

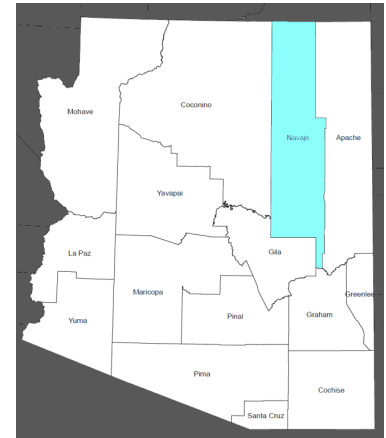
# Navajo County, AZ

## Arizona County Agricultural Economy Profiles University of Arizona Cooperative Extension

### Overview

Navajo County is located in northeastern Arizona between Coconino and Apache counties. As of 2018, the population of Navajo County was just over 110,000. More than half of the county's population (54.1%) resides in rural areas, and a large share of the county consists of tribal areas, including lands of the Navajo Nation, the Hopi, and the White Mountain Apache tribe. Major population centers include Winslow, Holbrook, and Show Low. Top industries in Navajo County include government, tourism, forestry, and agriculture, specifically livestock production. Prior to the closing of the Kayenta Mine in 2019, coal mining was a major industry in the county.

Agriculture plays a prominent role in Navajo County. Nearly 70% of the county's land is in farms and on-farm agriculture directly accounts for 2.8% of all private industry jobs and 1.9% of county GDP, higher than the state and national averages. The county's agricultural production is heavily influenced by tribal agricultural producers, nationally ranking as a top producer of horses, goats, and traditional corn. Navajo County accounts for about 1% of Arizona's total agricultural cash receipts.



Map of Navajo County, Arizona

Indicator	Navajo County	Arizona
Land Area (square miles)	9,960	113,990
Land in Farms (Crops, Grazing) (square miles)	6,896	40,822
Population (2018)	110,445	7,171,646
Annual Average Population Growth Rate (2010-18)	0.3%	1.4%
Percent of Population Over 65 (2018)	18.1%	17.5%
Percent Population Rural (2010)	54.1%	10.2%
Total Employment (2018)	26,677	2,826,095
Share Federal, State, & Local Government Employment (2018)	35.4%	13.8%
GDP (2018)	\$3.8 billion	\$348.3 billion
Ag, Forestry, & Hunting GDP (on-farm agriculture) (2018)	\$70.5 million	\$2.3 billion

Industry	Location Quotient
All other traveler accommodation	11.56
Outpatient mental health centers	8.20
Rv parks and campgrounds	6.63
Ambulance services	5.78
Automotive glass replacement shops	5.58
Nursery, garden, and farm supply stores	3.96
<b>Support activities for forestry</b>	<b>3.95</b>
Hardware stores	3.67
All other nonresidential trade contractors	3.49
Elementary and secondary schools	3.24

Top 10 Private Industries in Navajo County by Employment LQ

An economy can be characterized by the industries that make up the “base” of the economy. A common way to measure this is with location quotients (LQs), which measure the ratio of a particular industry's share of employment within a region to the same industry's share of national employment. An industry with a LQ greater than 1.25 is considered part of the economic base, exporting goods and services and bringing money into the region. LQs also help identify a region's areas of specialization. Higher LQs indicate greater specialization.

Of the top 10 most concentrated industries in Navajo County, forestry and logging ranks 7<sup>th</sup>, with employment nearly 4 times more concentrated than the national average. At a higher level of industry aggregation, the county also specializes in animal production and aquaculture, with a LQ of nearly 4 (not presented in table).

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Every 5 years, U.S. Department of Agriculture releases the Census of Agriculture, which provides the most comprehensive source of information on agricultural production by county. The Census provides information on the number of farms, types of crops and livestock produced, and farm characteristics, among other information. A farm is defined as any establishment that produced and sold, or could have sold, more than \$1,000 or more of agricultural products in the Census year. The following information comes from the most recent 2017 Census of Agriculture.

