The data are available in the txt spreadsheet called SWdata.txt

The dataset is composed of data on 124 counties of the South-West United-States (Colorado, New Mexico, Arizona, Utah). The variables’ name and their definition are as follows:

County State F-heat F-cold XCTRD YCTRD Fvalue Profit Irrig Subsid Ferti Flood Salinity Clay Sand HIGH LOW T\_av\_Winter T\_av\_Spring T\_av\_Summer T\_av\_Fall P\_av\_Winter P\_av\_Spring P\_av\_Summer P\_av\_Fall

Cache Utah 4.0775 3.28181 -111.73505 41.72454 3140.461141 117.9010137 74.84635261 28.39101691 10.8765653 0 0.8305 22.5807 28.9582 1 0 -1.414733333 12.62506667 20.77406667 2.955666667 1.6386 1.4654 0.828633333 1.802733333

Box Elder Utah 4.18051 3.28302 -113.08019 41.5222 917.0073407 21.79177489 66.20271373 6.840426072 6.180231893 0 4.4976 21.9121 23.6214 0 1 0.032533333 15.46846667 23.8826 4.8538 0.8802 1.0306 0.609633333 0.964066667

Rich Utah 4.42011 3.20273 -111.23998 41.63281 808.8935464 9.970651902 92.60438929 3.048671365 1.064453044 0.0862 0.9142 16.5349 31.5922 1 0 -2.6764 10.96906667 18.88806667 1.594333333 1.4133 1.306933333 0.845066667 1.527566667

Weber Utah 3.95173 3.35262 -111.90268 41.26958 4950.182123 37.31870076 59.44920798 2.177476222 11.57679746 0.07 2.4346 19.6912 31.9856 0 1 -0.624266667 13.49886667 21.67833333 3.814466667 1.6174 1.475666667 0.815333333 1.782833333

Morgan Utah 4.02745 3.55551 -111.56715 41.09343 1370.265199 0.541357379 75.72693004 0.723668199 0.787126986 0.0417 0.9124 25.2115 33.3299 1 0 -1.4982 11.7556 19.7394 2.712533333 1.746266667 1.550166667 0.900166667 1.952666667

Summit Utah 3.99876 3.4322 -110.95447 40.86756 1438.507404 15.29421972 49.41724829 0.40296789 0.87967069 0.0284 0.1408 18.8018 48.8809 1 0 -3.841266667 8.626133333 16.4092 0.230133333 1.5372 1.381766667 1.001033333 1.756133333

Tooele Utah 4.13091 3.48885 -113.12508 40.45023 1639.225938 32.88536987 71.53942289 0.400619796 2.408561666 0 7.2389 28.1852 28.4195 0 1 0.983066667 16.54073333 24.9006 5.752666667 0.7942 0.867866667 0.4709 0.7253

Moffat Colorado 4.52051 2.11601 -108.20375 40.61339 721.8072975 1.99506553 67.00742561 4.246226348 0.762643384 0 0.9747 15.7667 53.2766 1 0 -2.1368 12.5532 19.93006667 1.906333333 0.986 1.047433333 1.0444 1.117166667

Weld Colorado 6.48762 2.60023 -104.38608 40.54914 1549.888081 77.21657784 43.49358706 13.49119349 10.79580609 0.0306 0.1691 16.1425 59.4579 0 1 3.0678 16.25173333 22.98093333 6.549333333 0.5653 1.657833333 1.452833333 0.603933333

Jackson Colorado 4.45973 2.21743 -106.34324 40.65986 975.8881774 19.10553249 77.5117343 0.683933426 1.557684707 0.1444 0 16.2615 61.6249 1 0 -5.076066667 7.5572 14.2406 -1.2386 1.891166667 1.876433333 1.6732 1.977133333

Logan Colorado 7.58583 2.55121 -103.10824 40.72027 869.5026667 31.80873603 35.25959133 16.80248297 8.533964969 0.0439 0.2183 16.1236 52.8635 0 1 3.275733333 17.20953333 23.9332 7.047733333 0.5112 1.9978 1.5569 0.549966667

Sedgwick Colorado 7.74628 2.44144 -102.35068 40.87034 959.7364297 80.49680648 66.31523956 21.60865076 17.18936955 0.0716 0.0204 17.8321 51.8887 0 1 3.013133333 17.47533333 24.2408 7.1272 0.5337 2.230033333 1.605633333 0.561133333

Routt Colorado 3.89913 2.01867 -106.99061 40.47927 1364.639578 -2.675351867 60.04513953 3.275791114 1.161320341 0 0.0362 18.5233 52.0144 1 0 -4.858133333 8.026333333 14.90733333 -0.944266667 2.020533333 1.7844 1.620533333 2.067566667

Larimer Colorado 5.01971 2.42003 -105.46198 40.66514 2493.510868 29.65789404 52.22868039 12.13278895 5.879722918 0.0295 0.0203 15.9032 60.6872 1 0 -1.683466667 10.55726667 17.2046 1.888 1.1244 1.7076 1.5748 1.1224

Daggett Utah 4.30805 2.8237 -109.51065 40.8889 2427.775742 33.05240015 35.54498923 25.58686532 4.543788934 0.0023 0.605 15.3618 56.958 1 0 -2.998866667 11.25406667 18.80333333 1.0672 0.7769 0.923866667 0.864966667 0.904266667

