Agriculture

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Size and Scope of Utah Agriculture 2019

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Location

Utah is part of the Mountain West region of states and is bordered by Idaho to the north, Wyoming to the northeast, Colorado to the east, Arizona to the south, and Nevada to the west. It also shares its southeast corner with New Mexico. As of July 1, 2019, the U.S. Census Bureau (2019) estimated the population of Utah was 3,205,958.

The state's topography varies quite drastically due primarily to multiple mountain ranges running through the state. The two largest mountain ranges within the state are the Wasatch and the Uinta. The Wasatch Range is contained within the north central part of the state and runs north and south, while the Uinta Mountains run generally east to west throughout the northeast portion of the state. Other smaller ranges are also in the state. The contrast in elevation from high mountain peaks over 10,000 feet to the low-lying valleys (some lower than 3,500 feet) provides reason enough for large variations in climate throughout the state. With the state being roughly 350 miles long, the contrast in distance from the equator from the northern regions of the state compared with the southern regions also contributes to the large climatic differences contained within Utah.

Land Use and Ownership

Public Grazing

Total land acreage in Utah is 52,696,960 acres. Of this total, the federal government owns 33,275,132 acres or 63.1% of all Utah land (Vincent, Hanson, & Argueta, 2017). Much of this federal land is used for grazing livestock. The Bureau of Land Management reports they currently manage approximately 22 million acres of Utah lands with 1.3 million animal unit months (AUMs) (Bureau of Land Management, 2019), while the U.S. Forest Service controls approximately 8,192,980 acres with a total of 861,113 AUMs (USDA Forest Service, 2017).

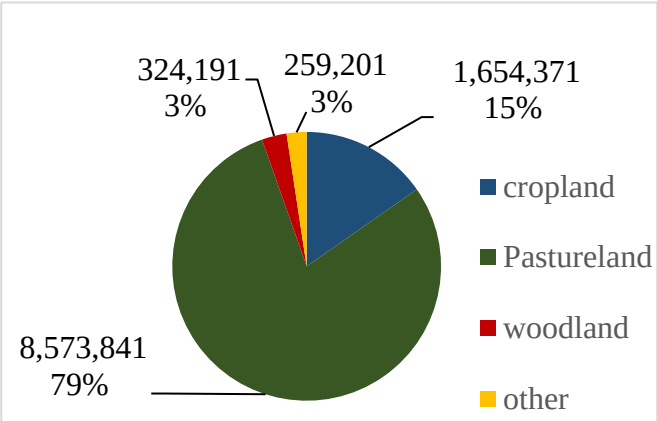

Figure 1. ***Utah Farmland by Category***

Source: 2017 USDA-NASS Census of Agriculture

Farm and Cropland

Table 1 details total farm acres as well as size and number of farms within the state. As shown in Table 1, there are an estimated 10,811,604 acres of farmlands in Utah. Of this total, the farmland can further be categorized by specific use as shown in Figure 1. There are 18,409 farm operations in the state with an average size of 587 acres. The average estimated value of land and buildings is $1,817/acre. Since the 2012 agriculture census, the number of farm operations and value of land and buildings per acre are up 2.1 and 19.6 percent, respectively, while the average farm size is down 3.7 percent.

The top 10 Utah counties are ranked in Table 2 according to total acres in farmland as well as market value of agricultural products sold.

Table 2.
Top 10 Agricultural Utah Counties

Rank	Land in Farms (Acres)	Agriculture Revenue ($1,000)
1	San Juan 1,657,212	Beaver $258,008
2	Box Elder 1,220,773	Utah $202,580
3	Duchesne 1,057,413	Millard $179,959
4	Iron 512,940	Sanpete $171,757
5	Millard 481,539	Cache $162,737
6	Rich 374,947	Box Elder $134,068
7	Tooele 348,934	Iron $133,512
8	Utah 303,795	Sevier $88,546
9	Sanpete 301,691	Duchesne $57,892
10	Summit 295,588	Juab $53,679