## Farms

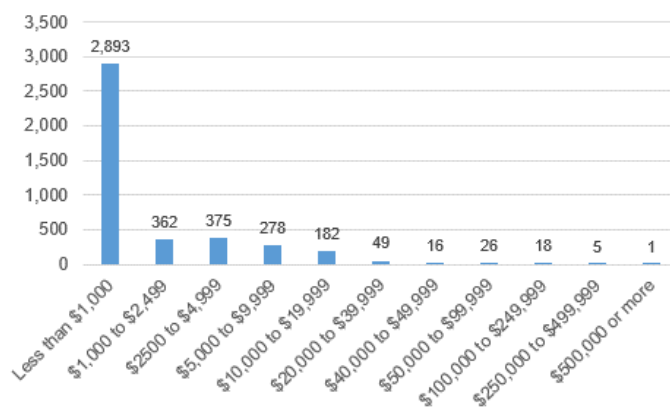
There were 4,205 farms in Navajo County in 2017, covering 5,825 acres of cropland (71% irrigated) and 3,641,910 acres of pastureland (<1% irrigated). The average farm size was 1,049 acres, significantly larger than the national average of 441 acres, with the top 6% of farms accounting for 84% of county acreage.

Of 4,205 farms, 2,893 had less than \$1,000 in sales and only 1 farm had more than \$500,000 in sales. A large majority of county farms (89%) are family- or individually-held, 5% are partnerships, and only 0.3% are non-family-held corporate farms.

Farms are classified by the type of agricultural products they produce. When a farm or ranch produces more than one agricultural product, they are classified by the product that constitutes more than 50% of their sales. The most common type of operation in Navajo County is sheep and goat farming (1,596 farms), followed by beef cattle ranching and farming (1,144 farms), and aquaculture and other animal production\* (891 farms).

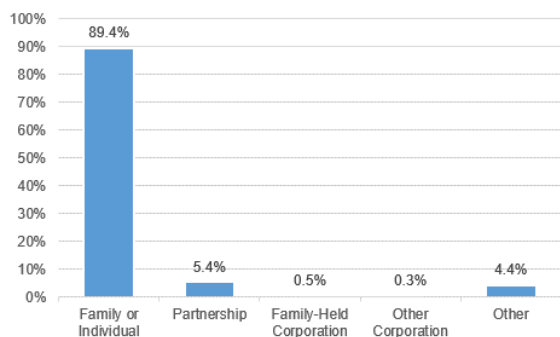
While the number of farms is helpful in understanding how many farms “specialize” in different types of agricultural production, it does not reflect the magnitude or scale of production by commodity, which is better captured by sales or cash receipts (next page).

Navajo County Farms by Annual Sales, 2017



Source: USDA

Navajo County Farms by Legal Organization, 2017



Source: USDA

Navajo County Farms by Industry

Category	Farms
<b>Total farms</b>	<b>4,205</b>
Oilseed and grain farming	63
Vegetable and melon farming	37
Fruit and tree nut farming	11
Greenhouse, nursery, and floriculture production	8
Other crop farming	143
Cotton farming	0
Hay and all other crop farming	143
Beef cattle ranching and farming	1,144
Cattle feedlots	5
Dairy cattle and milk production	0
Hog and pig farming	19
Poultry and egg production	8
Sheep and goat farming	1,596
<u>Aquaculture and other animal production*</u>	<u>891</u>

\* Includes farms where no single type of livestock accounts for more than 50% of farm sales.

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## Production & Marketing

Navajo County is a heavily livestock-dominant county, with 91% of county cash receipts originating from sales of livestock, and 9% from sales of crops.

Major agricultural commodities by sales include *cattle and calves* (value of sales not disclosed), *vegetables, melons, potatoes, and sweet potatoes* (\$2.5 million), and *sheep, goats, wool, mohair, and milk* (\$1.4 million).

The county's agricultural production is heavily influenced by tribal agriculture, ranking it in the top 1% of U.S. counties for equine sales as measured by head sold, in the top 5% of counties for sales of goats, in the top 5% of counties for harvested acres of honeydew, cantaloupes, watermelon, and squash, and in the top 5% for production and sales of wool.

## Tribal Agriculture

Navajo County includes portions of the Navajo Nation, the Hopi Reservation, and the Fort Apache Reservation. Statistics reported below represent production within entire tribal areas, therefore production occurring within Navajo County is only a portion of the totals reported.

