North Carolina, West Virginia, and Virginia



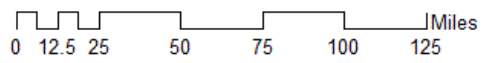
Coordinate System: GCS North American 1983
Datum: North American 1983
Units: Degree

0 25 50 100 150 200 250 Miles

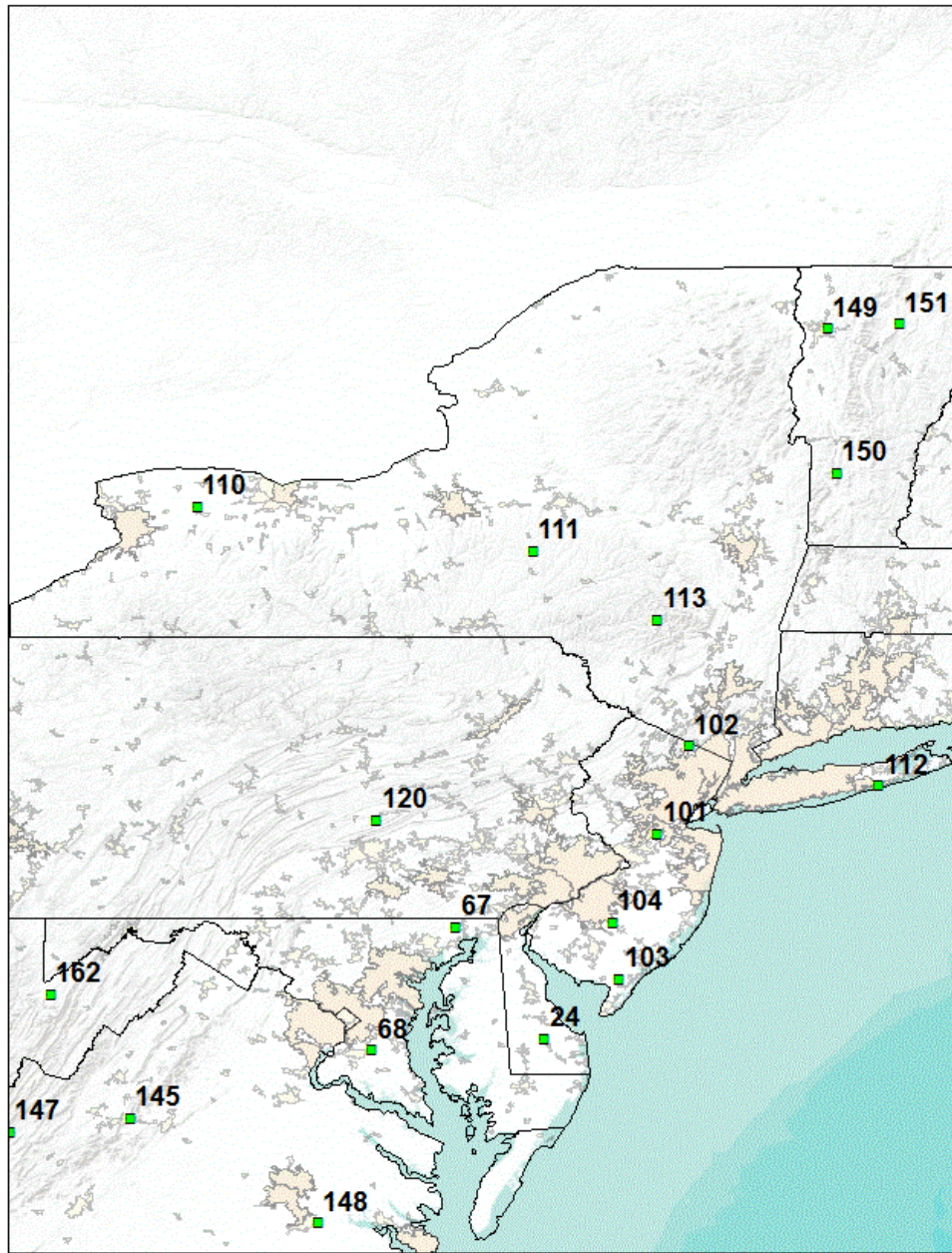
Nebraska, North Dakota, and South Dakota



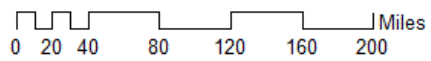
Coordinate System: GCS North American 1983
Datum: North American 1983
Units: Degree



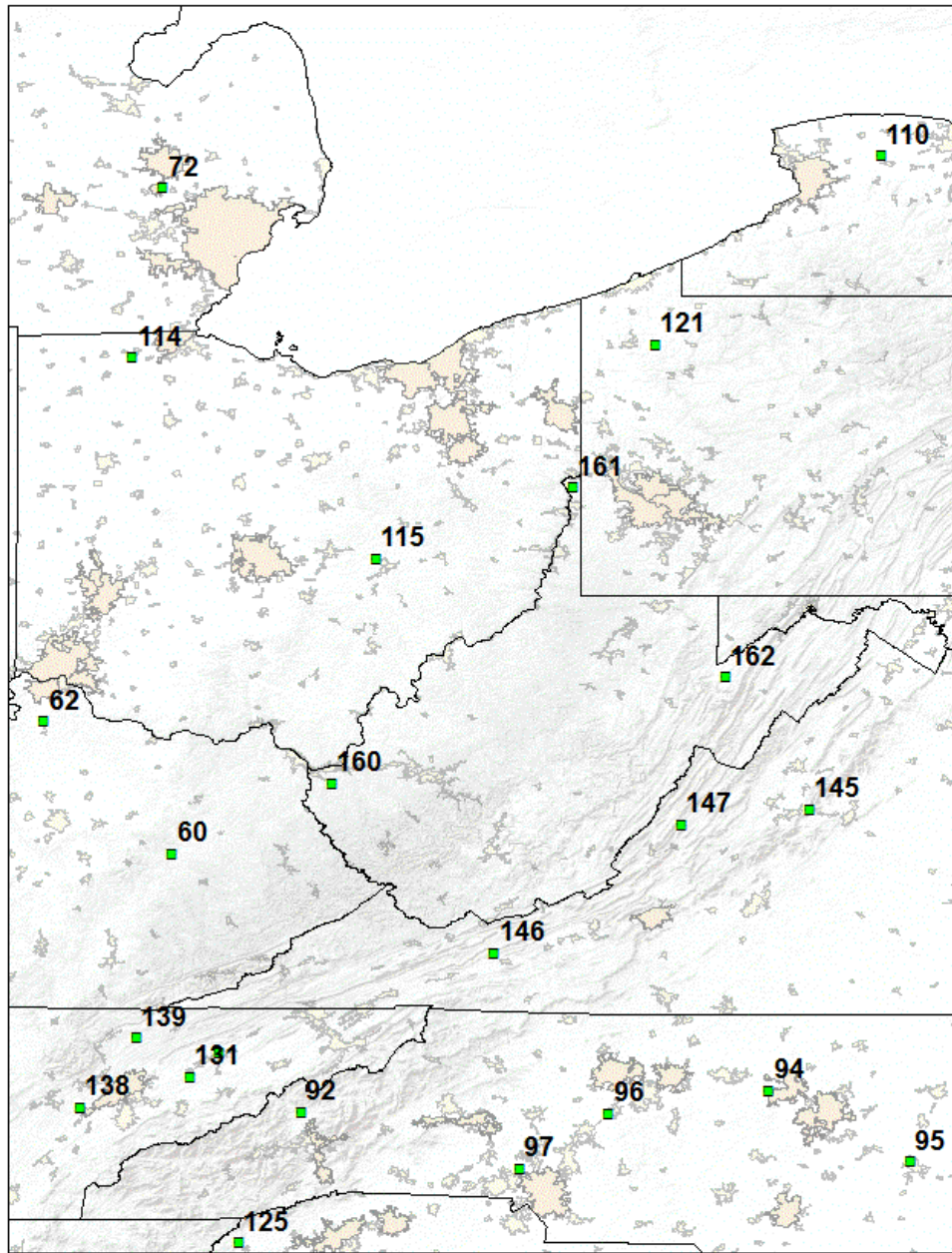
New Hampshire, Massachusetts, Vermont, Connecticut, and Rhode Island



Coordinate System: GCS North American 1983
 Datum: North American 1983
 Units: Degree



