Precipitation and Water Use in New Mexico Counties

Table 1: Historic annual precipitation, predicted precipitation change, and 2015 water use in New Mexico by county.

County	Historic annual precipitation (mm)	Predicted precipitation change (future – historic; in mm)	Water use 2015 (acre-feet/100 people)
Bernalillo	337.3	0.2	14
Catron	428.9	3.9	5
Chaves	379.8	-0.1	23
Cibola	355.9	1.9	9
Colfax	483.7	-9.9	16
Curry	447.8	-9.5	12
De Baca	370.9	-6.2	14
Dona Ana	278.8	3.3	17
Eddy	369.6	5.8	26
Grant	443.4	6.5	10
Guadalupe	384.0	-9.6	15
Harding	412.6	-11.9	12
Hidalgo	353.2	5.4	42
Lea	388.1	4.5	16
Lincoln	405.2	-5.7	25
Los Alamos	506.7	-1.7	19
Luna	288.2	5.3	14
McKinley	316.4	3.5	5
Mora	528.0	-13.4	8
Otero	395.6	-1.0	12
Quay	436.4	-10.8	17
Rio Arriba	460.1	2.4	5
Roosevelt	421.8	-7.8	16
Sandoval	366.9	2.3	9
San Juan	257.5	7.3	17
San Miguel	452.9	-13.2	9
Santa Fe	414.7	-6.4	8
Sierra	340.4	1.9	15
Socorro	328.7	2.7	13
Taos	479.0	-0.9	8
Torrance	416.8	-6.4	10
Union	419.5	-11.5	13
Valencia	264.7	2.6	7

Additional Information:
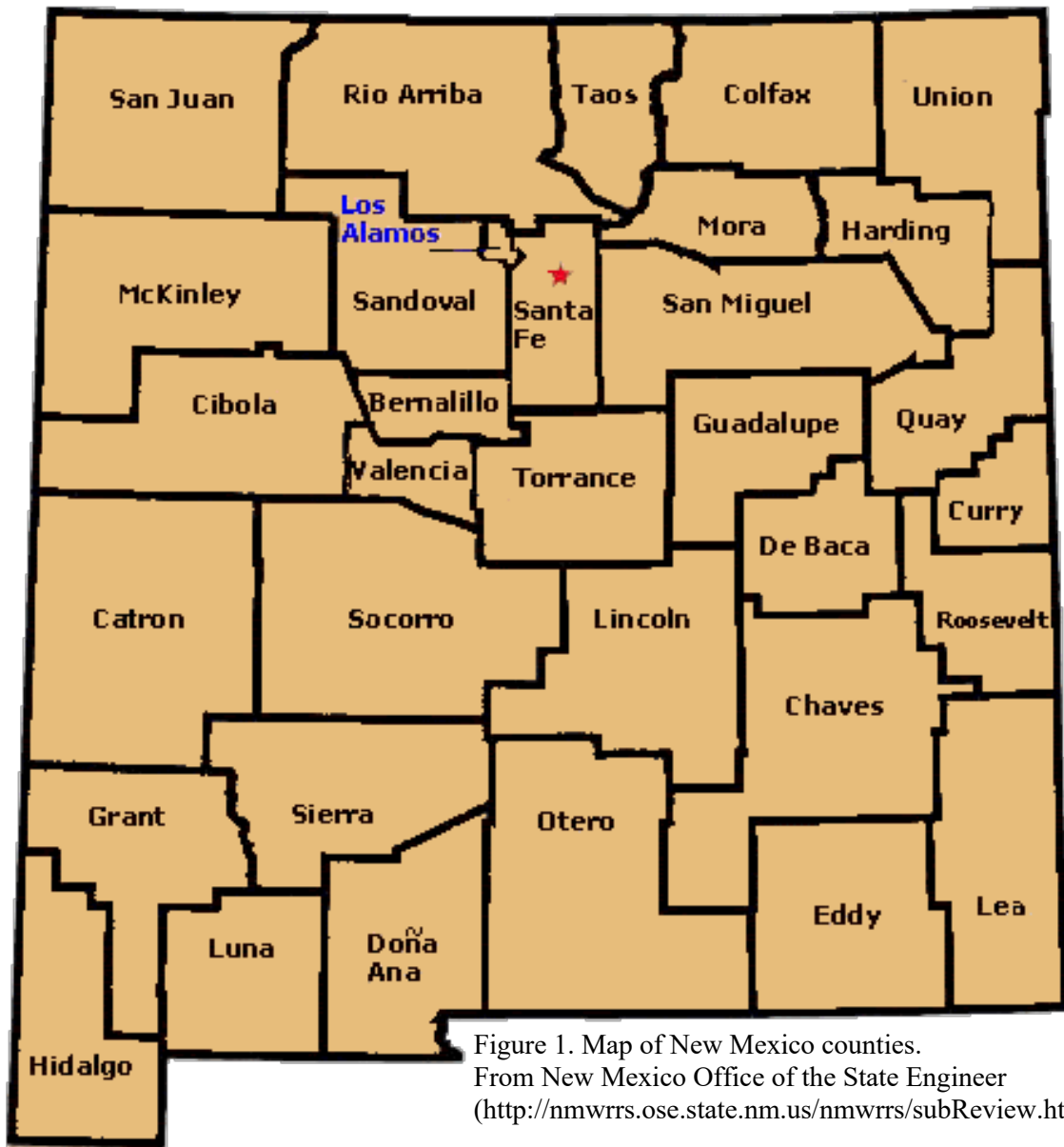
Figure 1. Map of New Mexico counties.
From New Mexico Office of the State Engineer
(http://nmwrrs.ose.state.nm.us/nmwrrs/subReview.html

Variables Included in Dataset:

Historic Annual Precipitation represents data from 1971 – 2000 and were calculated as an average over the 30-year period using the Parameter-elevation Regressions on Independent Slopes (PRISM) model. These data were presented as an interactive map created by the USDA Southwest Regional Climate Hub, where "historic" is referred to as "current".

Precipitation data source: https://swclimatehub.info/data/county-temp-precip-maps/precipitation

Predicted Precipitation Change was calculated by subtracting historic annual precipitation from future annual precipitation. Future annual precipitation represents projected annual precipitation amounts from 2040 – 2069, and was calculated using the Multivariate Adaptive Constructed Analogs (MACA). These data are also represented on an interactive map tool created by the USDA Southwest Regional Climate Hub.

Water Use 2015 was calculated by dividing measured public water supply use by the estimated population in 2015.

Public water supply use data were taken from the 'New Mexico Water Use by Categories' report published in 2015 by The Water Use and Conservation Bureau of the New Mexico Office of the State Engineer. The Office of the State Engineer publishes this report every 5 years. Public water supply use is represented as total withdrawals from both surface and groundwater by community water systems. Users of public water supply includes municipalities that supply "residential, commercial, and industrial water", prisons, residential subdivisions, mobile home parks, and irrigation of "golf courses, parks, athletic fields, and ponds and lakes".

Public water supply data source: https://www.ose.state.nm.us/WUC/wuc_waterUseData.php).

Estimated population in 2015 was calculated by University of New Mexico Geospatial and Population Studies (GPS), a sector of UNM that releases population estimates annually on July 1. The following equation is uesd to provide this estimated value. Number of expected births and deaths were using mortality data from the New Mexico Department of Health. Net migration was calculated based on historical trends.

Population Estimate (2015) = Population Estimate (2014) + Births – Deaths + Net Migration

Population estimate (2015) data source: https://gps.unm.edu/pru/projections