Source: 2017 USDA-NASS Census of Agriculture

Table 1.
Farms, Land in Farms, and Use

	2012	2017	% Change
Land in Farms (Acres)	10,974,396	10,811,604	-1.5%
Number of Farms	18,027	18,409	2.1%
Average Farm Size (Acres)	609	587	-3.5%
Area in Cropland (Acres)	1,645,898	1,654,371	0.5%
Harvested Cropland (Acres)	1,054,369	1,062,894	0.8%
Irrigated Land (Acres)	1,104,257	1,097,219	-0.6%

Source: 2017 USDA-NASS Census of Agriculture

Climate and Growing Season

Differences in elevation and distance from the equator primarily drive the variation of climate within the state. The northern mountains and elevated valleys naturally have a colder climate as compared to the southern, low-lying valleys. For every 1,000-foot change in elevation there is an approximately 3-degree Fahrenheit change in mean annual temperature, while for every 1-degree increase in latitude there is an approximately 1.5- to 2-degree change (Ruffner, 1985). Median first hard freeze (28 degrees Fahrenheit) and median last hard freeze by region of the state are depicted in Figure 2.

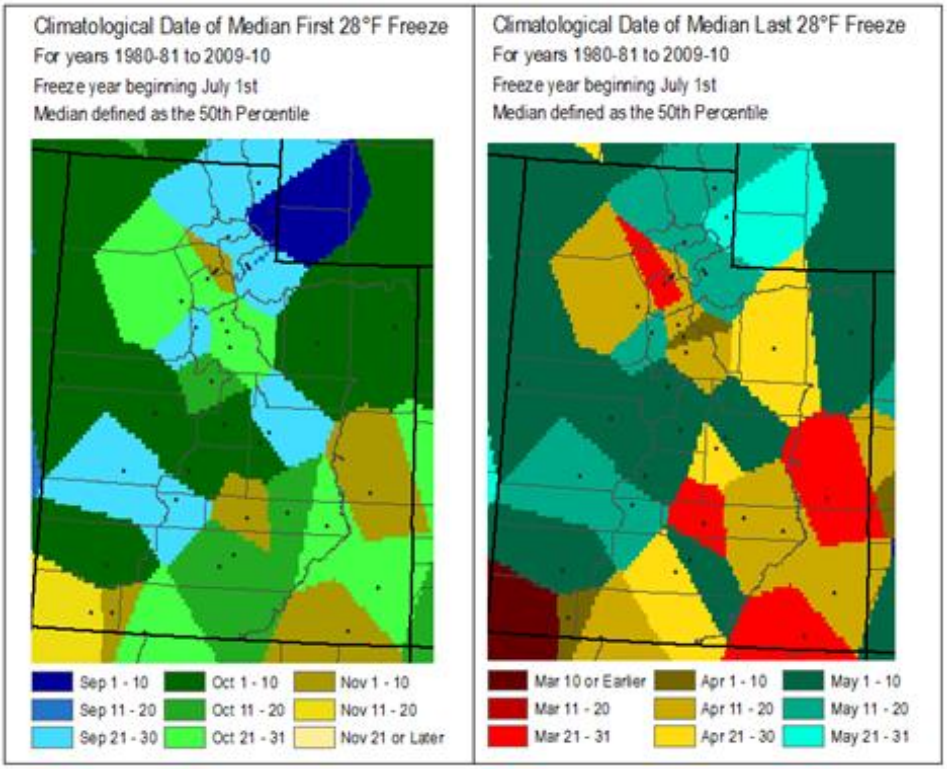

Figure 2. ***First and Last Median Hard Freeze Date Throughout Utah***
Source: Midwestern Regional Climate Center