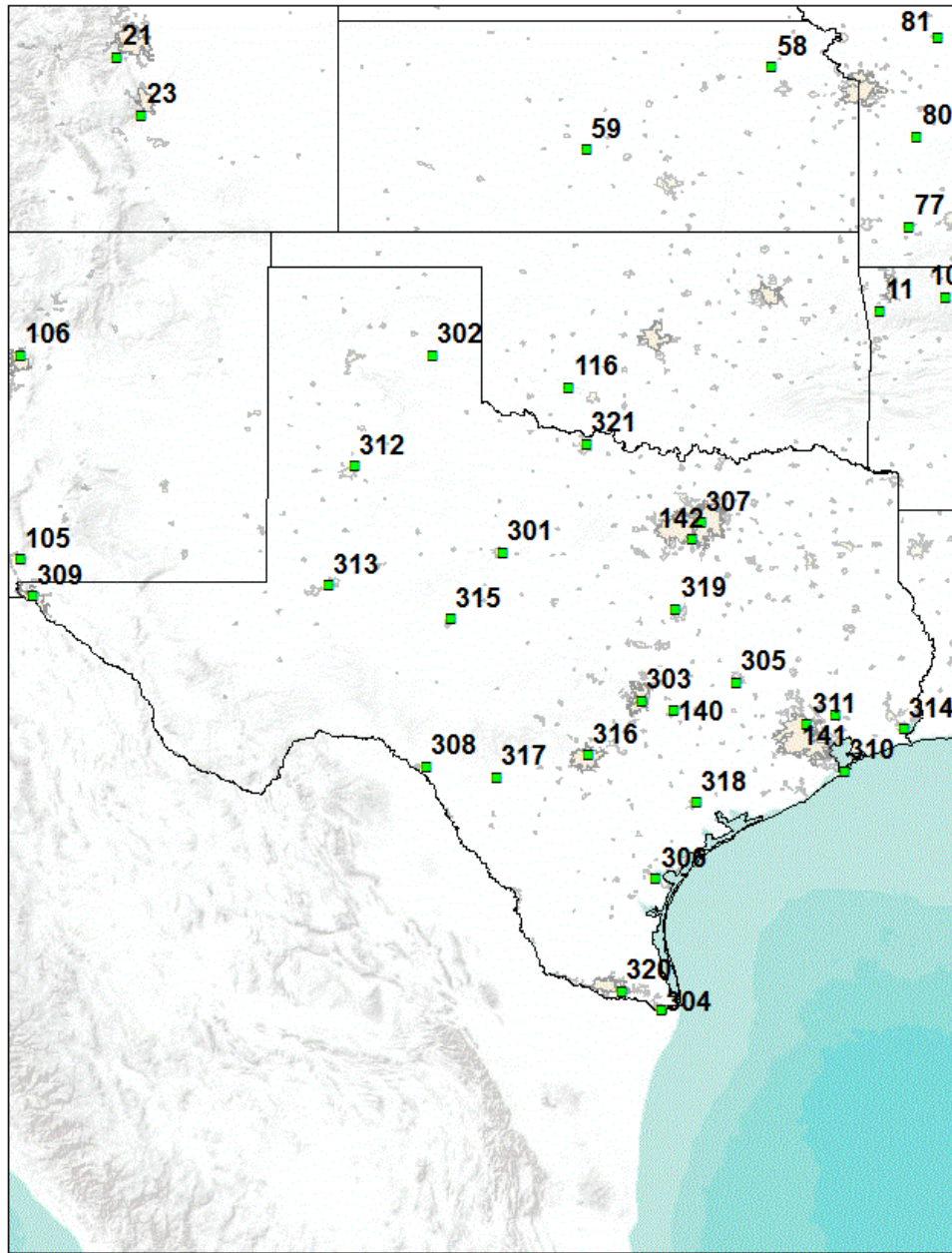
New York and New Jersey



Coordinate System: GCS North American 1983
 Datum: North American 1983
 Units: Degree

0 20 40 80 120 160 200 Miles

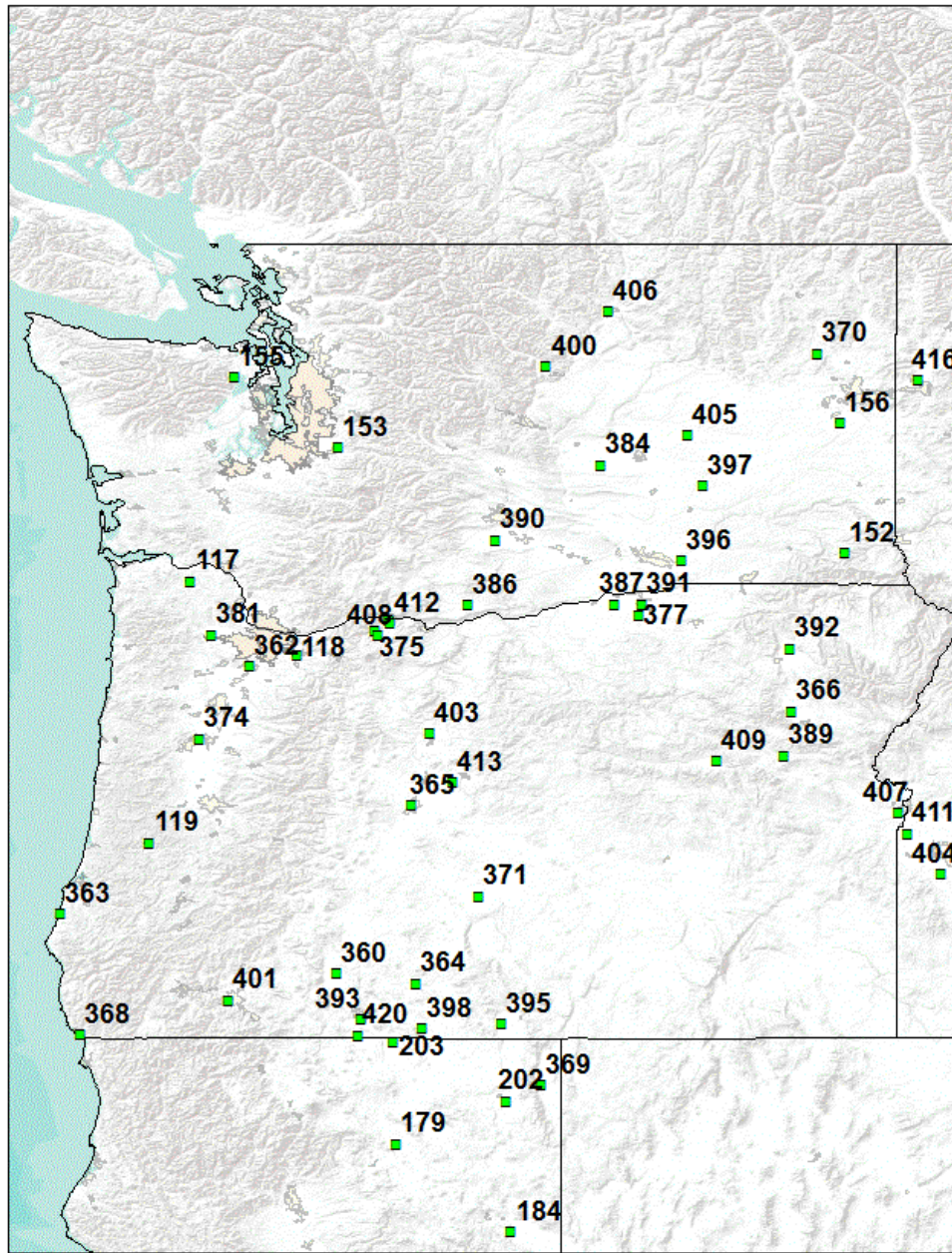
Ohio and West Virginia



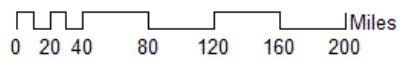
Coordinate System: GCS North American 1983
 Datum: North American 1983
 Units: Degree

0 37.5 75 150 225 300 375 Miles

Texas and Oklahoma



Coordinate System: GCS North American 1983
 Datum: North American 1983
 Units: Degree



