Utah Agriculture Outlook
Stakeholder Webinar
Thursday September 30, 2021
11 am to 1 pm MT

Zoom Registration:
https://usu-edu.zoom.us/meeting/register/tZYsduuhjr0tHtxoaShd3AtNRRnLCcUjGOe1

Agenda

1. **Key Factors in the Utah Hay Market**
   Ryan Larsen, Extension Risk & Farm Management Specialist, Utah State University

2. **The Beginning of the End? Revisiting Current and Future Drought Conditions**
   Anastasia Thayer, Extension Water Economist, Utah State University

3. **Unintended Effects of Utah’s Greenbelt Act on Farmland Protection**
   Man Li, Resource Economist, Utah State University

4. **UDAF Emergency Disaster Relief Loan Program**
   Jim Bowcutt, UDAF Conservation Division Director

5. **USDA Agricultural Marketing Service Pandemic Response and Safety Grant Program Overview**
   Kynda Curtis, Extension Agriculture & Food Marketing Specialist, Utah State University

Description
This two-hour webinar hosted by USU Extension Economics will cover current market conditions for hay and forage products, as well as current and predicted drought conditions that may impact Utah’s producers. Research on the farmland protection impacts resulting from the Utah Greenbelt Act will also be presented. Additionally, speakers will provide an overview of the UDAF Emergency Disaster Relief Loan Program and the USDA-AMS Pandemic Response and Safety Grant Program.

The agriculture outlook is targeted at agricultural stakeholders in Utah including, but not limited to, state and federal agency representatives, farmer and rancher groups, farm financial institutions, tribal government representatives, and Extension leadership. There will be time after each presentation for questions and discussion.
Utah Agriculture Outlook Stakeholder Webinar

11 am to 1 pm
USU Extension Economics

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1. The Beginning of the End? Revisiting Current and Future Drought Conditions
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5. USDA Agricultural Marketing Service Pandemic Response and Safety Grant Program Overview
   Kynda Curtis, Extension Agriculture & Food Marketing Specialist, Utah State University
Program Evaluation Survey

Please respond to our Ag Outlook evaluation survey. Thank you!

- [https://usu.co1.qualtrics.com/jfe/form/SV_etZS JtbWs3BCSeq](https://usu.co1.qualtrics.com/jfe/form/SV_etZS JtbWs3BCSeq)

- USU Extension Applied Economics website
  - [https://extension.usu.edu/apec/](https://extension.usu.edu/apec/)

PANDEMIC RESPONSE AND SAFETY GRANT PROGRAM

USDA Agricultural Marketing Service (AMS)

Kynda Curtis, Extension Ag & Food Marketing Specialist
Applied Economics, USU Extension
Pandemic Response and Safety Grant

The Pandemic Response and Safety (PRS) Grant Program provides grants to specialty crop producers, food processors, distributors, and other select producers to protect workers against novel coronavirus (COVID–19). The program was authorized under section 1907 of the Families First Coronavirus Response Act (No. 116-191), which directed USDA to develop the PRS Grant Program in response to an exemption statement issued by the Department of Agriculture in March 2021, and updates are provided by USDA. Information on the PRS Grant Program is available at https://usda-prs.grantsolutions.gov/usda.

Interested in Applying?

Program Information

To learn more about the Pandemic Response and Safety Grant Program:

https://usda-prs.grantsolutions.gov/usda
PRS Funding

• Approximately $650 million is available
• Funds can be used for costs incurred between January 27, 2020 (date upon which health emergency was declared U.S. Department of Health and Human Services) and December 31, 2020
• Funding request amount requirements
  • Minimum: $1,500
  • Maximum: $20,000

Costs Covered

• Workplace Safety
  • Provide personal equipment, thermometers, cleaning supplies, sanitizer, or hand washing stations
  • Installation and purchase of air filters or new signage

• Market Pivots
  • Develop and implement online platforms
  • Utilize online or print materials to communicate market pivots

• Retrofitting Facilities
  • Installation and purchase of protective barriers made of plexiglass or plastic sheeting, walk up windows, heat lamps/heaters, fans, tents, propane, weights, tables, chairs and lighting
Costs Covered, cont.