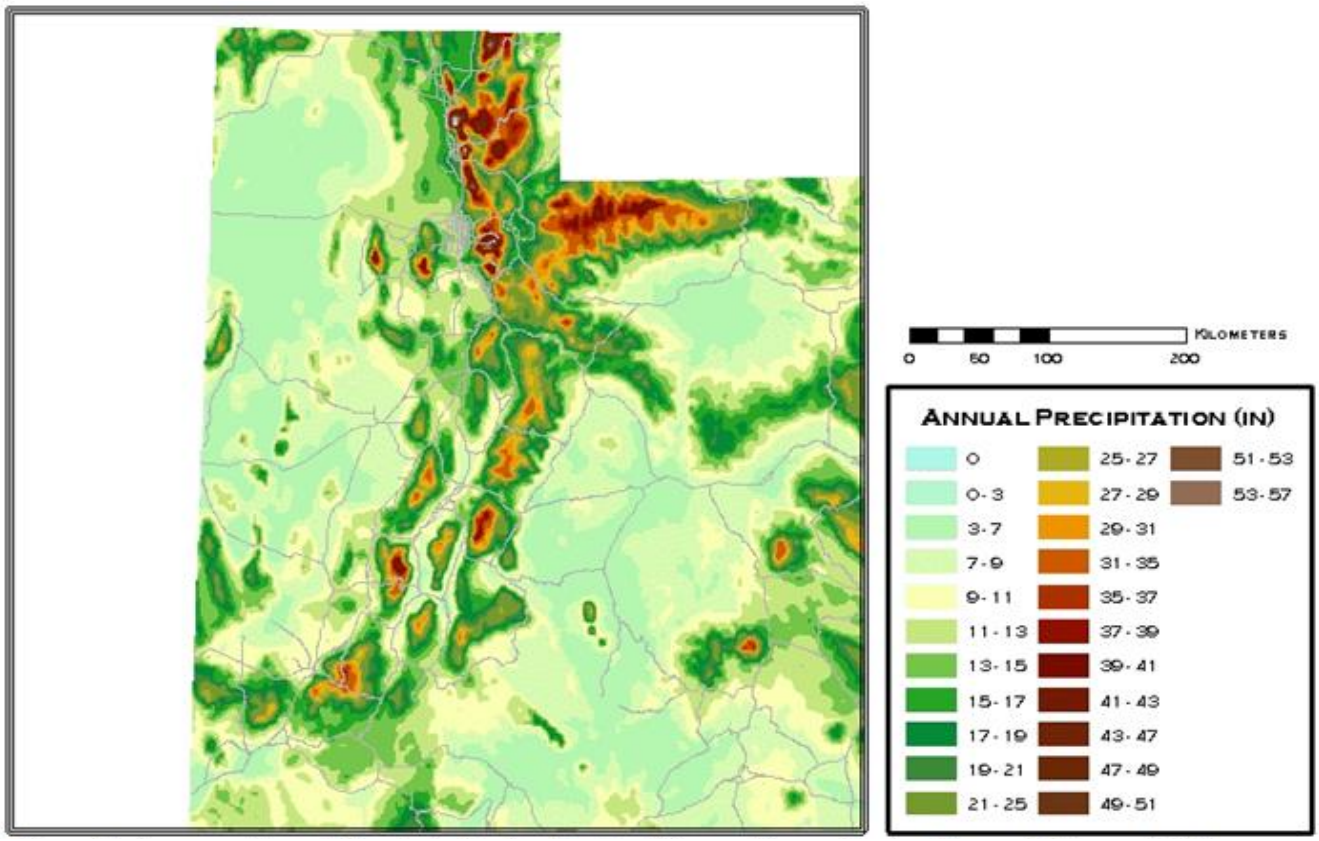

Figure 3. ***Average Annual Precipitation by Region*** Source: Pinyon Ecology Research Group, 2013

Within the state's principle agricultural areas, the growing season is typically 4-5 months long. Due to the varied topography, however, there is often a 2-week difference in growing season length even within the same valley, with the bottomlands having a shorter growing season as compared to the benches (Ruffner, 1985). Figure 3 displays the average annual precipitation for the state.

As can be seen from Figure 3, precipitation in the state varies quite dramatically depending on location. Some of the high mountain regions receive over 40 inches while some of the desert basins receive less than 4 inches annually. In general, Utah is a very dry state, and as such, most all of the agricultural production within the state relies on irrigation.

Much of Utah experiences rapid cooling at night, even on hot summer days. This can result in large variation in daily temperatures, and can cause stress on less hardy crops. The cold night air tends to settle into the low-lying valley floors, leaving the higher benches less susceptible to the large temperature variations during the growing season. For this reason, the benches are often reserved for sensitive fruit production while the valleys are primarily used for production of hardier crop varieties such as grains and hay (Ruffner, 1985).