Washington and Oregon

Appendix B: Average Monthly ET Values

ET_o ASCE Standardized Reference Equation

Map ID	State	Lat	Long	Elev	Station Name	Years of Data	ASCE Standardized Reference Evaporation Equation (ET _o) $\left(\frac{in}{day}\right)$												
							Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
1	AK	64.84	-147.62	454	Fairbanks Alaska														
2	AK	61.08	-149.73	1480	Rabbit Creek Alaska														
3	AK	57.8	-135.13	450	Hoonah Alaska														
4	AL	33.44	-86.081	600	Talladega Alabama	5	0.04	0.08	0.11	0.15	0.16	0.16	0.16	0.15	0.14	0.12	0.07	0.05	
5	AL	32.96	-87.171	363	Oakmulgee Alabama	7	0.05	0.06	0.10	0.13	0.15	0.16	0.15	0.14	0.14	0.10	0.07	0.05	
6	AL	34.14	-87.362	804	Bankhead Alabama	7	0.04	0.08	0.11	0.17	0.16	0.17	0.16	0.16	0.14	0.12	0.07	0.05	
7	AL	32.45	-85.641	283	Tuskegee Alabama	5	0.05	0.08	0.12	0.16	0.17	0.18	0.17	0.15	0.15	0.12	0.08	0.04	
8	AR	34.76	-90.722	253	Marianna Arkansas	3	0.04	0.06	0.11	0.15	0.16	0.20	0.18	0.17	0.14	0.10	0.07	0.04	
9	AR	34.27	-92.393	270	Sheridan Arkansas	6	0.04	0.07	0.12	0.08	0.19	0.20	0.21	0.19	0.17	0.11	0.08	0.04	
10	AR	36.07	-93.357	2365	Compton Arkansas	2	0.04	0.06	0.11	0.16	0.17	0.22	0.18	0.19	0.15	0.15	0.09	0.05	
11	AR	35.87	-94.297	1633	Strickler Arkansas	6	0.06	0.06	0.13	0.17	0.16	0.19	0.21	0.22	0.17	0.13	0.11	0.06	
12	AZ	32.4	-110.27	4175	Muleshoe Ranch AZ	13	0.07	0.13	0.17	0.24	0.28	0.30	0.24	0.22	0.23	0.20	0.12	0.08	
13	AZ	35.15	-111.68	7000	Flagstaff Arizona	10	0.04	0.07	0.11	0.16	0.20	0.24	0.22	0.18	0.17	0.13	0.07	0.04	
14	AZ	32.32	-110.81	3100	Saguaro Arizona	8	0.09	0.14	0.17	0.24	0.28	0.29	0.25	0.22	0.24	0.19	0.13	0.08	
15	AZ	34.2	-112.14	2960	Sunset Point Arizona	13	0.13	0.17	0.29	0.29	0.36	0.40	0.42	0.44	0.42	0.30	0.19	0.14	
16	CA	37.79	-122.14	1095	Oakland South CA	5	0.05	0.07	0.11	0.15	0.18	0.21	0.22	0.19	0.16	0.12	0.07	0.05	
17	CA	34.13	-118.41	1260	Beverly Hills California	6	0.07	0.08	0.10	0.14	0.14	0.15	0.12	0.12	0.10	0.08	0.08	0.07	
18	CA	34.46	-119.65	1500	Montecito California	6	0.08	0.08	0.11	0.15	0.17	0.19	0.18	0.18	0.15	0.12	0.11	0.07	
19	CA	32.69	-116.97	425	San Miguel California	5	0.07	0.09	0.11	0.15	0.16	0.17	0.18	0.18	0.14	0.12	0.08	0.06	
20	CA	34.29	-118.81	914	Simi Valley California	9	0.10	0.09	0.11	0.15	0.15	0.17	0.20	0.17	0.16	0.13	0.10	0.08	
21	CO	39.48	-105.21	8725	Waterton North CO	9	0.04	0.07	0.10	0.15	0.17	0.20	0.19	0.18	0.16	0.13	0.07	0.04	
22	CO	40.57	-105.23	6082	Redstone Colorado	11	0.04	0.04	0.06	0.07	0.13	0.15	0.16	0.13	0.13	0.05	0.05	0.03	
23	CO	38.66	-104.85	6700	Ft. Carson Colorado	10	0.05	0.08	0.11	0.16	0.18	0.22	0.21	0.18	0.17	0.13	0.08	0.05	
24	DE	38.74	-75.415	50	Redden Delaware	6	0.04	0.05	0.11	0.14	0.18	0.18	0.18	0.15	0.13	0.10	0.08	0.06	
25	FL	25.63	-80.58	5	Chekika Florida	8	0.11	0.14	0.17	0.21	0.20	0.18	0.16	0.16	0.16	0.16	0.13	0.11	
26	FL	29.11	-81.63	61	Central Florida	6	0.08	0.12	0.15	0.19	0.18	0.18	0.16	0.16	0.15	0.14	0.10	0.08	
27	FL	30.01	-84.424	50	St. Marks (West) Florida	7	0.10	0.11	0.13	0.14	0.14	0.15	0.15	0.13	0.13	0.12	0.10	0.10	
28	GA	30.92	-81.429	25	Stafford-CUIS Georgia	5	0.07	0.09	0.13	0.19	0.17	0.17	0.16	0.14	0.14	0.13	0.09	0.07	
29	GA	32.1	-81.083	10	Savannah NWR SC	6	0.06	0.09	0.13	0.17	0.19	0.18	0.17	0.14	0.14	0.12	0.08	0.06	
30	GA	33.21	-83.714	476	Oconee #1 Georgia	9	0.04	0.09	0.10	0.14	0.17	0.17	0.17	0.14	0.11	0.11	0.08	0.06	
31	GA	32.01	-82.9	250	McRae Georgia	6	0.06	0.09	0.12	0.17	0.18	0.18	0.16	0.15	0.15	0.13	0.08	0.06	
32	GA	32.39	-82.037	99	Metter Georgia	7	0.06	0.09	0.12	0.16	0.17	0.18	0.18	0.15	0.16	0.12	0.08	0.06	
33	GA	33.9	-83.366	675	Watkinsville Georgia	6	0.06	0.07	0.11	0.12	0.14	0.18	0.18	0.16	0.15	0.12	0.08	0.05	
34	GA	32.01	-84.33	526	Plains/Sumter Georgia	6	0.07	0.09	0.13	0.16	0.17	0.17	0.17	0.15	0.14	0.12	0.10	0.07	
35	GA	31.71	-82.388	109	Baxley Georgia	7	0.06	0.09	0.12	0.14	0.17	0.18	0.16	0.14	0.14	0.12	0.08	0.06	

ET_a ASCE Standardized Reference Equation

36	GA	33.83	-84.74	907	Dallas Georgia	7	0.05	0.06	0.10	0.12	0.13	0.16	0.17	0.16	0.14	0.12	0.07	0.05
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Station Map ID	State	Lat	Long	Elev	Station Name	Years of Data	ASCE Standardized Reference Evaporation Equation (ET _a) $\left(\frac{in}{day}\right)$											
							Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
37	HI	19.82	-155.33	6400	Hakalau Hawaii	7	0.10	0.13	0.15	0.15	0.15	0.16	0.16	0.15	0.17	0.14	0.12	0.10
38	HI	21.53	-158.23	20	Makua Range Hawaii	10	0.11	0.14	0.15	0.16	0.17	0.17	0.17	0.16	0.18	0.15	0.13	0.11
39	HI	21.5	-157.9	2293	Oahu Forest NWR HI	4	0.12	0.15	0.16	0.16	0.17	0.17	0.17	0.16	0.18	0.15	0.13	0.11
40	HI	19.67	-156.02	25	Kaloko-Honokohau HI	6	0.09	0.11	0.12	0.13	0.14	0.15	0.16	0.14	0.15	0.13	0.10	0.10
41	HI	21.5	-158.08	980	Schofield Barracks HI	10	0.11	0.13	0.15	0.17	0.16	0.16	0.16	0.16	0.17	0.15	0.12	0.11
42	IA	41.57	-93.258	898	Neal Smith Iowa	8	0.03	0.04	0.09	0.17	0.18	0.19	0.19	0.15	0.15	0.11	0.07	0.03
43	IA	41.83	-95.928	1070	Loess Hills State Forest IA	8	0.02	0.03	0.09	0.19	0.21	0.19	0.17	0.17	0.17	0.11	0.06	0.03
44	IA	41.42	-95.854	1260	Loess Hills Hitchcock IA	3	0.03	0.08	0.08	0.14	0.17	0.19	0.19	0.16	0.14	0.10	0.06	0.05
45	IA	40.65	-91.724	651	Shimek State Forest IA	3	0.02	0.01	0.08	0.15	0.17	0.18	0.19	0.15	0.13	0.10	0.07	0.01
46	IA	41.53	-96.083	732	Desoto Iowa	7	0.02	0.03	0.08	0.14	0.17	0.18	0.20	0.16	0.14	0.12	0.06	0.02
47	ID	42.97	-114.06	4260	Rock Lake Idaho	10	0.02	0.06	0.09	0.14	0.17	0.20	0.24	0.21	0.17	0.11	0.05	0.02
48	ID	43.03	-115.87	3000	Mountain Home Idaho	7	0.03	0.07	0.12	0.15	0.18	0.19	0.25	0.21	0.18	0.13	0.06	0.03
49	ID	43.65	-111.58	7040	Moody Idaho	10	0.01	0.02	0.07	0.12	0.15	0.18	0.21	0.18	0.15	0.11	0.06	0.01
50	ID	43.59	-115.99	3170	Lucky Peak Idaho	12	0.02	0.05	0.09	0.13	0.17	0.21	0.25	0.21	0.17	0.11	0.05	0.05
51	IL	37.25	-89.378	700	Bean Ridge Illinois	8	0.02	0.06	0.10	0.15	0.17	0.19	0.19	0.15	0.15	0.12	0.06	0.04
52	IL	41.34	-88.131	489	Midewin Tall Grass IL	5	0.02	0.03	0.08	0.16	0.19	0.21	0.19	0.16	0.15	0.11	0.07	0.02
53	IL	37.68	-89.003	450	Crab Orchard Illinois	7	0.04	0.05	0.10	0.15	0.15	0.19	0.17	0.16	0.13	0.11	0.08	0.04
54	IN	38.93	-85.363	900	Big Oaks Indiana	6	0.02	0.03	0.08	0.13	0.15	0.17	0.16	0.14	0.13	0.10	0.07	0.04
55	IN	41.63	-87.088	647	Bailly Indiana	5	0.02	0.03	0.07	0.13	0.16	0.17	0.16	0.13	0.12	0.09	0.06	0.02
56	IN	39	-86.423	750	Hardin Ridge Indiana	8	0.03	0.03	0.09	0.15	0.17	0.20	0.18	0.15	0.13	0.10	0.07	0.04
57	IN	38.13	-86.625	718	Tipsaw Lake Indiana	7	0.02	0.06	0.09	0.14	0.16	0.17	0.16	0.14	0.13	0.10	0.06	0.04
58	KS	39.34	-95.854	1100	Potawatomi Kansas	3	0.04	0.06	0.10	0.16	0.17	0.18	0.20	0.17	0.16	0.11	0.08	0.04
59	KS	38.17	-98.5	1773	Stafford Kansas	7	0.05	0.08	0.13	0.17	0.19	0.22	0.24	0.21	0.18	0.14	0.08	0.05
60	KY	37.77	-83.633	1300	Koomer Kentucky	8	0.04	0.05	0.10	0.17	0.16	0.17	0.15	0.15	0.13	0.11	0.08	0.04
61	KY	37.13	-86.148	774	Houchin Meadow KY	4	0.03	0.06	0.11	0.15	0.15	0.18	0.18	0.15	0.13	0.09	0.06	0.03
62	KY	38.77	-84.602	935	Crittenden Kentucky	6	0.02	0.04	0.08	0.14	0.15	0.17	0.16	0.14	0.14	0.12	0.09	0.03
63	KY	36.8	-85.38	853	Alpine Kentucky	6	0.04	0.05	0.10	0.14	0.15	0.18	0.17	0.16	0.13	0.10	0.06	0.04
64	LA	30	-92.893	5	Lacassine Louisiana	6	0.06	0.09	0.12	0.16	0.17	0.18	0.16	0.15	0.15	0.13	0.09	0.06
65	LA	30.32	-89.933	11	Big Branch NWR LA	8	0.05	0.06	0.10	0.12	0.13	0.13	0.11	0.11	0.13	0.10	0.08	0.05
66	LA	32.8	-93.067	230	Caney - FTS Louisiana	7	0.06	0.09	0.12	0.16	0.17	0.18	0.16	0.16	0.15	0.13	0.09	0.06
67	MD	39.65	-76.139	300	Susquehanna Maryland	5	0.03	0.04	0.10	0.15	0.15	0.16	0.16	0.15	0.12	0.09	0.06	0.04
68	MD	38.65	-76.821	200	Cedarville Maryland	5	0.03	0.07	0.10	0.15	0.16	0.18	0.17	0.15	0.13	0.10	0.07	0.05
69	ME	43.35	-70.548	20	Rachel Carson Maine	5	0.02	0.03	0.07	0.10	0.13	0.14	0.14	0.12	0.10	0.07	0.04	0.02