- Transportation
  - Secure additional transportation service for workers
  - Offer new delivery routes or distribution services
- Worker Housing
  - Secure additional housing resources/services to maintain social distancing or to allow for quarantining of new or exposed employees
- Medical
  - Offer or enable vaccinations, testing, or healthcare treatment of infected employees, including any paid leave due to COVID-19 infection

Eligibility

- Producers, food processors/manufacturers, and wholesaler/distributors denoted in the Eligible Industry Table (coming soon online), and farmers markets
- Eligible entity types included
  - Small businesses
  - Nonprofits with 501c(3) IRS Status
Eligibility, cont.

- No cost sharing or matching funds required
- All applicants must be entities owned, operated and located in the 50 US states and territories
- USDA may expand eligibility in future rounds to include
  - Mid-sized businesses
  - Commodities not covered in first round

Application Process

- All applicants must obtain a federal DUNS (data universal number system) number before applying
  - DUNS number required for federal payments
- Must submit a complete application package, which includes:
  - Application Organization Form
  - PRS Activity Checklist
- Must be submitted through USDA website at https://usda-prs.grantsolutions.gov/usda
**IMPORTANT DATES**

- Application Period
  - Opens in early October
  - Closes 45 days from application period open
- All applications submitted before the deadline will be considered for funding
- Applications will not be reviewed on a first-come, first-served basis

**Application Criteria**

- All applications must be submitted by the deadline
- Applicant is an eligible entity and meets the SBA small business standards listed in the Eligible Industry Table
- Required forms are included
- All forms are complete and accurate
- USDA will award funding once application period has closed and send a Notice of Award to the application point of contact via email
Questions & Help

• Questions about applying or obtaining a DUNS number
  • Visit the PRS application website at
    • usda.ams.prs@grantsolutions.gov
  • Call the Helpdesk (301)238-5550
    • Monday-Friday, 9AM-9PM ET

Thank you!

kynda.curtis@usu.edu
Grant Opportunities

Pandemic Response and Safety Grant Program

The Pandemic Response and Safety (PRS) Grant Program provides funding to help small scale specialty crop producers and processors, other select producers, meat and other processors, distributors, and farmers markets recover costs incurred by responding to the COVID-19 pandemic, including for measures to protect workers. This program is authorized and funded under the Consolidated Appropriations Act of 2021 (Pub. L. No. 116—260).

Note: All applications submitted before the deadline will be considered for funding. Applications will not be reviewed on a first come first served basis.

Visit the PRS Portal for more information and to apply for the USDA PRS Grant Program!

Important Dates:
Application period opens in early October 2021 for 45 days.

Who Is Eligible?

USDA is targeting support to small scale specialty crop producers and processors, other select producers, meat and other processors, and distributors as noted in the Eligible Industry Table, and farmers markets. The Eligible Industry Table details the different small business size qualifications for each eligible industry.

Eligible entity types include:

- Small Businesses
- Nonprofits
What Is the Maximum Grant Amount?
The minimum funding request amount is $1,500. The maximum funding request amount is $20,000. No cost sharing or matching funds are required.