Uintah Utah 4.23083 3.06285 -109.5158 40.12272 533.0575597 1.129579366 13.86421156 1.201259866 0.942890401 0 0.7981 14.3672 44.2855 1 0 -0.841866667 14.10946667 21.40593333 3.071 0.7311 0.736066667 0.9121 0.906233333

Duchesne Utah 3.78278 3.5204 -110.42119 40.298 661.383968 2.521203563 27.26151216 3.455610318 1.700000929 0 0.8881 17.5158 52.7628 1 0 -2.833066667 10.56886667 18.0072 1.076333333 1.0839 0.943466667 0.927533333 1.338166667

Phillips Colorado 7.86781 2.42346 -102.35309 40.58656 1116.851519 74.72504024 53.05923174 32.01481829 21.86457739 0 0 17.1147 53.6477 0 1 3.300266667 17.64126667 24.322 7.338666667 0.517166667 2.124133333 1.663 0.584133333

Wasatch Utah 3.50147 3.97822 -111.16293 40.32918 4795.116403 -22.82550997 75.85349208 0.482925402 2.836126488 0 0.5583 21.8475 41.488 1 0 -2.4608 10.284 18.01913333 1.646133333 1.582666667 1.315866667 0.929766667 1.8235

Utah Utah 3.58259 4.219 -111.66837 40.11766 4275.247805 68.73166413 72.52237916 12.59780914 9.865927542 0 0.8859 20 35.0022 1 0 -0.655066667 12.94286667 20.9208 3.686 1.4692 1.2939 0.783266667 1.5542

Morgan Colorado 7.67754 2.68303 -103.79686 40.25379 1093.094005 18.48392786 40.30328585 19.87908111 10.77199035 0.026 1.0989 15.291 66.6247 0 1 3.743466667 17.46946667 24.12546667 7.241066667 0.4796 1.6867 1.4895 0.5484

Grand Colorado 3.81386 2.13846 -106.11825 40.09573 1512.626529 -7.574958024 84.86399616 0.421767125 0.652434637 0.0277 0.1184 15.7588 57.582 1 0 -5.4158 6.844666667 13.47006667 -1.481933333 1.6222 1.693533333 1.720333333 1.595933333

Yuma Colorado 7.32033 2.71175 -102.42321 39.99751 1045.318194 58.6517472 65.01615269 0 24.25713008 0.0252 0.0375 12.406 61.7951 0 1 3.902066667 17.94706667 24.45953333 7.7804 0.479233333 2.148966667 1.771333333 0.6667

Washington Colorado 7.1539 2.8183 -103.1982 39.96473 728.0071409 18.07460992 21.88077416 19.20379007 5.863744801 0.0012 0.229 17.8782 46.7699 0 1 3.880866667 17.51493333 24.07473333 7.5206 0.465833333 1.8759 1.631033333 0.592433333

Rio Blanco Colorado 4.10637 2.81866 -108.21752 39.97101 960.0493563 0.682916987 77.58997561 2.453033548 1.365833974 0 0.0621 17.3794 45.9671 1 0 -1.9312 11.7596 18.79493333 1.844333333 1.234033333 1.1667 1.351733333 1.3456

Garfield Colorado 3.49025 3.2136 -107.89894 39.59214 1810.658722 -20.29934602 70.51897975 6.178312567 2.173971389 0 0.2647 18.6502 43.1103 1 0 -2.465266667 10.83066667 17.60226667 1.384733333 1.463533333 1.308766667 1.578966667 1.5849

Juab Utah 3.93291 3.76723 -112.78134 39.69834 1175.419668 16.97485832 63.09571347 7.137445826 3.440278908 0 4.5086 21.8047 39.2665 0 1 0.713733333 15.1952 23.28513333 5.079666667 0.919 0.8868 0.535666667 0.9038

Adams Colorado 6.57429 2.63233 -104.35544 39.86738 1188.977364 33.43973054 19.17269063 17.36562732 8.887295776 0.0346 0.699 21.2985 47.7897 0 1 3.267933333 16.11706667 22.7328 6.7626 0.600866667 1.6393 1.459866667 0.640566667

Summit Colorado 3.51713 2.08642 -106.11087 39.62887 1544.920323 -14.26241164 86.49044293 0.156716822 0.961980844 0 0.0489 17.4322 56.216 1 0 -6.282666667 5.606666667 12.27553333 -2.330266667 1.5021 1.5248 1.748433333 1.4504

Eagle Colorado 3.24444 2.53526 -106.68927 39.62084 1142.884783 -17.71951888 71.22069588 3.227895689 0.88678211 0.0016 0 17.7566 55.358 1 0 -5.803733333 6.609666667 13.17993333 -1.813333333 1.6688 1.506533333 1.718933333 1.675866667

Carbon Utah 3.40572 4.08442 -110.58061 39.64106 1069.684585 -4.444300116 68.64216889 3.001084786 1.215455773 0 0.776 18.0741 42.5932 1 0 -1.348133333 12.27193333 19.57113333 2.579733333 0.899566667 0.767866667 0.907566667 1.0629