ET_o ASCE Standardized Reference Equation

Station Map ID	State	Lat	Long	Elev	Station Name	ASCE Standardized Reference Evaporation Equation (ET _o) ($\frac{in}{day}$)												
						Years of Data	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
70	ME	44.9	-68.64	114	Sunkhaze Meadows ME	9	0.01	0.02	0.04	0.10	0.12	0.14	0.14	0.13	0.10	0.06	0.03	0.01
71	MI	44.72	-84.709	1120	Grayling Michigan	6	0.01	0.02	0.06	0.11	0.16	0.16	0.15	0.12	0.08	0.05	0.03	0.01
72	MI	42.82	-83.696	906	Holly Michigan	4	0.02	0.02	0.06	0.11	0.16	0.17	0.17	0.15	0.12	0.09	0.05	0.02
73	MN	46.84	-92.462	1330	Saginaw Minnesota	4	0.01	0.02	0.04	0.10	0.13	0.13	0.14	0.12	0.10	0.07	0.03	0.01
74	MN	44.03	-96.267	1660	Redstn Minnesota	3	0.01	0.02	0.04	0.12	0.17	0.19	0.18	0.15	0.13	0.09	0.04	0.01
75	MN	45.3	-93.101	900	Carlos Avery Minnesota	4	0.01	0.02	0.04	0.11	0.17	0.17	0.18	0.15	0.11	0.09	0.03	0.01
76	MO	37.5	-91.259	1333	Sinkin Missouri	9	0.04	0.06	0.10	0.15	0.17	0.18	0.18	0.16	0.14	0.11	0.06	0.03
77	MO	37.07	-93.897	1235	Mt. Vernon Missouri	6	0.05	0.08	0.11	0.15	0.22	0.17	0.20	0.17	0.15	0.11	0.07	0.05
78	MO	37.97	-92.901	1090	Macks Creek Missouri	5	0.04	0.07	0.12	0.16	0.17	0.17	0.20	0.17	0.15	0.12	0.07	0.05
79	MO	38.81	-92.257	798	Ashland Missouri	5	0.04	0.04	0.10	0.15	0.16	0.18	0.19	0.17	0.15	0.12	0.06	0.04
80	MO	38.35	-93.775	750	MDC Clinton Hqtrs MO	5	0.04	0.05	0.09	0.14	0.16	0.19	0.18	0.18	0.14	0.12	0.07	0.04
81	MO	39.77	-93.485	780	Chillicothe Missouri	6	0.03	0.04	0.09	0.15	0.17	0.10	0.20	0.17	0.15	0.12	0.07	0.03
82	MO	37.76	-90	946	Farmington Missouri	6	0.04	0.07	0.11	0.15	0.17	0.18	0.19	0.17	0.15	0.11	0.06	0.04
83	MO	39.87	-92.521	840	Atlanta Missouri	7	0.03	0.04	0.09	0.15	0.17	0.18	0.18	0.16	0.14	0.12	0.06	0.03
84	MS	31.95	-90.381	150	Copiah Mississippi	7	0.05	0.08	0.12	0.15	0.17	0.18	0.16	0.17	0.16	0.13	0.09	0.06
85	MS	30.45	-88.662	25	Sandhill Crane MS	7	0.06	0.10	0.13	0.17	0.18	0.17	0.17	0.15	0.16	0.14	0.09	0.07
86	MS	34.79	-88.218	300	Tishomingo Mississippi	5	0.04	0.07	0.11	0.15	0.16	0.18	0.17	0.16	0.14	0.12	0.07	0.05
87	MS	34.62	-89.314	500	Winborn Mississippi	7	0.04	0.07	0.12	0.14	0.16	0.18	0.17	0.16	0.15	0.11	0.07	0.05
88	MS	32.36	-90.844	248	Warren Mississippi	6	0.06	0.09	0.13	0.16	0.18	0.19	0.18	0.16	0.14	0.12	0.08	0.07
89	MT	47.04	-113.98	7920	Point 6 Montana	10	0.01	0.01	0.02	0.03	0.08	0.13	0.24	0.19	0.11	0.04	0.02	0.01
90	MT	45.45	-111.22	5370	Shenago Montana	3	0.02	0.03	0.03	0.05	0.11	0.15	0.25	0.23	0.16	0.07	0.03	0.02
91	MT	45.73	-108.4	4020	Soda Springs Montana	7	0.05	0.06	0.10	0.15	0.27	0.37	0.59	0.52	0.38	0.18	0.08	0.05
92	NC	35.8	-82.65	2171	7 Mile Ridge NC	6	0.06	0.07	0.10	0.15	0.15	0.15	0.14	0.13	0.11	0.10	0.07	0.05
93	NC	34.53	-77.722	20	Back Island NC	8	0.06	0.09	0.12	0.17	0.17	0.17	0.17	0.15	0.15	0.12	0.08	0.06
94	NC	35.97	-79.092	565	Duke Forest NC	10	0.05	0.08	0.10	0.15	0.17	0.16	0.16	0.14	0.13	0.10	0.08	0.05
95	NC	35.43	-78.023	87	Finch's Station NC	4	0.05	0.08	0.12	0.16	0.16	0.17	0.16	0.14	0.14	0.10	0.07	0.05
96	NC	35.79	-80.312	750	Lexington NC	7	0.06	0.10	0.13	0.16	0.16	0.17	0.16	0.14	0.13	0.11	0.07	0.06
97	NC	35.38	-80.993	500	Mt. Island Lake NC	6	0.05	0.09	0.12	0.16	0.18	0.17	0.17	0.15	0.14	0.12	0.08	0.05
98	ND	46.68	-100.24	1835	Long Lake NWR ND	3	0.02	0.03	0.08	0.13	0.15	0.16	0.18	0.16	0.12	0.08	0.05	0.01
99	NE	40.57	-98.17	1790	Rainwater Basin NE	2	0.03	0.05	0.10	0.15	0.18	0.21	0.20	0.17	0.15	0.12	0.07	0.03
100	NH	43.98	-71.141	460	White Mountain NF NH	6	0.02	0.02	0.04	0.10	0.12	0.14	0.15	0.13	0.09	0.07	0.03	0.02
101	NJ	40.41	-74.494	116	New Middlesex County NJ	5	0.02	0.03	0.09	0.14	0.17	0.17	0.18	0.16	0.14	0.10	0.09	0.04
102	NJ	41.12	-74.24	567	Ringwood New Jersey	3	0.01	0.03	0.12	0.12	0.14	0.14	0.13	0.11	0.10	0.13	0.11	0.05
103	NJ	39.23	-74.804	87	Woodbine New Jersey	4	0.04	0.05	0.11	0.14	0.17	0.17	0.18	0.16	0.13	0.12	0.09	0.09
104	NJ	39.68	-74.865	116	Ancora Hospital NJ	6	0.03	0.04	0.10	0.16	0.17	0.16	0.20	0.15	0.12	0.09	0.07	0.08