What Can I Use the Funding For?
Grants will cover activities associated with:

- Workplace Safety: Implementing workplace safety measures to protect against COVID-19
  - Purchase of personal protective equipment, thermometers, cleaning supplies, sanitizer or hand washing stations
  - Installation and purchase of air filters or new signage
- Market Pivots: Implementing market pivots to protect against COVID–19
  - Development and implementation of online platforms
  - Creation of online or print materials to communicate market pivots
- Retrofitting Facilities: Retrofitting facilities for worker and consumer safety to protect against COVID–19
  - Installation and purchase of protective barriers made of plexiglass or plastic sheeting, walk up windows, heat lamps/heaters, fans, tents, propane, weights, tables, chairs and lighting
- Transportation: Providing additional transportation options to maintain social distancing and worker and consumer safety to protect against COVID-19
  - Additional transportation services for workers
  - New delivery routes or distribution services
- Worker Housing: Providing worker housing that protects against COVID-19
  - Additional housing resources/services to maintain social distancing or to allow for quarantining of new or exposed employees
- Medical: Providing health services to protect workers against COVID-19
  - Vaccinations, testing or healthcare treatment of infected employees, including any paid leave due to COVID-19 infection

Contact Us
For questions about this program, please email usda.ams.prs@grantsolutions.gov or call (301) 238-5550. Help desk hours are Monday through Friday, from 9 a.m. to 9 p.m. Eastern Time.

Photo credit: Adobe Stock
**Utah Agriculture Outlook Stakeholder Webinar**

*The Beginning of the End? Revisiting Current and Future Drought Conditions*

*September 30, 2021*

*Anastasia Thayer*

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Should Utah’s drought emergency declaration be extended into winter?

What that extension would mean for arid Utah

By Amy Jen O’Dougherty | @Amyjo16 | Sep 27, 2021, 12:30pm MDT

Utah’s water outlook slightly improved, but West remains in grip of long-term drought

Some members of the water development commission suggested Utah needs to dam more rivers.

(Rick Egan | The Salt Lake Tribune) The Glen Canyon Dam, on the Colorado River in southern Arizona, on Tuesday, Aug. 3, 2021.

Utah drought picture still looks grim in spite of recent rainfall

By Nick Watt | Sep 30, 2021, 10:28 AM

Updated: September 30, 2021 at 10:28 AM
### U.S. Drought Monitor

#### Abnormally Dry
- **Description:**
  - Drought: A drought is a period of time during which precipitation is significantly below normal levels, leading to water stress in plants and animals. Abnormal dryness can cause water stress in crops and livestock, leading to reduced yields and increased water usage.

<table>
<thead>
<tr>
<th>Category</th>
<th>Description</th>
<th>Possible Impacts</th>
</tr>
</thead>
<tbody>
<tr>
<td>D0</td>
<td>Abnormally Dry</td>
<td>-1.0 to -1.5</td>
</tr>
<tr>
<td></td>
<td></td>
<td>21 to 30</td>
</tr>
<tr>
<td></td>
<td></td>
<td>21 to 30</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.5 to 0.7</td>
</tr>
<tr>
<td></td>
<td></td>
<td>21 to 30</td>
</tr>
</tbody>
</table>

#### Moderate Drought
- **Description:**
  - Drought: A drought is a period of time during which precipitation is significantly below normal levels, leading to water stress in plants and animals. Moderate drought can cause water stress in crops and livestock, leading to reduced yields and increased water usage.

<table>
<thead>
<tr>
<th>Category</th>
<th>Description</th>
<th>Possible Impacts</th>
</tr>
</thead>
<tbody>
<tr>
<td>D1</td>
<td>Moderate Drought</td>
<td>-2.0 to -2.9</td>
</tr>
<tr>
<td></td>
<td></td>
<td>11 to 20</td>
</tr>
<tr>
<td></td>
<td></td>
<td>11 to 20</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.8 to 1.2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>11 to 20</td>
</tr>
</tbody>
</table>

#### Severe Drought
- **Description:**
  - Drought: A drought is a period of time during which precipitation is significantly below normal levels, leading to water stress in plants and animals. Severe drought can cause water stress in crops and livestock, leading to reduced yields and increased water usage.