Sanpete Utah 3.5975 4.06247 -111.56975 39.36963 2196.202227 76.69691319 89.06952634 7.575167126 3.379863971 0.0385 1.4786 18.5861 41.5295 1 0 -1.492133333 11.908 19.59593333 3.021533333 1.196866667 0.984333333 0.8201 1.3007

Emery Utah 4.06369 3.48564 -110.69911 38.9903 1288.663167 -3.491637163 94.9661824 9.011892629 3.408619216 0.0009 1.7898 12.4243 50.9635 0 1 1.183066667 15.56733333 22.80006667 4.954466667 0.744133333 0.6143 0.8337 0.913933333

Kit Carson Colorado 6.63102 2.94771 -102.59905 39.29873 777.9273973 34.91779676 58.44227582 45.61625275 11.3205538 0.0046 0.0473 19.4009 33.9115 0 1 4.2588 17.82693333 24.09266667 7.9438 0.4105 2.079666667 1.782266667 0.685133333

Lincoln Colorado 6.73978 2.70874 -103.51051 38.98435 576.3420554 9.586058823 11.53369799 13.10636373 2.897745373 0 0.8871 20.4405 46.4409 0 1 4.3764 17.51166667 23.62573333 7.8926 0.387366667 1.707133333 1.6851 0.526166667

Elbert Colorado 6.41211 2.85081 -104.13067 39.2803 1014.754906 -7.699707018 20.77122269 4.120626451 1.298713894 0 0.6293 22.3682 43.6467 0 1 3.273266667 15.71906667 21.99833333 6.777 0.525266667 1.724966667 1.705633333 0.566766667

Park Colorado 3.84575 2.17595 -105.7087 39.11562 853.2913133 -14.55871221 28.70989171 0.345568043 0.185382583 0 0.2163 16.7725 54.4635 1 0 -4.527466667 7.347933333 13.81506667 -0.511466667 0.8703 1.322366667 1.806033333 0.8104

Douglas Colorado 5.78099 2.2134 -104.9192 39.32412 3216.922996 -53.95592199 15.0615718 0.6766522 1.839226257 0.0002 0.0151 18.4155 54.38 1 0 0.628866667 12.41006667 18.7292 4.191 0.690133333 1.669933333 1.763933333 0.659566667

Millard Utah 4.36237 3.5108 -113.09469 39.07058 1181.218369 58.33327451 82.92811615 4.928341124 6.873222138 0 4.4735 21.4774 45.6866 0 1 1.3632 15.6016 23.4196 5.431933333 0.886433333 0.765466667 0.571233333 0.847066667

Grand Utah 4.4374 3.49779 -109.56724 38.97401 1182.936223 -11.70243581 34.4321669 1.85170987 2.67484247 0.0393 2.5916 14.856 51.36 0 1 1.250266667 15.727 22.79673333 4.900733333 0.892733333 0.6428 1.065533333 0.950233333

Mesa Colorado 3.91951 3.70248 -108.46702 39.01281 3335.182048 -10.77820521 80.7337233 5.060203341 6.858857859 0.0004 1.3677 22.2919 43.7611 1 0 -0.4312 13.25993333 20.11513333 3.299333333 1.138733333 0.9593 1.426666667 1.330333333

Pitkin Colorado 3.28412 2.65221 -106.91207 39.21116 2539.822699 -32.44682715 97.55072007 1.55670856 1.226391955 0 0 20.1028 59.3647 1 0 -6.0774 5.966466667 12.58373333 -2.074333333 1.723966667 1.454666667 1.761466667 1.8183

Gunnison Colorado 3.24238 2.70492 -107.02785 38.66343 1790.406439 -4.42195084 85.46744281 1.069269971 0.938513004 0 0 16.6236 39.1806 1 0 -5.007 7.396866667 13.93286667 -0.898266667 1.354866667 1.1269 1.679766667 1.4459

Delta Colorado 3.37152 3.5712 -107.8565 38.85891 2895.22037 14.31513088 90.42727597 5.443989507 8.165366491 0 0.5964 22.656 36.2451 1 0 -1.259333333 12.15993333 18.91013333 2.607733333 1.285 1.0946 1.588366667 1.491833333

El Paso Colorado 5.8326 2.3323 -104.51765 38.82774 1336.276682 -12.02755273 15.61586456 1.729764754 1.422735871 0 0.1405 16.1789 59.8083 1 0 2.547533333 14.86366667 20.9078 6.0512 0.492333333 1.6511 1.8281 0.5066

Teller Colorado 4.6715 2.12357 -105.15256 38.87881 1273.535558 -24.93888198 34.24384381 0.094868977 0.068288286 0 0 12.9751 65.4728 1 0 -1.151866667 10.77506667 16.9356 2.607133333 0.579366667 1.471833333 1.9293 0.548266667

Chaffee Colorado 3.27321 2.41294 -106.19143 38.75068 2113.859329 11.27133052 75.48139286 3.822703658 2.417983754 0.015 0.0019 13.7262 65.4253 1 0 -5.781466667 6.333933333 12.69913333 -1.658 1.022433333 1.144933333 1.707466667 0.9882