ET₀ ASCE Standardized Reference Equation

Station Map ID	State	Lat	Long	Elev	Station Name	ASCE Standardized Reference Evaporation Equation (ET ₀) ($\frac{in}{day}$)												
						Years of Data	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
105	NM	32.32	-106.59	6172	Dripping Springs NM	11	0.07	0.11	0.16	0.23	0.26	0.25	0.22	0.18	0.18	0.14	0.10	0.07
106	NM	35.23	-106.59	5000	Sandia Lakes New Mexico	6	0.05	0.08	0.13	0.19	0.22	0.24	0.20	0.17	0.17	0.13	0.08	0.05
107	NV	39.24	-119.88	6310	Little Valley Nevada	8	0.03	0.06	0.09	0.13	0.18	0.21	0.23	0.19	0.17	0.11	0.06	0.03
108	NV	46.22	-112.23	6860	Galena Montana	8	0.04	0.06	0.10	0.13	0.17	0.20	0.23	0.20	0.17	0.11	0.07	0.05
109	NV	36.14	-115.43	3760	Red Rock Nevada	12	0.07	0.11	0.15	0.22	0.26	0.31	0.30	0.27	0.26	0.19	0.11	0.07
110	NY	43.06	-78.24	2700	Iroquois New York	8	0.02	0.03	0.04	0.11	0.13	0.14	0.14	0.12	0.09	0.07	0.04	0.02
111	NY	42.7	-75.5	1100	Sherburne New York	7	0.02	0.03	0.05	0.12	0.13	0.14	0.14	0.12	0.09	0.07	0.04	0.02
112	NY	40.8	-72.7	100	Eastport New York	6	0.02	0.04	0.10	0.14	0.17	0.16	0.18	0.16	0.13	0.10	0.07	0.06
113	NY	42.14	-74.494	1950	Belleayre Mt. New York	5	0.03	0.04	0.06	0.11	0.13	0.14	0.14	0.11	0.09	0.08	0.04	0.02
114	OH	41.53	-83.929	612	Maumee Ohio	5	0.01	0.01	0.07	0.12	0.16	0.18	0.17	0.15	0.12	0.08	0.05	0.01
115	OH	40	-82.081	641	Blue Rock Ohio	3	0.01	0.02	0.08	0.13	0.14	0.16	0.16	0.13	0.12	0.08	0.05	0.01
116	OK	34.77	-98.746	1800	Wichita Oklahoma	9	0.14	0.20	0.26	0.34	0.41	0.48	0.60	0.53	0.40	0.30	0.17	0.15
117	OR	46.02	-123.27	1090	Miller Oregon	5	0.02	0.04	0.07	0.10	0.14	0.15	0.18	0.14	0.12	0.07	0.04	0.02
118	OR	45.37	-122.33	744	Eagle Creek Oregon	6	0.02	0.03	0.07	0.09	0.13	0.14	0.18	0.16	0.13	0.06	0.03	0.02
119	OR	43.72	-123.63	1550	Devils Graveyard Oregon	6	0.02	0.04	0.07	0.10	0.13	0.15	0.18	0.16	0.13	0.08	0.03	0.02
120	PA	40.52	-76.778	1720	Wolf Pond Pennsylvania	4	0.02	0.03	0.09	0.13	0.14	0.16	0.16	0.14	0.11	0.09	0.05	0.02
121	PA	41.63	-79.957	1800	Erie Pennsylvania	3	0.02	0.03	0.10	0.15	0.15	0.17	0.17	0.14	0.14	0.10	0.05	0.02
122	RI	41.82	-71.533	278	Snake Den Rhode Island	3	0.02	0.03	0.08	0.14	0.15	0.14	0.17	0.15	0.12	0.09	0.04	0.02
123	RI	41.35	-71.65	40	Ninigret Rhode Island	7	0.03	0.04	0.09	0.13	0.15	0.15	0.15	0.14	0.12	0.10	0.08	0.07
124	SC	33.82	-80.781	122	Congaree South Carolina	5	0.06	0.07	0.10	0.17	0.18	0.19	0.18	0.15	0.16	0.11	0.07	0.05
125	SC	34.81	-83.125	1600	Andrew Pickens SC	8	0.05	0.08	0.11	0.15	0.15	0.16	0.16	0.14	0.13	0.10	0.08	0.05
126	SC	33.21	-81.591	390	Savriv South Carolina	7	0.06	0.08	0.12	0.16	0.16	0.17	0.16	0.14	0.14	0.11	0.07	0.06
127	SD	43.75	-103.63	5200	Custer South Dakota	3	0.04	0.03	0.08	0.14	0.16	0.19	0.22	0.18	0.17	0.11	0.06	0.03
128	SD	45.8	-97.451	2010	Marshall Co. SD	2	0.01	0.02	0.03	0.12	0.03	0.18	0.19	0.16	0.13	0.09	0.04	0.01
129	TN	36.26	-83.277	1163	Hamblen Co HQ TN	7	0.04	0.06	0.10	0.14	0.15	0.15	0.15	0.13	0.12	0.09	0.06	0.04
130	TN	35.13	-85.428	1920	Prentice Cooper SF TN	7	0.05	0.07	0.11	0.15	0.16	0.17	0.16	0.14	0.13	0.10	0.07	0.05
131	TN	36.07	-83.489	1750	Jefferson Co Tower TN	6	0.04	0.06	0.11	0.14	0.15	0.15	0.15	0.14	0.14	0.09	0.06	0.04
132	TN	36.54	-86.003	970	Lafayette Work Center Tn	7	0.04	0.06	0.12	0.14	0.15	0.17	0.16	0.14	0.13	0.10	0.06	0.04
133	TN	35.38	-86.766	1150	Lewisburg Tower Tn	6	0.04	0.06	0.10	0.15	0.16	0.17	0.17	0.15	0.13	0.10	0.07	0.05
134	TN	36.07	-87.283	706	Burns Tennessee	7	0.04	0.06	0.11	0.15	0.16	0.17	0.16	0.15	0.13	0.10	0.07	0.06
135	TN	35.32	-87.458	860	Meriwether Lewis TN	7	0.04	0.06	0.10	0.14	0.15	0.16	0.16	0.15	0.13	0.10	0.06	0.04
136	TN	35.92	-84.997	1770	Crossville Area Office Tn	6	0.04	0.06	0.11	0.14	0.14	0.15	0.16	0.14	0.12	0.09	0.06	0.04

ET₀ ASCE Standardized Reference Equation

Station Map ID	State	Lat	Long	Elev	Station Name	ASCE Standardized Reference Evaporation Equation (ET ₀) ($\frac{in}{day}$)												
						Years of Data	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
137	TN	35.99	-89.406	208	Dyersburg Tennessee	7	0.04	0.07	0.12	0.16	0.19	0.19	0.18	0.17	0.16	0.14	0.08	0.04
138	TN	35.84	-84.331	1240	Lenoir City Tennessee	7	0.04	0.07	0.11	0.14	0.15	0.16	0.15	0.14	0.13	0.09	0.06	0.05
139	TN	36.37	-83.899	1657	Chuck Swan SF TN	7	0.04	0.07	0.10	0.14	0.15	0.16	0.15	0.14	0.13	0.09	0.06	0.04
140	TX	30.17	-97.256	383	Bastrop Texas	7	0.07	0.10	0.14	0.18	0.21	0.24	0.24	0.23	0.19	0.14	0.09	0.07
141	TX	30.11	-94.931	100	Dayton Texas	7	0.06	0.08	0.12	0.15	0.17	0.19	0.17	0.15	0.15	0.11	0.07	0.06
142	TX	32.61	-96.993	520	Cedar Hill SP Texas	7	0.07	0.09	0.13	0.17	0.20	0.23	0.24	0.23	0.18	0.14	0.08	0.08
143	UT	41.15	-111.92	5100	Bues Canyon Utah	12	0.02	0.05	0.09	0.14	0.18	0.21	0.24	0.21	0.18	0.12	0.07	0.02
144	VA	36.68	-75.933	1200	Back Bay Virginia	8	0.05	0.08	0.11	0.15	0.16	0.17	0.17	0.15	0.14	0.11	0.08	0.06
145	VA	38.1	-78.785	2080	Sawmill Ridge Virginia	4	0.04	0.06	0.09	0.13	0.13	0.14	0.13	0.12	0.12	0.08	0.06	0.04
146	VA	37.01	-81.179	2540	Stony Fork Virginia	5	0.02	0.06	0.09	0.13	0.13	0.14	0.13	0.12	0.11	0.08	0.06	0.04
147	VA	37.99	-79.759	2580	Lime Kiln Virginia	4	0.04	0.07	0.11	0.15	0.15	0.15	0.15	0.13	0.12	0.09	0.06	0.04
148	VA	37.25	-77.25	50	James River Virginia	6	0.05	0.08	0.11	0.16	0.16	0.17	0.16	0.13	0.14	0.10	0.08	0.06
149	VT	44.51	-73.116	340	Essex Junction Vermont	6	0.02	0.02	0.04	0.11	0.14	0.16	0.17	0.14	0.11	0.07	0.04	0.02
150	VT	43.33	-73.033	668	Sweezy Vermont	9	0.02	0.03	0.04	0.11	0.13	0.14	0.14	0.12	0.10	0.08	0.04	0.02
151	VT	44.54	-72.529	1200	Elmore Vermont	6	0.02	0.02	0.04	0.09	0.13	0.13	0.14	0.12	0.09	0.07	0.03	0.01
152	WA	46.27	-117.5	4500	Alder Ridge Washington	8	0.04	0.05	0.07	0.12	0.15	0.18	0.25	0.19	0.14	0.09	0.07	0.03
153	WA	47.2	-121.96	771	Enumclaw Washington	6	0.03	0.04	0.07	0.10	0.10	0.15	0.16	0.13	0.08	0.06	0.05	0.04
154	WA	34.1	-118.22	920	Mt. Washington CA	7	0.02	0.04	0.07	0.09	0.12	0.14	0.17	0.15	0.12	0.06	0.03	0.02
155	WA	47.82	-122.88	62	Quilcene Washington	5	0.02	0.03	0.05	0.09	0.11	0.12	0.15	0.12	0.07	0.05	0.03	0.01
156	WA	47.42	-117.53	2230	Turnbull NWR WA	8	0.01	0.03	0.06	0.10	0.14	0.17	0.20	0.17	0.12	0.08	0.03	0.01
157	WI	43.57	-88.609	800	Horicon Wisconsin	8	0.02	0.02	0.09	0.18	0.18	0.19	0.12	0.10	0.11	0.12	0.11	0.02
158	WI	43.1	-89.333	857	Wautoma Wisconsin	5	0.01	0.02	0.05	0.12	0.16	0.17	0.18	0.14	0.10	0.07	0.04	0.01
159	WI	43.1	-90	1260	Dodgeville Wisconsin	5	0.02	0.02	0.05	0.12	0.16	0.18	0.18	0.14	0.12	0.09	0.06	0.02
160	WV	38.3	-82.417	735	Beech Fork West Virginia	3	0.02	0.06	0.10	0.13	0.14	0.15	0.15	0.13	0.13	0.09	0.06	0.04
161	WV	40.54	-80.584	1013	Tomlinson Run WV	6	0.01	0.01	0.08	0.12	0.15	0.15	0.15	0.14	0.12	0.09	0.07	0.04
162	WV	39.11	-79.426	3853	Davis (Bearden) WV	3	0.03	0.02	0.09	0.13	0.13	0.13	0.13	0.11	0.10	0.08	0.06	0.04
163	WY	42.71	-106.35	7740	Casper Mountain WY	11	0.03	0.07	0.11	0.14	0.17	0.20	0.23	0.21	0.17	0.12	0.07	0.03