Crop Production

Though Utah is not among the leading agricultural production states in the country, it has enjoyed a rich history of agricultural production. Today, the agriculture industry within the state can be described as a diverse set of enterprises both big and small. Table 3 lists the primary crops grown together with total production, acres harvested, and average yield within the state.

Table 3.
Utah Major Crops, Production, Acres Harvested, and Average Yield

Primary Crops	Production			Area Harvested (Acres)			Average Yield/Acre		
	2012	2017	% Change	2012	2017	% Change	2012	2017	% Change
Corn for grain (bu.)	5,379,627	6,225,791	16%	33,879	36,219	7%	158.79	171.89	8%
Corn for silage (tons)	1,200,480	1,370,975	14%	52,481	57,643	10%	22.87	23.78	4%
Alfalfa & hay (tons)	2,731,135	2,888,401	6%	761,515	759,934	0%	3.59	3.80	6%
Winter wheat (bu.)	5,498,779	5,687,417	3%	124,785	132,709	6%	44.07	42.86	-3%
Spring wheat (bu.)	535,746	731,685	37%	13,315	12,679	-5%	40.24	57.71	43%
Barley (bu.)	1,957,673	1,535,353	-22%	25,908	19,976	-23%	75.56	76.86	2%
Oats (bu.)	207,071	157,953	-24%	2,973	2,107	-29%	69.65	74.97	8%
Sorghum silage (tons)	1,745	2,835	62%	9	13	44%	193.9	218.1	12%
Soybeans (bu.)	(D)	6,006	(D)	(D)	176		-	-	-
Beans, dry edible (cwt)	(D)	3,863	(D)	(D)	(D)		-	-	-

Source: 2017 USDA-NASS Census of Agriculture

Hay

Within Utah, hay production is central to agriculture. By commodity type, hay ranks first in the state by a large margin in total acres of production. Much of the hay goes toward supporting the livestock and dairy operations within the state, with a lesser portion sold out-of-state or sent to the export market. Utah ranks 22nd among all states in all hay production and 11th in alfalfa production (Utah Department of Agriculture & Food, 2018). Depending on the region of the state, growing seasons can accommodate two to four cuttings of alfalfa per season, with average yields of 4.1 tons per acre. Utah's top alfalfa-producing counties include Millard, Iron, Box Elder, Cache, and Duchesne.

Grains

Utah also produces many grains including wheat, corn, barley, and oats. Of these grains, wheat has the most acres of production in the state. Nationally, Utah ranks 30th, 41st, and 14th in wheat, corn, and barley production, respectively. Approximately 90% of the wheat produced in the state is winter wheat, with 10% spring wheat. Yields in Utah for wheat, corn, barley, and oats average 50, 170, 80, and 75 bu./acre, respectively. (Utah Department of Agriculture & Food, 2018).

Fruits, Nuts, and Berries

In addition to these traditional crops, Utah is also quite diverse in fruit production and ranks in the top ten nationally for tart cherries, apricots, and sweet cherries. The 2017 census of agriculture reports that Utah has 654 orchards in operation over 8,566 acres. The vast majority of fruit production in the state takes place along the Wasatch Front, with Utah County ranking first in total production within the state. Total acres and number of farms categorized by fruits, nuts, and berries are displayed in Table 4.

Table 4.
Acres and Total Farms of Fruits, Nuts, and Berries in Utah

Fruit	Acres	Farms
Apples	1,211	380
Apricots	164	146
Cherries, sweet	421	170
Cherries, tart	4,732	67
Grapes	77	130
Nectarines	79	49
Peaches	1,582	310
Pears	100	169
Plums	44	104
Nuts		
Almonds	15	15
Pecans	66	31
Walnuts	13	30
Berries		
Raspberries	118	108
Strawberries	49	31
Blackberries	27	54

Source: 2017 USDA-NASS Census of Agriculture

Crop Marketing

Much of the state's harvested hay and grains feed the livestock within the state and is most often used on a producer's own operation or marketed and sold within the state. However, Utah also has a healthy agricultural export market with approximately $418 million worth of agricultural commodities exported in 2017 (Office of the United States Trade Representative, 2019).