Sevier Utah 4.23218 3.54374 -111.80311 38.74485 1982.504792 41.7321817 96.08525212 2.043788142 5.056324983 0.0097 1.2015 19.7618 42.9269 1 0 -1.1048 12.30986667 19.72933333 3.381866667 1.0876 0.888766667 0.887333333 1.183733333

Cheyenne Colorado 6.50971 2.81956 -102.60559 38.82193 645.7139935 26.20816459 29.08454845 30.31973164 7.148995016 0 0.3341 17.9355 43.1101 0 1 4.549733333 18.28913333 24.32506667 8.1908 0.398 1.9791 1.822933333 0.671833333

Fremont Colorado 4.48828 2.51621 -105.43445 38.46867 1556.02532 -11.8319798 50.99275752 1.353523085 0.905732816 0 0.0522 15.4695 55.4092 1 0 -1.410133333 10.9202 17.0066 2.467933333 0.668566667 1.2768 1.8586 0.6025

Montrose Colorado 3.94757 3.24139 -108.26753 38.4014 2384.951535 18.8752118 90.93086564 4.65019643 10.38136649 0 0.3808 21.1248 43.2727 1 0 -0.7974 12.3794 19.15646667 2.966866667 1.17 0.880833333 1.587133333 1.274866667

Kiowa Colorado 6.54206 2.72882 -102.73409 38.42788 542.8780807 22.09122312 6.06543019 31.07090802 4.731000055 0 0.1862 18.6778 40.7218 0 1 5.0748 19.0002 24.88193333 8.702866667 0.3864 1.8575 1.7392 0.6417

Beaver Utah 4.76107 3.33569 -113.23551 38.35314 2325.903375 59.90917302 79.20137946 8.018867597 4.705570258 0 0.8857 17.8511 51.183 1 0 0.979066667 14.47193333 21.8942 4.988266667 0.973366667 0.7316 0.777366667 0.965033333

Pueblo Colorado 6.04934 2.44954 -104.50826 38.16544 669.7625433 5.317571708 38.58292535 5.939653044 1.216825579 0 0.583 20.6208 34.5165 0 1 4.3952 17.39173333 23.35306667 7.8962 0.528766667 1.578366667 1.667533333 0.508766667

Crowley Colorado 7.00983 2.38431 -103.77526 38.31613 504.9210483 11.92753061 29.46756053 7.574034194 0.354590282 0 1.5311 26.9737 45.5748 0 1 5.410666667 19.11146667 25.00446667 8.878866667 0.373733333 1.538733333 1.5085 0.4859

Wayne Utah 4.55917 2.67633 -110.90647 38.32124 2730.905312 120.7155809 92.38202645 10.66453285 4.312060502 0 1.3333 11.9845 44.75 0 1 1.539533333 16.0002 23.08066667 5.446466667 0.7098 0.556133333 0.8933 0.9888

Piute Utah 4.69007 3.11837 -112.12889 38.33052 2814.440774 36.14912695 98.20670127 14.16820153 2.713544125 0 0.4326 16.5922 45.2914 1 0 -1.7274 11.23993333 18.40233333 2.778333333 1.037966667 0.818633333 1.017566667 1.1618

San Juan Utah 5.3683 2.29823 -109.80298 37.6236 360.7420968 -2.452625033 7.799076096 0 0.117007151 0.0071 0.7023 11.0223 50.7369 0 1 3.455 17.84906667 24.6816 7.0448 0.854866667 0.451833333 1.07 0.894766667

Saguache Colorado 3.63383 3.04731 -106.27729 38.07658 1306.117547 76.41190231 88.94810493 12.46340291 28.33551477 0.0306 0.6023 15.9878 53.9389 1 0 -3.939333333 8.931933333 15.1974 0.305133333 0.8869 0.9681 1.604266667 0.904566667

Ouray Colorado 3.60515 2.99898 -107.76826 38.15558 1442.88622 -17.86037788 89.91890365 0 2.355097561 0 0.0436 15.3563 27.0367 1 0 -3.9118 8.204 14.84066667 0.088666667 1.397333333 1.0229 1.832133333 1.471933333

Prowers Colorado 6.3081 3.01203 -102.38441 37.95147 689.848805 43.27527436 42.95001812 19.0315007 4.125953404 0.0759 0.2383 20.6376 30.2766 0 1 5.699733333 19.65566667 25.35473333 9.380666667 0.414133333 2.016066667 1.7333 0.6844

Bent Colorado 6.74543 2.75076 -103.05665 37.95064 518.3208648 20.19855394 36.65370031 8.057297357 1.289414941 0.0441 0.3329 18.9957 33.6362 0 1 5.6124 19.38686667 25.15486667 9.163866667 0.383333333 1.699633333 1.5784 0.587133333

Otero Colorado 6.62378 2.69493 -103.70922 37.89501 599.4924077 19.19012759 45.3011666 13.20385445 3.074714439 0.0023 0.7392 21.6545 25.4467 0 1 5.744533333 19.36666667 25.2416 9.237266667 0.427966667 1.6124 1.4151 0.5362

Custer Colorado 4.739 2.6976 -105.36012 38.09876 1641.114957 1.436875449 53.90532587 9.414352839 2.264167374 0 0.003 13.3624 64.258 1 0 -0.258266667 12.31926667 18.315 3.6042 0.760533333 1.2998 1.8359 0.6415