<table>
<thead>
<tr>
<th>Category</th>
<th>Description</th>
<th>Possible Impacts</th>
</tr>
</thead>
<tbody>
<tr>
<td>D2</td>
<td>Severe Drought</td>
<td>-3.0 to -3.9</td>
</tr>
<tr>
<td></td>
<td></td>
<td>6 to 10</td>
</tr>
<tr>
<td></td>
<td></td>
<td>6 to 10</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1.3 to 1.5</td>
</tr>
<tr>
<td></td>
<td></td>
<td>6 to 10</td>
</tr>
</tbody>
</table>

#### Extreme Drought
- **Description:**
  - Drought: A drought is a period of time during which precipitation is significantly below normal levels, leading to water stress in plants and animals. Extreme drought can cause water stress in crops and livestock, leading to reduced yields and increased water usage.

<table>
<thead>
<tr>
<th>Category</th>
<th>Description</th>
<th>Possible Impacts</th>
</tr>
</thead>
<tbody>
<tr>
<td>D3</td>
<td>Extreme Drought</td>
<td>-4.0 to -4.9</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3 to 5</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3 to 5</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1.6 to 1.9</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3 to 5</td>
</tr>
</tbody>
</table>

#### Exceptional Drought
- **Description:**
  - Drought: A drought is a period of time during which precipitation is significantly below normal levels, leading to water stress in plants and animals. Exceptional drought can cause water stress in crops and livestock, leading to reduced yields and increased water usage.

<table>
<thead>
<tr>
<th>Category</th>
<th>Description</th>
<th>Possible Impacts</th>
</tr>
</thead>
<tbody>
<tr>
<td>D4</td>
<td>Exceptional Drought</td>
<td>5.0 or less</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0 to 2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0 to 2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2.0 or less</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0 to 2</td>
</tr>
</tbody>
</table>

#### Ranges
- **Palmer Drought Severity Index (PDSI)**
- **CPC Soil Moisture Model (Percentile)**
- **USGS Weekly Streamflow (Percentile)**
- **Standardized Precipitation Index (SPI)**
- **Object Drought Indicator (Percentile)**
Historic Drought in Utah
Historic Drought in Utah

Historic Drought in Utah – May 1934

<table>
<thead>
<tr>
<th>Drought Category</th>
<th>Percentage of UT</th>
<th>Drought Category</th>
<th>Percentage of UT</th>
</tr>
</thead>
<tbody>
<tr>
<td>D0 - Abnormally Dry</td>
<td>73.5% (D0-D4)</td>
<td>W0 - Abnormally Wet</td>
<td>3% (W0-W4)</td>
</tr>
<tr>
<td>D1 - Moderate Drought</td>
<td>65.5% (D1-D4)</td>
<td>W1 - Moderate Wet</td>
<td>0.5% (W1-W4)</td>
</tr>
<tr>
<td>D2 - Severe Drought</td>
<td>60.5% (D2-D4)</td>
<td>W2 - Severe Wet</td>
<td>0% (W2-W4)</td>
</tr>
<tr>
<td>D3 - Extreme Drought</td>
<td>53.4% (D3-D4)</td>
<td>W3 - Extreme Wet</td>
<td>0% (W3-W4)</td>
</tr>
<tr>
<td>D4 - Exceptional Drought</td>
<td>42% (D4)</td>
<td>W4 - Exceptional Wet</td>
<td>0% (W4)</td>
</tr>
<tr>
<td>No Data Available</td>
<td>0%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Historic Drought in Utah – Dec 1956

<table>
<thead>
<tr>
<th>Category</th>
<th>Percentage</th>
<th>Area of UT</th>
</tr>
</thead>
<tbody>
<tr>
<td>D0 - Abnormally Dry</td>
<td>98%</td>
<td>(D0-D4)</td>
</tr>
<tr>
<td>D1 - Moderate Drought</td>
<td>94%</td>
<td>(D1-D4)</td>
</tr>
<tr>
<td>D2 - Severe Drought</td>
<td>81.4%</td>
<td>(D2-D4)</td>
</tr>
<tr>
<td>D3 - Extreme Drought</td>
<td>70%</td>
<td>(D3-D4)</td>
</tr>
<tr>
<td>D4 - Exceptional Drought</td>
<td>50.3%</td>
<td>(D4)</td>
</tr>
<tr>
<td>No Data Available</td>
<td>0%</td>
<td>of UT</td>
</tr>
</tbody>
</table>