ET₀ASCE Standardized Reference Equation

Map ID	State	Lat	Long	Elev	Station Name	Years of Data	CIMIS Average Monthly Rates (ET ₀) ($\frac{in}{day}$)											
							Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
164	CA	36.336222	-120.112906	285	Five Points	N/A	0.04	0.07	0.13	0.20	0.25	0.28	0.28	0.26	0.21	0.15	0.08	0.04
165	CA	35.532556	-119.281794	360	Shafter/USDA	N/A	0.04	0.07	0.12	0.19	0.24	0.27	0.27	0.24	0.19	0.13	0.07	0.04
166	CA	38.535694	-121.776361	60	Davis	N/A	0.03	0.06	0.11	0.18	0.22	0.27	0.27	0.24	0.19	0.14	0.07	0.04
167	CA	36.851222	-120.590922	185	Firebaugh	N/A	0.03	0.06	0.12	0.19	0.24	0.27	0.27	0.23	0.18	0.13	0.07	0.03
168	CA	40.044053	-122.165514	250	Gerber	N/A	0.03	0.06	0.11	0.17	0.21	0.26	0.28	0.24	0.19	0.13	0.06	0.04
169	CA	39.608639	-121.824431	130	Durham	N/A	0.03	0.06	0.10	0.17	0.21	0.25	0.25	0.22	0.18	0.11	0.06	0.03
170	CA	38.753136	-120.733603	2780	Camino	N/A	0.05	0.07	0.10	0.15	0.19	0.25	0.29	0.26	0.21	0.14	0.06	0.04
171	CA	36.157972	-119.851425	193	Stratford	N/A	0.03	0.07	0.13	0.20	0.25	0.29	0.28	0.25	0.20	0.13	0.07	0.03
172	CA	36.768167	-121.773636	9	Castroville	N/A	0.05	0.06	0.10	0.14	0.15	0.16	0.13	0.12	0.10	0.08	0.05	0.04
173	CA	35.867750	-119.894900	340	Kettleman	N/A	0.03	0.07	0.13	0.20	0.24	0.28	0.29	0.26	0.20	0.14	0.07	0.04
174	CA	38.870600	-121.546075	32	Nicolaus	N/A	0.03	0.06	0.10	0.16	0.20	0.25	0.26	0.22	0.17	0.11	0.05	0.03
175	CA	39.226861	-122.024800	55	Colusa	N/A	0.03	0.06	0.11	0.17	0.21	0.25	0.27	0.23	0.18	0.12	0.06	0.03
176	CA	37.358514	-118.405528	4170	Bishop	N/A	0.06	0.09	0.15	0.20	0.23	0.25	0.26	0.24	0.18	0.13	0.08	0.06
177	CA	36.597444	-119.504036	337	Parlier	N/A	0.03	0.07	0.12	0.17	0.22	0.25	0.26	0.22	0.17	0.11	0.06	0.03
178	CA	33.042986	-115.415847	-110	Calipatria	N/A	0.08	0.11	0.17	0.23	0.28	0.31	0.30	0.28	0.23	0.17	0.10	0.07
179	CA	41.063767	-121.456019	3310	McArthur	N/A	0.02	0.05	0.09	0.14	0.18	0.23	0.27	0.23	0.17	0.10	0.04	0.02
180	CA	33.964942	-117.336983	1020	Riverside	N/A	0.08	0.10	0.13	0.18	0.19	0.22	0.23	0.22	0.18	0.13	0.10	0.08
181	CA	35.305442	-120.661783	330	San Luis Obispo	N/A	0.07	0.09	0.12	0.17	0.18	0.21	0.21	0.20	0.16	0.13	0.10	0.07
182	CA	35.649861	-119.959300	705	Blackwell's Corner	N/A	0.04	0.07	0.12	0.18	0.23	0.26	0.27	0.25	0.19	0.13	0.06	0.04
183	CA	37.096694	-120.753897	95	Los Banos	N/A	0.03	0.06	0.11	0.18	0.24	0.27	0.28	0.24	0.18	0.12	0.06	0.03
184	CA	40.289953	-120.434900	4005	Buntingville	N/A	0.03	0.06	0.11	0.16	0.20	0.24	0.27	0.24	0.18	0.11	0.05	0.03
185	CA	39.691822	-122.153506	198	Orland	N/A	0.03	0.06	0.11	0.17	0.21	0.25	0.26	0.22	0.18	0.12	0.06	0.04
186	CA	33.486650	-117.228269	1420	Temecula	N/A	0.09	0.10	0.12	0.16	0.18	0.21	0.22	0.22	0.18	0.13	0.11	0.09
187	CA	34.583144	-120.079239	490	Santa Ynez	N/A	0.05	0.08	0.11	0.17	0.19	0.21	0.21	0.19	0.15	0.12	0.07	0.05
188	CA	32.759575	-115.732067	40	Seeley	N/A	0.09	0.13	0.19	0.26	0.31	0.34	0.30	0.27	0.23	0.18	0.11	0.07
189	CA	37.834822	-121.223194	33	Manteca	N/A	0.03	0.06	0.11	0.17	0.21	0.25	0.26	0.23	0.17	0.11	0.05	0.03
190	CA	37.645222	-121.187764	35	Modesto	N/A	0.03	0.06	0.11	0.17	0.22	0.25	0.25	0.22	0.16	0.11	0.06	0.03
191	CA	33.688450	-117.721178	410	Irvine	N/A	0.07	0.09	0.12	0.16	0.17	0.20	0.20	0.20	0.15	0.12	0.09	0.07
192	CA	38.428475	-122.410206	190	Oakville	N/A	0.03	0.05	0.09	0.16	0.19	0.23	0.23	0.21	0.16	0.11	0.05	0.04
193	CA	34.056589	-117.813069	730	Pomona	N/A	0.06	0.07	0.11	0.15	0.16	0.19	0.21	0.21	0.16	0.11	0.08	0.06
194	CA	36.820833	-119.742308	339	Fresno State	N/A	0.03	0.06	0.10	0.17	0.22	0.27	0.28	0.25	0.18	0.12	0.06	0.03
195	CA	38.403550	-122.799931	80	Santa Rosa	N/A	0.03	0.05	0.09	0.14	0.17	0.20	0.20	0.19	0.14	0.10	0.05	0.03
196	CA	39.252561	-121.315669	940	Browns Valley	N/A	0.03	0.06	0.10	0.16	0.20	0.25	0.27	0.25	0.19	0.13	0.07	0.03
197	CA	39.006747	-123.080122	1160	Hopland	N/A	0.03	0.06	0.10	0.15	0.19	0.23	0.26	0.23	0.17	0.11	0.05	0.03
198	CA	36.360500	-119.059353	480	Lindcove	N/A	0.03	0.06	0.10	0.16	0.21	0.25	0.26	0.23	0.17	0.11	0.05	0.03
199	CA	32.806183	-115.446258	-50	Meloland	N/A	0.08	0.12	0.18	0.25	0.29	0.31	0.29	0.27	0.23	0.17	0.10	0.07