San Miguel Colorado 3.98239 2.76964 -108.39922 38.00388 1437.92192 -13.48817797 56.92527841 3.342110653 1.305093841 0 0.4257 21.2884 38.5405 1 0 -1.507 11.1438 17.88933333 2.340933333 1.415233333 0.914266667 1.805633333 1.394066667

Garfield Utah 4.89754 2.67781 -111.44144 37.84864 2629.748614 -33.28610168 97.22106858 8.869027583 3.151491462 0 0.4701 11.6013 34.2099 1 0 1.3502 14.97 21.89693333 5.2866 0.855766667 0.530066667 0.996066667 1.065333333

Hinsdale Colorado 3.34541 2.36511 -107.30186 37.83084 2751.568594 51.38205867 90.82584365 6.138232135 1.356622011 0.0065 0 10.5949 33.4202 1 0 -5.553066667 6.169866667 12.7442 -1.3208 1.623733333 1.1213 2.032533333 1.7181

Iron Utah 4.97485 2.8714 -113.28688 37.85077 1605.716782 28.59812894 72.33821244 2.392944626 4.148425041 0 0.5349 20.2004 46.8859 1 0 1.4072 14.1552 21.34113333 5.193133333 1.215733333 0.712566667 0.9167 1.168833333

Huerfano Colorado 4.44801 2.74855 -104.96619 37.67396 668.1185996 0.188963382 36.8935577 0.404339331 0.150399426 0 0.1683 19.0569 44.8876 1 0 1.648133333 14.04573333 19.94346667 5.412066667 0.787533333 1.4841 1.878266667 0.648333333

Mineral Colorado 3.113 2.11591 -106.92978 37.6676 1762.914505 -81.20911347 82.44980826 1.229091247 11.3117672 0 0 17.7093 44.388 1 0 -5.525733333 6.343266667 12.78173333 -1.237666667 1.5848 1.116766667 1.9303 1.651033333

Dolores Colorado 4.01635 2.56452 -108.50485 37.75567 1055.80542 7.229456152 50.15011043 19.00401303 3.956933836 0 0.219 15.4553 29.4444 1 0 -0.964466667 11.72333333 18.45533333 2.8766 1.476133333 0.8881 1.828633333 1.385

Rio Grande Colorado 3.7665 2.90653 -106.37901 37.57449 2217.670535 154.1462651 91.51854584 14.37141413 44.04498401 0.0857 1.173 18.1157 48.8523 1 0 -3.7572 8.950266667 15.16886667 0.451066667 1.237566667 0.982733333 1.572666667 1.196733333

Las Animas Colorado 5.91344 2.79235 -104.02601 37.31346 458.6617732 -1.248599284 31.06034116 1.079590452 0.144086797 0 0.2268 17.0295 43.2712 0 1 4.177 16.5034 22.116 7.705466667 0.550133333 1.634333333 1.706166667 0.555266667

Alamosa Colorado 4.00174 3.25904 -105.78769 37.56293 1583.528186 138.6918343 88.04160132 19.54732458 35.6453357 0.1195 2.6599 7.4848 72.5109 1 0 -1.2678 12.27286667 18.33933333 2.767666667 0.760766667 0.890066667 1.481566667 0.685333333

Baca Colorado 6.00435 3.00244 -102.55539 37.3167 651.4564032 10.05783795 27.08413408 21.44866027 7.471119461 0 0.3796 14.3074 48.7082 0 1 6.390133333 19.61 25.07693333 9.9346 0.4754 1.8579 1.679566667 0.6144

Costilla Colorado 4.69425 2.68712 -105.42265 37.27008 814.7013439 7.411248246 77.40803247 2.984457478 5.227510115 0.0474 0.6926 15.6876 58.2959 1 0 -1.002533333 11.90946667 17.7766 2.99 0.882433333 1.111633333 1.761933333 0.716633333

Montezuma Colorado 4.727 2.13048 -108.60275 37.33884 921.1556511 -0.82497824 90.93361694 11.46952666 2.20940816 0 1.5999 19.2203 39.4345 1 0 1.843133333 15.42566667 22.0988 5.5156 1.260733333 0.724566667 1.5213 1.1225

La Plata Colorado 4.16299 2.12967 -107.83794 37.28188 1385.258221 -12.93781536 88.4974982 3.369660041 2.343082732 0.0441 0.0773 17.8978 27.7825 1 0 -0.881933333 11.89893333 18.4254 3.024333333 1.558766667 0.953333333 1.9423 1.492333333

Washington Utah 5.44811 2.47863 -113.50146 37.27514 3116.205107 -28.48006797 78.77227427 4.534259978 3.209102599 0 0.4266 12.7066 44.4573 0 1 5.031866667 17.5254 24.6814 8.3618 1.4512 0.612566667 0.8593 1.205733333

Kane Utah 5.43778 2.51027 -111.88829 37.27956 1492.977243 -4.576033575 74.40771666 3.762894339 0.590740365 0 0.8243 12.01 46.0606 0 1 3.393 16.73126667 23.57466667 7.015933333 0.9612 0.466733333 1.030366667 1.021366667