Livestock Production

Livestock sales account for roughly 70 percent of total farm sales and thus play a dominant role in Utah agriculture. Of the state's total 10,811,604 acres of farmland, less than 10% is in harvested cropland. Thus, much of the farmland reported by the census of agriculture is used as grazing land for the state's livestock operations. The inventories of the major classes of livestock produced in the state as of 2017 compared with 2012 inventories are listed in Table 5.

Utah ranks 28th, 21st, and 5th in beef cow, dairy, and sheep inventory, respectively. Utah also ranks 2nd in the nation for both wool and mink pelt production. Utah produced 2.3 million pounds of wool and 734 thousand mink pelts in 2017 with respective values of $4.1 and $26.6 million (Utah Department of Agriculture & Food, 2018). There were 161,900 female mink bred in Utah to produce kits in 2018 (USDA, 2018).

Table 5.
Major Livestock Commodities

Primary Livestock	2012	2017	% Change
All cattle and calves	776,833	764,725	-2%
Beef cows	369,670	338,572	-8%
Milk cows	90,449	98,389	9%
All sheep and lambs	287,883	300,749	4%
Hogs	731,666	549,340	-25%
Chicken, layers	3,814,859	4,480,850	17%

Source: 2017 USDA-NASS Census of Agriculture

Livestock Marketing

Marketing is an important part of the ranching business, but the way ranchers market their livestock has changed over time in Utah. Ranchers increasingly utilize video auctions in addition to more traditional marketing techniques such as order buyers and local livestock auctions; however, the use of local cattle auctions has decreased over time and is almost parallel to the use of video auctions.

Irrigation

With much of Utah classified as a desert, agriculture within the state must rely on irrigation to be sustainable. In Utah, more than half of the irrigated acreage is irrigated by sprinklers. Wheel lines are among the most popular sprinkler irrigation systems; however, pivot irrigation systems are quickly growing in popularity. For fruit and vegetable production, drip or micro-sprinklers are often used (Allen, 2017). Surface water irrigation is also highly utilized within the state. The mountain ranges provide numerous streams and rivers that flow to the valleys below. In addition to pumping directly from the rivers, many canals and ditches formed by numerous irrigation companies divert the surface water to best fit the production needs of the agriculture communities they serve.

Farm Income and Operator Characteristics

Cash receipts from 2017 crops equaled $560.9 million and cash receipts from livestock totaled $1.27 billion. Total 2017 cash receipts were $1.8 billion, up $22 million since the previous agriculture census in 2012. Figure 4 displays the total farm sales for the past five census of agriculture years, subdivided by crop and animal totals.

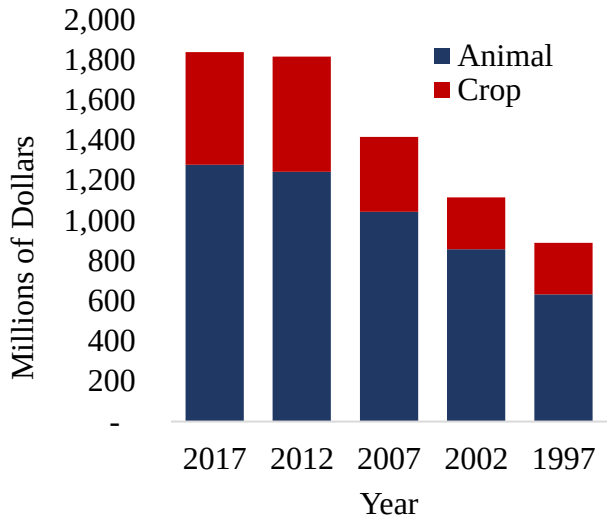

Figure 4. ***Utah Farm Sales by Year***

The demographic characteristics of Utah farm operators are described in Table 6.

Table 6.
Producer Characteristics by Percentage

Characteristic	Percentage
Sex	
Male	63.88
Female	36.12
Age	
<35	9.00
35-64	59.21
65 and older	31.79
Race	
American Indian/Alaskan Native	4.23
Asian	0.31
Black or African American	0.02
Native Hawaiian/Pacific Islander	0.10
White	94.89
More than one race	0.45
New and beginning farmers	28.31

Source: 2017 USDA-NASS Census of Agriculture

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