ET₀ASCE Standardized Reference Equation

Station Map ID	State	Lat	Long	Elev	Station Name	CIMIS Average Monthly Rates (ET ₀) ($\frac{in}{day}$)												
						Years of Data	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
200	CA	34.942525	-119.673800	2290	Cuyama	N/A	0.07	0.09	0.12	0.18	0.22	0.26	0.27	0.25	0.20	0.15	0.09	0.06
201	CA	36.609444	-121.529300	120	Salinas South	N/A	0.04	0.06	0.11	0.16	0.18	0.21	0.20	0.19	0.14	0.11	0.06	0.04
202	CA	41.438214	-120.480308	4405	Alturas	N/A	0.03	0.05	0.09	0.12	0.16	0.21	0.24	0.21	0.15	0.09	0.04	0.02
203	CA	41.958869	-121.472372	4035	Tule Lake	N/A	0.02	0.05	0.09	0.13	0.17	0.21	0.23	0.21	0.16	0.09	0.03	0.02
204	CA	37.231861	-120.880819	75	Kesterson	N/A	0.03	0.06	0.11	0.18	0.24	0.27	0.28	0.24	0.18	0.12	0.06	0.03
205	CA	34.471333	-119.869294	640	Goleta Foothills	N/A	0.07	0.09	0.12	0.18	0.17	0.19	0.18	0.19	0.15	0.13	0.09	0.08
206	CA	34.044311	-118.476886	340	Santa Monica	N/A	0.06	0.08	0.11	0.15	0.15	0.17	0.17	0.17	0.13	0.11	0.08	0.07
207	CA	38.526336	-122.829297	85	Windsor	N/A	0.03	0.06	0.10	0.15	0.18	0.22	0.21	0.19	0.15	0.10	0.05	0.03
208	CA	36.997444	-121.996758	300	De Laveaga	N/A	0.04	0.07	0.11	0.16	0.16	0.18	0.16	0.16	0.12	0.10	0.05	0.04
209	CA	36.634028	-120.381811	191	Westlands	N/A	0.03	0.06	0.12	0.21	0.26	0.29	0.28	0.25	0.20	0.14	0.07	0.03
210	CA	38.982581	-123.089275	525	Sanel Valley	N/A	0.03	0.06	0.10	0.15	0.19	0.23	0.26	0.23	0.17	0.11	0.05	0.03
211	CA	34.437353	-119.737419	250	Santa Barbara	N/A	0.05	0.08	0.11	0.16	0.16	0.17	0.17	0.17	0.13	0.11	0.07	0.06
212	CA	38.219503	-122.354964	5	Carneros	N/A	0.03	0.05	0.10	0.15	0.18	0.22	0.22	0.20	0.16	0.11	0.05	0.03
213	CA	36.943964	-121.763942	110	Green Valley Rd	N/A	0.04	0.06	0.10	0.15	0.15	0.18	0.17	0.16	0.12	0.10	0.05	0.04
214	CA	36.121083	-121.084572	540	King City - Oasis Rd	N/A	0.05	0.07	0.12	0.18	0.21	0.24	0.24	0.22	0.17	0.13	0.07	0.05
215	CA	36.347306	-121.291350	235	Arroyo Seco	N/A	0.05	0.07	0.12	0.18	0.20	0.24	0.23	0.22	0.17	0.13	0.07	0.05
216	CA	36.716806	-121.691889	61	Salinas North	N/A	0.04	0.06	0.09	0.14	0.15	0.17	0.14	0.14	0.11	0.09	0.05	0.04
217	CA	34.475914	-117.263514	2890	Victorville	N/A	0.07	0.09	0.15	0.21	0.24	0.30	0.32	0.29	0.22	0.15	0.09	0.07
218	CA	33.841292	-116.478731	392	Cathedral City	N/A	0.05	0.08	0.12	0.17	0.22	0.26	0.28	0.25	0.19	0.13	0.07	0.05
219	CA	38.415564	-121.786911	37	Dixon	N/A	0.02	0.05	0.10	0.17	0.20	0.25	0.27	0.23	0.18	0.14	0.05	0.03
220	CA	38.233972	-122.116994	35	Suisun Valley	N/A	0.02	0.05	0.10	0.16	0.19	0.23	0.25	0.22	0.18	0.12	0.05	0.03
221	CA	36.890056	-120.731408	183	Panoche	N/A	0.04	0.07	0.12	0.20	0.24	0.28	0.27	0.23	0.18	0.13	0.07	0.03
222	CA	35.205583	-118.778414	500	Arvin/Edison	N/A	0.04	0.08	0.12	0.19	0.24	0.27	0.28	0.25	0.19	0.13	0.07	0.04
223	CA	36.854833	-121.362753	340	San Benito	N/A	0.04	0.06	0.10	0.15	0.18	0.21	0.22	0.21	0.16	0.12	0.06	0.04
224	CA	33.327703	-115.944842	-225	Salton Sea West	N/A	0.08	0.11	0.17	0.23	0.28	0.31	0.30	0.28	0.23	0.17	0.10	0.07
225	CA	33.220186	-115.580117	-226	Salton East	N/A	0.08	0.11	0.17	0.23	0.28	0.31	0.30	0.28	0.23	0.17	0.10	0.07
226	CA	36.902778	-121.741931	65	Pajaro	N/A	0.06	0.08	0.12	0.16	0.17	0.19	0.18	0.17	0.14	0.11	0.08	0.06
227	CA	38.649964	-121.218872	265	Fair Oaks	N/A	0.05	0.08	0.12	0.17	0.22	0.26	0.28	0.25	0.19	0.13	0.07	0.05
228	CA	34.196531	-118.230203	1111	Glendale	N/A	0.07	0.09	0.12	0.16	0.17	0.20	0.22	0.21	0.17	0.13	0.09	0.07
229	CA	34.884267	-116.979861	2040	Barstow	N/A	0.07	0.11	0.17	0.22	0.26	0.31	0.30	0.26	0.21	0.15	0.09	0.07
230	CA	33.662869	-114.558108	275	Blythe NE	N/A	0.07	0.11	0.16	0.22	0.28	0.32	0.33	0.29	0.23	0.15	0.10	0.07
231	CA	33.523694	-116.155750	12	Oasis	N/A	0.08	0.12	0.17	0.23	0.28	0.32	0.31	0.28	0.23	0.16	0.10	0.07
232	CA	33.558017	-117.031661	1536	Temecula East II	N/A	0.06	0.08	0.11	0.16	0.18	0.21	0.21	0.20	0.16	0.12	0.08	0.06

ET₀ASCE Standardized Reference Equation

Station Map ID	State	Lat	Long	Elev	Station Name	CIMIS Average Monthly Rates (ET ₀) ($\frac{in}{day}$)												
						Years of Data	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
233	CA	35.603111	-119.212586	415	Famoso	N/A	0.05	0.08	0.12	0.17	0.22	0.26	0.28	0.25	0.19	0.13	0.07	0.05
234	CA	38.501258	-121.978528	136	Winters	N/A	0.03	0.06	0.11	0.17	0.21	0.25	0.26	0.22	0.17	0.11	0.05	0.03
235	CA	38.116125	-121.659214	-1	Twitchell Islan	N/A	0.05	0.08	0.12	0.17	0.22	0.26	0.28	0.25	0.19	0.13	0.07	0.05
236	CA	33.536894	-115.992803	-180	Mecca	N/A	0.05	0.09	0.13	0.19	0.25	0.29	0.30	0.27	0.21	0.14	0.08	0.05
237	CA	36.721083	-119.389028	450	Orange Cove	N/A	0.03	0.06	0.11	0.16	0.22	0.26	0.28	0.25	0.19	0.11	0.06	0.02
238	CA	36.822861	-121.467869	245	San Juan Valley	N/A	0.06	0.08	0.12	0.16	0.17	0.19	0.18	0.17	0.14	0.11	0.08	0.06
239	CA	38.266428	-122.616464	97	Petaluma	N/A	0.03	0.06	0.09	0.14	0.18	0.21	0.21	0.19	0.15	0.10	0.05	0.03
240	CA	37.016528	-120.186394	230	Madera	N/A	0.05	0.09	0.13	0.19	0.25	0.29	0.31	0.28	0.21	0.13	0.07	0.04
241	CA	35.505833	-119.691144	410	Belridge	N/A	0.05	0.08	0.12	0.17	0.22	0.26	0.28	0.25	0.19	0.13	0.07	0.05
242	CA	32.628208	-116.939281	580	Otay Lake	N/A	0.04	0.07	0.11	0.16	0.19	0.23	0.25	0.22	0.17	0.11	0.07	0.04
243	CA	37.314139	-120.386700	200	Merced	N/A	0.04	0.07	0.11	0.17	0.22	0.26	0.26	0.23	0.18	0.12	0.06	0.03
244	CA	37.780653	-122.180150	145	Oakland Foothil	N/A	0.04	0.06	0.10	0.15	0.18	0.21	0.22	0.20	0.15	0.11	0.05	0.04
245	CA	32.885847	-117.143142	445	Miramar	N/A	0.06	0.08	0.11	0.15	0.17	0.19	0.19	0.18	0.15	0.11	0.08	0.06
246	CA	33.532222	-114.633889	251	Ripley	N/A	0.08	0.12	0.17	0.23	0.28	0.32	0.31	0.28	0.23	0.16	0.10	0.07
247	CA	34.219386	-118.992439	130	Camarillo	N/A	0.06	0.08	0.11	0.15	0.17	0.19	0.19	0.18	0.15	0.11	0.08	0.06
248	CA	33.081050	-116.975697	390	Escondido SPV	N/A	0.09	0.10	0.12	0.18	0.20	0.23	0.23	0.22	0.19	0.13	0.11	0.08
249	CA	38.599158	-121.540406	40	Bryte	N/A	0.03	0.06	0.11	0.17	0.21	0.25	0.26	0.22	0.17	0.11	0.05	0.03
250	CA	34.233639	-119.196922	48	Oxnard	N/A	0.06	0.08	0.11	0.15	0.17	0.19	0.19	0.18	0.15	0.11	0.08	0.06
251	CA	37.995947	-122.466308	5	Point San Pedro	N/A	0.04	0.06	0.10	0.14	0.17	0.21	0.21	0.19	0.14	0.09	0.04	0.03
252	CA	38.419439	-122.658719	270	Bennett Valley	N/A	0.03	0.05	0.09	0.14	0.17	0.20	0.20	0.19	0.14	0.10	0.05	0.03
253	CA	34.146372	-117.985797	595	Monrovia	N/A	0.05	0.08	0.12	0.17	0.22	0.26	0.28	0.25	0.19	0.13	0.07	0.05
254	CA	35.335261	-120.735881	285	San Luis Obispo West	N/A	0.07	0.09	0.12	0.17	0.18	0.21	0.21	0.20	0.16	0.13	0.10	0.07
255	CA	37.438944	-121.138511	183	Patterson	N/A	0.05	0.08	0.12	0.17	0.22	0.26	0.28	0.25	0.19	0.13	0.07	0.05
256	CA	35.472556	-120.648142	885	Atascadero	N/A	0.07	0.09	0.12	0.17	0.18	0.21	0.21	0.20	0.16	0.13	0.10	0.07
257	CA	34.841878	-120.212736	536	Sisquoc	N/A	0.06	0.09	0.12	0.17	0.19	0.20	0.19	0.18	0.15	0.11	0.08	0.06
258	CA	38.129933	-121.386594	25	Lodi West	N/A	0.03	0.06	0.11	0.17	0.21	0.25	0.25	0.22	0.17	0.11	0.05	0.02
259	CA	37.725881	-121.475517	82	Tracy	N/A	0.03	0.06	0.11	0.18	0.22	0.26	0.27	0.23	0.18	0.12	0.06	0.03
260	CA	36.082056	-119.093422	400	Porterville	N/A	0.03	0.07	0.12	0.18	0.23	0.27	0.27	0.24	0.19	0.13	0.06	0.03
261	CA	38.015372	-122.020278	35	Concord	N/A	0.03	0.06	0.11	0.18	0.22	0.26	0.27	0.23	0.18	0.12	0.06	0.03
262	CA	37.598758	-122.053233	16	Union City	N/A	0.05	0.07	0.11	0.16	0.17	0.21	0.22	0.19	0.15	0.11	0.06	0.05
263	CA	32.901867	-117.250458	335	Torrey Pines	N/A	0.06	0.08	0.11	0.15	0.17	0.19	0.19	0.18	0.15	0.11	0.08	0.06
264	CA	33.798697	-118.094792	17	Long Beach	N/A	0.05	0.08	0.12	0.16	0.17	0.19	0.19	0.19	0.15	0.10	0.07	0.05
265	CA	33.383697	-114.719211	230	Palo Verde II	N/A	0.08	0.12	0.18	0.24	0.28	0.31	0.31	0.28	0.22	0.15	0.10	0.07
266	CA	37.837614	-122.140739	510	Moraga	N/A	0.03	0.05	0.09	0.15	0.18	0.22	0.24	0.20	0.16	0.11	0.05	0.03
267	CA	33.663325	-117.093383	1626	Winchester	N/A	0.09	0.10	0.12	0.18	0.20	0.23	0.23	0.22	0.19	0.13	0.11	0.08