Archuleta Colorado 4.2085 2.10487 -107.04084 37.19381 1660.973099 -12.58824473 66.89084394 0.64452617 0.822280458 0.0186 0 22.0899 28.2136 1 0 -2.671533333 9.867 16.201 1.4426 1.654333333 1.005066667 1.940766667 1.5516

Conejos Colorado 4.58149 2.51266 -106.1837 37.19581 1250.118059 20.74333188 90.83515523 18.18218904 7.74814167 0.0907 1.1342 18.4464 48.1579 1 0 -2.508466667 10.3372 16.38486667 1.5264 1.2552 0.9088 1.5362 1.065933333

Navajo Arizona 5.58773 2.3774 -110.31414 35.40164 276.1895392 -2.950639964 1.460640071 0.079403149 0.136138966 0.0293 1.7373 14.6613 53.4786 0 1 5.221133333 17.60906667 23.8452 8.493 0.735033333 0.293566667 1.418866667 0.703066667

Coconino Arizona 5.57691 2.3544 -111.75993 35.84145 196.8436939 -1.34076071 8.796269565 0.109920685 0.018682574 0.0032 0.5098 15.2544 44.5399 0 1 5.175733333 17.38253333 23.8692 8.396666667 0.900366667 0.366233333 1.436333333 0.922233333

Union New Mexico 6.03509 2.90651 -103.45987 36.48017 308.1794508 0.731521556 20.38040033 1.312753264 2.388390516 0 0.0084 17.5585 50.8801 0 1 6.049866667 18.12673333 23.169 9.280866667 0.477133333 1.685633333 1.866533333 0.502033333

San Juan New Mexico 6.28302 1.83947 -108.32338 36.50653 312.019949 1.158500536 25.35264045 0 3.18235007 0 1.485 9.0429 38.6642 0 1 3.074266667 16.69186667 22.9602 6.497466667 0.7436 0.5001 1.1064 0.691366667

Rio Arriba New Mexico 6.21803 2.10064 -106.6885 36.51084 470.6831869 -2.957842357 81.24506056 0.776670909 0.160938401 0.0067 0.364 21.6004 37.7456 1 0 0.413866667 13.2748 19.09253333 4.070666667 1.136166667 0.787733333 1.672166667 0.937533333

Mohave Arizona 5.82492 3.16918 -113.74962 35.70426 564.4588952 -0.923820352 18.52918014 1.867481322 0.284961737 0 0.6288 15.9374 48.9551 0 1 9.079933333 20.81386667 27.6526 12.02846667 1.037466667 0.3055 0.930566667 0.871533333

Apache Arizona 5.43837 2.24361 -109.48687 35.39487 357.7405139 -5.595124246 18.8903924 0.173994281 0.385612927 0.0607 1.9618 12.5811 57.3152 1 0 4.342533333 16.882 22.94893333 7.7278 0.7089 0.3257 1.364366667 0.623266667

Taos New Mexico 5.95533 2.19113 -105.6203 36.58189 623.1824429 -1.967469996 41.81103534 0.471402849 0.148818643 0 0.0139 21.9385 46.3706 1 0 -0.4668 12.05373333 17.60253333 3.338466667 0.996733333 0.9902 1.8539 0.759233333

Colfax New Mexico 6.00686 2.2288 -104.63301 36.60841 334.4341492 -1.821735662 74.68646958 0.385104347 0.12916157 0 0.0041 21.347 42.0422 1 0 2.446866667 14.06346667 19.25006667 5.892466667 0.649166667 1.456666667 2.109433333 0.576366667

Mora New Mexico 6.11973 2.60454 -104.93522 36.02109 520.0552403 -3.014600639 32.16776794 0.429779959 0.080914199 0 0 23.6219 33.6114 1 0 3.608066667 15.22046667 20.1492 6.865866667 0.744666667 1.235766667 2.2198 0.620266667

Harding New Mexico 6.13774 3.05813 -103.81008 35.86478 233.2803138 -0.797411009 35.40341615 1.530027625 0.473308845 0 0.267 15.8038 47.312 0 1 6.929733333 19.01693333 23.83086667 9.9392 0.5191 1.389733333 2.0395 0.508266667

Sandoval New Mexico 6.8726 2.63608 -106.85738 35.69491 360.8382792 -2.335500967 84.63470196 0.502010358 0.380237133 0.0006 0.3863 14.8652 43.3533 1 0 3.286333333 16.06306667 21.50566667 6.3874 0.805 0.674566667 1.482966667 0.743833333

Santa Fe New Mexico 6.5187 2.91885 -105.96794 35.51404 668.6219275 -6.534903162 32.6894437 0.409910459 1.705291849 0.0074 0.3921 18.8867 51.3913 1 0 3.3388 15.72 20.81153333 6.466266667 0.897733333 0.931733333 1.84 0.8456

McKinley New Mexico 6.16207 2.18259 -108.26029 35.57979 129.9017082 -2.915945323 18.33099635 0.196200494 0.017334305 0 0.4025 10.9317 47.5135 1 0 3.185933333 15.77073333 21.58793333 6.430933333 0.6251 0.4179 1.266833333 0.570733333