### Historic Drought in Utah – April 1977

<table>
<thead>
<tr>
<th>Category</th>
<th>Percentage</th>
<th>Area of UT</th>
</tr>
</thead>
<tbody>
<tr>
<td>D0 - Abnormally Dry</td>
<td>99.9%</td>
<td>(D0-D4)</td>
</tr>
<tr>
<td>D1 - Moderate Drought</td>
<td>99.7%</td>
<td>(D0-D4)</td>
</tr>
<tr>
<td>D2 - Severe Drought</td>
<td>98.4%</td>
<td>(D2-D4)</td>
</tr>
<tr>
<td>D3 - Extreme Drought</td>
<td>96.4%</td>
<td>(D3-D4)</td>
</tr>
<tr>
<td>D4 - Exceptional Drought</td>
<td>93.3%</td>
<td>(D4)</td>
</tr>
<tr>
<td>No Data Available</td>
<td>0%</td>
<td>of UT</td>
</tr>
</tbody>
</table>
Historic Drought in Utah

Utah Precipitation
January-December

1901-2000 Mean 13.56 in.

Historic Drought in Utah

Utah
Year-to-Date Average Temperature

1934
2012
2017
2015
2003
Average
1908
1912
1903
1895
1898
2021

January
February
March
April
May
June
July
August
September
October
November
December
Current Conditions

• 2020 was the driest year on record and one of the hottest. This led to record dry soils.

• Our snowpack was dismal (topping out at 81% and peaking 10 days early), and record dry soils soaked up what little runoff we received. As a result, streams statewide are flowing below normal and reservoirs never refilled.

• A dry April was followed by an even drier May, with less than one-half-inch of precipitation accumulated in valley locations. Record summer temperatures haven’t helped. However, monsoons returned this year (noticeably absent the last two years) and have improved soil moisture and reduced system demand as people shut off their sprinklers. Rain does little to refill reservoirs. It will take an above-average snowpack to help pull the state out of drought.

https://water.utah.gov/water-data/drought/

Statewide Precipitation

As of September 1,
• 79% of normal precipitation
• 214% of Normal Precipitation for August (3.7 inches of rainfall)

To restore conditions to “average” for the year, 7.5 inches of rain needed between now and the end of September.
Soil Saturation

Water Supply and Reservoir Storage

- Thirty-two of Utah’s largest 42 reservoirs are below 55% of available capacity, the same as last week.
- Overall statewide storage is 48% of capacity, slightly less than last week.
- Of the 98 measured streams, 53 flowed below normal this week compared to 50 last week.
Water Supply and Reservoir Storage

Statewide Reservoir Storage (Sep 1)

- 38 Major Reservoirs (Excl. Lake Powell, Flaming Gorge, Bear Lake, Utah Lake, Strawberry & Jordanelle)
- Including Bear Lake & Utah Lake
- Including Strawberry & Jordanelle

*Values in () represent the change from Aug 1.

Forecasts

U.S. Seasonal Drought Outlook
Drought Tendency During the Valid Period

Valid for September 16 - December 31, 2021
Released September 16

Author: Adam Hatman
NOAA/NWS/NCEP/Climate Prediction Center

http://go.usa.gov/3eZ73
Seasonal Temperature Outlook

Seasonal Precipitation Outlook
La Niña Forecast

La Niña watch
ENSO-Neutral conditions are present.
A transition to ENSO-neutral to La Niña is favored in the next couple of months, with a 70-80% chance of La Niña during the Northern Hemisphere winter 2021-22.
Conclusions

- Drought is still here
- Drought impacts are forecasted to persist
- Historic drought perspective can be helpful but impacts today matter more
Resources

• Utah DNR Weekly Drought and Water Updates
• Climate and Water Reports from USDA NRCS
• https://water.utah.gov/water-data/drought/

Questions?