In 2017, there were 16,129 farms operating on the Navajo Nation with 16 million acres in farms and 212,465 acres in crops, generating \$87.7 million in sales. The most common type of farms on the Navajo Nation are those producing sheep and lambs, followed by horses, cattle and calves, and goats.

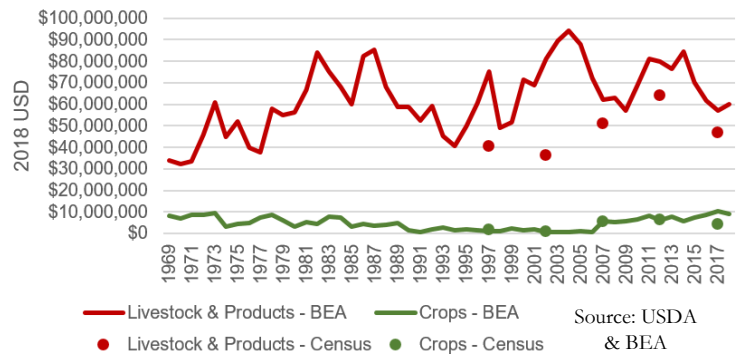
There were 204 farms operating on the Hopi reservation with 1.7 million acres in farms, of which 3,182 acres were crops, generating total sales of \$1.5 million. Cattle and calf producers and farms growing traditional corn are the most common types of farms on the Hopi reservation. Traditional corn and vegetables are the most commonly produced crops.

The Census of Agriculture does not report agricultural statistics for the Fort Apache Reservation.

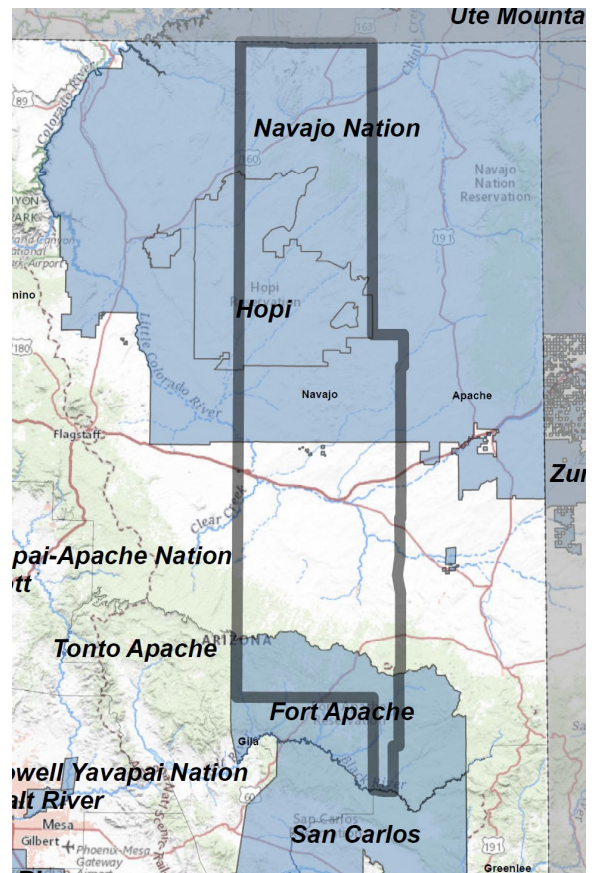
## Women in Agriculture

Navajo County is one of three counties in Arizona with more female than male principal agricultural producers (Apache, Coconino, and Navajo counties). These three counties also have more female producers than male producers overall, including non-principal producers. In fact, these three counties propel Arizona to lead the nation as the state with the highest share of female agricultural producers (49%). Arizona is also the state with the largest number of tribal agricultural producers, and a majority of tribal agricultural producers in the state are women. Within the Navajo Nation, which has a total of 26,495 producers, 53% of producers are female.