San Miguel New Mexico 6.2254 2.98605 -104.80425 35.48868 325.315386 -0.662584965 24.93706558 0.321796883 0.034356257 0 0.3171 14.8505 41.6633 0 1 5.717066667 17.58273333 22.3466 8.7284 0.645466667 1.121033333 2.0089 0.628766667

Quay New Mexico 6.00941 3.04579 -103.53623 35.1081 361.2036362 2.408561267 16.50522325 7.234790955 0.9995395 0 0.4405 18.9704 51.9055 0 1 8.525866667 20.8894 25.5212 11.37106667 0.7271 1.399833333 1.913133333 0.6531

Yavapai Arizona 5.80989 2.93059 -112.54652 34.60719 1779.196047 37.52942121 35.76541135 0.623064206 0.760513393 0 0.3024 19.9244 49.6837 0 1 8.6052 19.219 25.54073333 11.67733333 1.3171 0.299666667 1.5734 1.052

Guadalupe New Mexico 6.16283 3.00893 -104.77719 34.86521 182.1142609 -0.461200117 9.812815385 0.354864863 0.012811114 0 0.8688 21.4941 51.1081 0 1 7.579933333 19.56353333 24.11786667 10.4674 0.623466667 1.0842 1.715966667 0.612133333

Torrance New Mexico 7.06679 3.08691 -105.83865 34.64626 330.8497323 1.543388595 38.02097717 0.585649211 0.849643217 0.0007 0.4248 17.786 47.3229 1 0 5.738 17.9188 22.65246667 8.524333333 0.6841 0.941566667 1.76 0.765666667

Curry New Mexico 5.62364 3.01747 -103.32954 34.58079 656.0134131 93.49953971 31.74218105 26.88386313 7.213594279 0 0.4635 22.3445 50.8317 0 1 8.754333333 20.98653333 25.2876 11.558 0.7752 1.495533333 2.003266667 0.757566667

Valencia New Mexico 5.98322 2.59738 -107.75949 34.88125 300.048529 3.245006413 54.0246596 0.087541249 0.422298361 0.0002 0.8771 13.3777 43.1026 1 0 4.2942 16.70793333 22.04313333 7.4256 0.589466667 0.484233333 1.512666667 0.615466667

De Baca New Mexico 6.18583 2.99845 -104.40188 34.3452 230.3922072 1.383425608 16.02251593 0.52638759 0.69031163 0 2.6519 18.6742 59.402 0 1 8.9512 21.0458 25.34226667 11.72966667 0.632566667 1.228366667 1.679033333 0.629633333

Roosevelt New Mexico 5.87406 3.01459 -103.46558 34.01997 470.206171 21.54544925 26.4721887 11.05319018 3.835879766 0 0.4567 16.1506 66.1462 0 1 9.425666667 21.51 25.5284 12.136 0.707 1.4373 1.9214 0.735633333

Catron New Mexico 4.69197 2.2299 -108.40427 33.91887 255.6612498 -0.826937384 26.73752967 0.073225975 0.025631012 0.0614 0.6746 20.0752 49.4619 1 0 4.019333333 15.61453333 20.70466667 7.4848 0.651833333 0.4245 1.803033333 0.701466667

Socorro New Mexico 6.8101 2.38861 -106.92361 34.01122 276.408596 2.177668063 10.49588453 0.244546371 0.431477583 0 1.0574 13.6836 53.0938 0 1 6.723066667 19.064 23.8036 9.549533333 0.462033333 0.575933333 1.496733333 0.653366667

Gila Arizona 4.9865 3.25038 -110.80739 33.80589 380.2351908 -1.502841511 0.661747497 0.994458043 0.023147017 0.0007 0.4936 18.9886 50.8362 0 1 8.526133333 19.23453333 25.0838 11.81666667 1.4711 0.310733333 1.8151 0.9545

Lincoln New Mexico 6.95053 2.66403 -105.45197 33.74885 278.8905868 -1.326497094 16.86856425 0.442886716 0.022279667 0 0.7786 22.9375 38.8817 0 1 7.569866667 19.428 23.62986667 10.32573333 0.573166667 0.774533333 1.850133333 0.642666667

Chaves New Mexico 6.534 3.0169 -104.45553 33.36675 306.8129411 23.13364003 28.03724001 1.321612867 1.696024223 0.0002 1.5704 18.0226 53.3096 0 1 9.982933333 21.9416 25.87726667 12.6208 0.5607 0.9101 1.6269 0.5999

Greenlee Arizona 4.50938 2.64543 -109.24364 33.22709 2343.125301 -4.11149233 47.67062693 4.99792468 5.132276633 0.0067 0.5543 24.0613 43.1972 0 1 7.2394 18.24773333 23.30033333 10.33946667 1.077466667 0.417366667 2.092066667 0.844

Graham Arizona 5.00287 3.13381 -109.88883 32.94097 550.9051901 6.930024918 6.530551883 3.843231563 5.607043249 0 0.906 23.3827 38.7377 0 1 9.551933333 20.33173333 25.55553333 12.5418 1.073133333 0.3215 1.870933333 0.7065

Lea New Mexico 5.95554 3.0567 -103.40104 32.79175 224.1189632 3.088152723 21.21392645 2.649755956 1.229510969 0 0.6831 11.6125 69.3049 0 1 11.4168 23.23326667 26.7842 13.95006667 0.7058 1.213833333 1.918433333 0.756166667