ET₀ASCE Standardized Reference Equation

Station Map ID	State	Lat	Long	Elev	Station Name	CIMIS Average Monthly Rates (ET ₀) ($\frac{in}{day}$)												
						Years of Data	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
268	CA	33.078611	-115.660556	-200	Westmorland North	N/A	0.08	0.12	0.17	0.23	0.28	0.32	0.31	0.28	0.23	0.16	0.10	0.07
269	CA	35.833000	-119.255956	300	Delano	N/A	0.05	0.08	0.12	0.17	0.22	0.26	0.28	0.25	0.19	0.13	0.07	0.05
270	CA	32.729481	-117.139481	3684	Owens Lake North	N/A	0.07	0.09	0.15	0.21	0.24	0.30	0.32	0.29	0.22	0.15	0.09	0.07
271	CA	32.729578	-117.139342	377	San Diego II	N/A	0.07	0.09	0.11	0.15	0.16	0.18	0.18	0.18	0.14	0.11	0.08	0.07
272	CA	32.492658	-114.826164	48	UC-San Luis	N/A	0.08	0.12	0.18	0.25	0.29	0.31	0.29	0.27	0.23	0.17	0.10	0.07
273	CA	38.090933	-122.526703	1	Black Point	N/A	0.04	0.06	0.10	0.14	0.17	0.21	0.21	0.19	0.14	0.09	0.04	0.03
274	CA	36.358628	-117.943869	3682	Owens Lake South	N/A	0.07	0.09	0.15	0.21	0.24	0.30	0.32	0.29	0.22	0.15	0.09	0.07
275	CA	36.382028	-120.229850	270	Five Points South We	N/A	0.04	0.07	0.13	0.20	0.25	0.28	0.28	0.26	0.21	0.15	0.08	0.04
276	CA	37.663969	-121.885033	335	Pleasanton	N/A	0.03	0.05	0.09	0.15	0.18	0.22	0.24	0.20	0.16	0.11	0.05	0.03
277	CA	34.255142	-117.218139	5148	Lake Arrowhead	N/A	0.06	0.09	0.15	0.20	0.23	0.25	0.26	0.24	0.18	0.13	0.08	0.06
278	CA	37.727194	-120.850861	165	Oakdale	N/A	0.03	0.06	0.11	0.17	0.22	0.25	0.25	0.22	0.16	0.11	0.06	0.03
279	CA	38.887603	-121.102908	935	Auburn	N/A	0.05	0.07	0.10	0.15	0.19	0.25	0.29	0.26	0.21	0.14	0.06	0.04
280	CA	38.691786	-122.013808	174	Esparto	N/A	0.03	0.06	0.11	0.18	0.22	0.27	0.27	0.24	0.19	0.14	0.07	0.04
281	CA	34.614981	-118.032492	2550	Palmdale	N/A	0.07	0.09	0.15	0.21	0.24	0.30	0.32	0.29	0.22	0.15	0.09	0.07
282	CA	34.324639	-119.104875	218	Santa Paula	N/A	0.06	0.08	0.11	0.15	0.17	0.19	0.19	0.18	0.15	0.11	0.08	0.06
283	CA	34.237419	-116.865706	6910	Big Bear Lake	N/A	0.06	0.09	0.15	0.20	0.23	0.25	0.26	0.24	0.18	0.13	0.08	0.06
284	CA	33.748586	-116.252903	40	Indio II	N/A	0.08	0.12	0.17	0.23	0.28	0.32	0.31	0.28	0.23	0.16	0.10	0.07
285	CA	32.674353	-115.044381	120	UC-Andrade	N/A	0.08	0.12	0.18	0.25	0.29	0.31	0.29	0.27	0.23	0.17	0.10	0.07
286	CA	35.028281	-120.560033	255	Nipomo	N/A	0.07	0.09	0.12	0.17	0.18	0.21	0.21	0.20	0.16	0.13	0.10	0.07
287	CA	35.862583	-119.503569	210	Alpaugh	N/A	0.05	0.08	0.12	0.17	0.22	0.26	0.28	0.25	0.19	0.13	0.07	0.05
288	CA	34.426361	-118.517583	1410	Santa Clarita	N/A	0.09	0.10	0.13	0.19	0.19	0.23	0.25	0.25	0.19	0.17	0.12	0.10
289	CA	33.268447	-116.365050	578	Borrego Springs	N/A	0.09	0.13	0.19	0.26	0.31	0.34	0.30	0.27	0.23	0.18	0.11	0.07
290	CA	37.545869	-120.754531	150	Denair II	N/A	0.03	0.06	0.11	0.17	0.22	0.25	0.25	0.22	0.16	0.11	0.06	0.03
291	CA	33.678186	-116.272989	36	La Quinta II	N/A	0.08	0.12	0.17	0.23	0.28	0.32	0.31	0.28	0.23	0.16	0.10	0.07
292	CA	36.913083	-121.823653	240	Watsonville West II	N/A	0.06	0.08	0.12	0.16	0.17	0.19	0.18	0.17	0.14	0.11	0.08	0.06
293	CA	36.540889	-121.881958	75	Carmel	N/A	0.04	0.06	0.09	0.14	0.15	0.17	0.14	0.14	0.11	0.09	0.05	0.04
294	CA	37.138889	-121.575000	185	Gilroy	N/A	0.04	0.06	0.11	0.16	0.20	0.23	0.24	0.21	0.17	0.11	0.06	0.03
295	CA	38.278056	-121.741111	7	Hastings Tract East	N/A	0.05	0.08	0.12	0.17	0.22	0.26	0.28	0.25	0.19	0.13	0.07	0.05
296	CA	33.608611	-116.171667	-32	Thermal South	N/A	0.08	0.12	0.17	0.23	0.28	0.32	0.31	0.28	0.23	0.16	0.10	0.07
297	CA	38.636111	-120.793056	2050	Diamond Springs	N/A	0.05	0.07	0.10	0.15	0.19	0.25	0.29	0.26	0.21	0.14	0.06	0.04
298	CA	34.405556	-119.715000	440	Santa Barbara II	N/A	0.05	0.08	0.11	0.16	0.16	0.17	0.17	0.17	0.13	0.11	0.07	0.06

ET₀ ASCE Standardized Reference Equation

299	CA	34.672222	-120.513056	55	Lompoc	N/A	0.06	0.09	0.12	0.17	0.19	0.20	0.19	0.18	0.15	0.11	0.08	0.06
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Station Map ID	State	Lat	Long	Elev	Station Name	CIMIS Average Monthly Rates (ET ₀) ($\frac{in}{day}$)													
						Years of Data	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
300	CA	34.913472	-120.464778	215	Santa Maria II	N/A	0.06	0.09	0.12	0.17	0.19	0.20	0.19	0.18	0.15	0.11	0.08	0.06	