Navajo County Agricultural Cash Receipts for Crops & Livestock, 1969 to 2018



Navajo County Tribal Areas



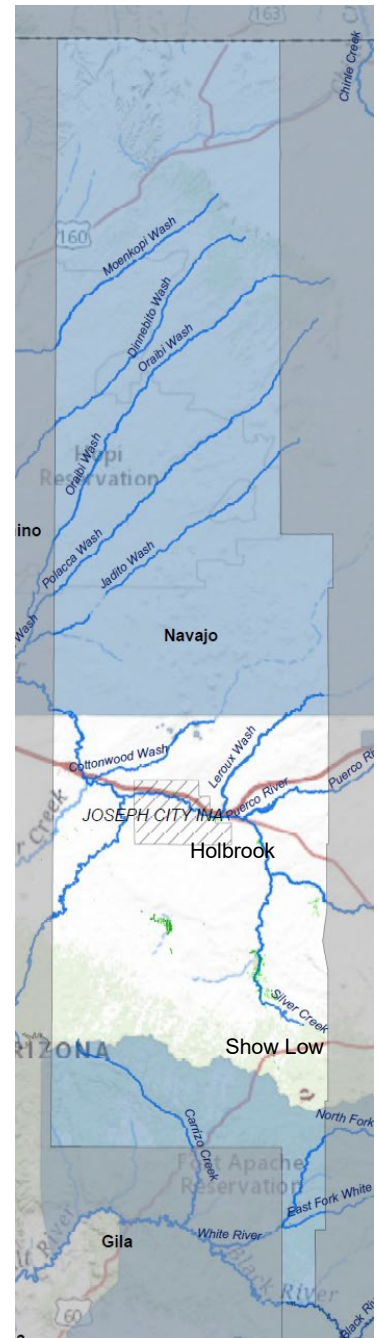
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## Irrigation Water Use

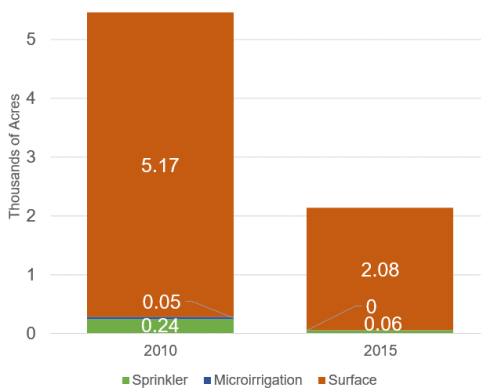
In Arizona, agriculture accounts for about 75% of the state’s water use. More than half of withdrawals for agricultural uses in the state are from surface water. In some areas of the state with high demand, groundwater withdrawals for irrigated agriculture are limited by the 1980 Groundwater Management Act. This legislation established five Active Management Areas (AMA) as well as other Irrigation Non-Expansion Areas (INA) where groundwater pumping and expansion of irrigated agriculture are limited. There is no land in Navajo County within an AMA, but approximately 1.8% of the county is located in the Joseph City INA established under the Groundwater Management Act.

Based on 2015 USGS estimates of water use, agriculture accounted for 38.3% of Navajo County water withdrawals. Agricultural irrigation use in Navajo County is dominated by production of crops. In 2015, an estimated 5,029 acre-feet (AF) was sourced from groundwater for agricultural production and 4,850 AF was sourced from surface water. An acre-foot is the amount of water required to cover one acre one foot deep in water. Irrigated crop production is concentrated in Snowflake and Joseph City. Groundwater and surface water both decreased between 2010 and 2015, and total irrigated acreage is estimated to have declined significantly between 2010 and 2015.

Navajo County Water Map

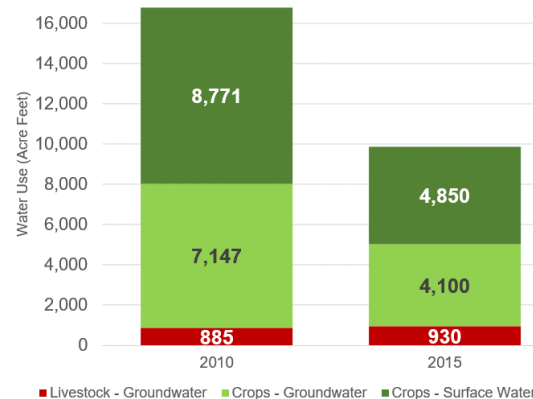


Navajo County Irrigated Acres by Irrigation Technology



Source: USGS

Navajo County Agricultural Water Use by Use and Source



Source: USGS