Sierra New Mexico 6.30876 1.81746 -107.18294 33.13291 217.3610972 0.728238934 27.16271714 0.435737114 0.412842296 0 0.9761 17.3578 45.3324 0 1 7.898133333 19.67533333 24.11726667 10.68906667 0.496933333 0.407133333 1.392966667 0.614866667

Pinal Arizona 5.14336 3.603 -111.34838 32.91428 3638.464653 44.72491959 29.59759796 23.95858049 23.6440801 0 2.3875 17.4588 54.0117 0 1 13.52593333 24.3444 30.15553333 16.5524 1.028233333 0.172366667 1.394233333 0.537

Otero New Mexico 6.11158 2.29572 -105.73418 32.61359 321.8312335 0.935697849 50.7959646 0.239805591 0.522889975 0 1.6811 18.9992 43.5785 0 1 9.2954 20.95886667 24.95173333 11.88293333 0.6681 0.5308 1.6593 0.664966667

Grant New Mexico 5.63921 2.20666 -108.37494 32.74231 234.8351546 -0.651914659 26.96808585 0.016685025 0.010714147 0.0002 0.4123 22.6573 39.692 0 1 8.504933333 19.6158 24.27586667 11.27426667 0.743866667 0.340833333 1.665766667 0.680066667

Dona Ana New Mexico 6.03505 2.13222 -106.82401 32.35977 1903.360011 158.5142177 30.63679537 9.55517694 20.75934934 0 1.2553 15.4956 47.9973 0 1 10.7886 22.57326667 26.7508 13.2528 0.631933333 0.359633333 1.394166667 0.674833333

Eddy New Mexico 6.22061 3.30143 -104.2955 32.47545 377.4974908 9.357241369 35.70996613 2.311990496 2.709601485 0.027 2.532 19.9654 50.077 0 1 11.50046667 23.298 26.83713333 13.98 0.5898 0.821066667 1.644966667 0.598833333

Hidalgo New Mexico 5.46699 2.56966 -108.71308 31.9274 169.1959628 1.026691051 19.13884344 0.735478736 0.870159555 0 1.2779 19.4421 41.1476 0 1 10.24366667 21.10713333 25.48466667 12.94973333 0.682366667 0.2368 1.727233333 0.4855

Luna New Mexico 6.05145 2.29696 -107.73789 32.18317 350.2474149 -2.102338278 18.65633961 2.705683869 4.911576325 0 2.2673 21.8839 38.8262 0 1 10.62626667 21.9778 26.23386667 13.1414 0.5314 0.2584 1.381766667 0.5331

Pima Arizona 4.99941 3.49367 -111.79089 32.10476 4884.306207 -7.165119408 28.62829293 13.29461165 16.71190681 0 1.0253 14.5373 54.8843 0 1 13.54906667 23.4136 28.8244 16.52266667 0.6799 0.1551 1.641 0.421866667

Cochise Arizona 5.12205 2.73959 -109.75072 31.89036 1906.987889 13.78748062 25.35603099 7.069558188 9.440371937 0 0.9359 20.6216 47.0943 0 1 10.5162 20.88773333 25.41106667 13.3338 0.741133333 0.239766667 1.964533333 0.4712

Santa Cruz Arizona 5.06705 3.0741 -110.84613 31.52997 2290.683048 -31.02306665 15.80560199 0.943525791 0.370424676 0 0.0547 20.8445 41.5775 0 1 11.09573333 20.58093333 25.13133333 14.04806667 0.5956 0.213366667 2.2317 0.436066667

County: name of the county

State: state the county belongs to

Fvalue: farm value ($) per acre

Profit: profit ($) per acre

Subsid: subsidies ($) per acre

Irrig: share of land using irrigation (%)

Ferti: fertilizers used per acre ($)

T\_av\_Winter/Spring/Summer/Fall: average temperature for that season (Celsius) – 4 variables

P\_av\_Winter/Spring/Summer/Fall: average precipitation for that season (mm) – 4 variables

F.heat: frequency of extreme heat events (nb. of events)

F.cold: frequency of extreme cold events (nb. of events)

HIGH: dummy =1 if highly elevated, =0 otherwise (elevation > 1.89 km above sea level)

LOW: dummy =1 if low-elevated, =0 otherwise (elevation < 1.89 km above sea level)

XCTRD: longitude

YCTRD: latitude

Flood: flood frequency ratio (%)

Salinity: salinity concentration (mmhos/cm)

Clay: clay content (%)

Sand: sand content (%)

--- All the data are in linear format ---

Based on this dataset, use R to answer the following questions **(round your results to 3 decimals):**

1. Estimate the following model and present R squared, the adjusted-R squared, the coefficient estimates, the associated p-values in a table (5 points):

|  |  |
| --- | --- |
|  | (1) |

1. Interpret the value and significance level of and of (2 points)
2. What is the 95% confidence interval of ? (2 points)
3. Among the four weather variables used in this model, which one has a significant impact on farm land value? Interpret its impact on farmland value (1 points).
4. Are the errors of this model normally distributed? What test do you use? (2 points)
5. Test the overall significance of the sample regression (i.e. ) (3 points)