Contact: Anastasia Thayer
anastasia.thayer@usu.edu
Utah Department of Agriculture and Food

Emergency Disaster Relief Loan Program

Utah Agriculture Outlook Stakeholder Webinar
September 30, 2021

Purpose of the Emergency Disaster Loan Program

“Assist agricultural producers by providing loan funds to help them address extraordinary circumstances related to drought that have resulted in production losses from May 15, 2021 and April 1, 2022”

$5,000,000 available
Eligible Losses:

- Crop Producers may seek reimbursement for crop loss (including for orchard and row crops) if they can document a 50% loss since the declaration of drought disaster compared to their average production over the prior three years.
- Livestock producers may seek reimbursement for: death loss of breeding stock, the cost of replacement of breeding stock sold due to drought, and the cost of feed purchased.
- Loan funds may be used to cover drought related losses only.

Loan Information

- Unsecured 7 year fully amortized loans.
- 0% interest for the first 2 years, 2.75% thereafter.
- No administrative Fees will be charged to the applicant.
- Initial payment to be made in 2023.
- Loan maximum is $100,000 per entity.
- To be eligible, the agricultural producer must have an Adjusted Gross Income (AGI) of less than $250,000, as documented on their most recent tax return.
- All Disbursement must be completed within six months of loan closing or before June 30, 2022 unless the program is extended by UCC.
- A 12% Late Fee may be assessed on past due principle balance.
Documents Required For Loan Applications

- Complete and signed application
- 2 years of tax returns
- Credit will be pulled by UDAF from a credit agency.

*Credit will not be used to make determination of loan approval, but will be included in each loan file as historical collection data to be used in the event of an audit.

Application Process

- Any Incomplete application will be placed at the bottom of rotation.
- The application date is considered the date of complete application, not the date of the original submission.
- Once all documents are received, the application will be processed for eligibility.
- Applications will be approved on a first complete, first processed basis for funding.
- All Signatures will be completed through DocuSign.
Potential Reasons for Denial of an Application

- Incomplete application
- Lack of qualifying losses
- Tax returns show that the producer has over maximum AGI
- Program funds are exhausted
- The producer applied outside of application window

*all denied applicants will receive a written notice that includes the reason for the denial.

Additional Information:

Go to our website:

https://ag.utah.gov/emergency-disaster-relief-loan-program/
Questions:

Contact Jim Bowcutt
Email: jdbowcutt@Utah.gov
Cell: 435-232-4017
Unintended Effects of Utah Greenbelt Act on Farmland Protection

Man Li, Ph.D.
Department of Applied Economics
Utah State University
Background of the Utah GB Act (FAA)

• First passed in 1969

• A standard type of preferential property tax program
  • Tax breaks differentiate use-value from market-value
  • Establish a set of quasi-market signals guiding peri-urban landowners to preserve farmland from development

• Each year, State Tax Commission determines taxable valuations per acre of ag land by types and classes
How to Qualify GB Assessment?

- Land size
  - Must be 5+ acres in conjunction with other eligible land under the same ownership
  - 5- acres may also qualify if use to plant irrigated food crops
- Land productivity
  - Meet at least 50% of the county average yield for the given type and location
- Land use
  - Must have been actively devoted to ag use for at least two consecutive years immediately preceding the tax year
- If disqualified, subject to a rollback tax for up to 5 years
Research Questions

• Does the Utah GB policy help slow the rate of conversion from farmland to urban use?

• Is the GB policy likely to be abused under certain conditions?
Why Do These Research Questions Matter?

• Utah GB amid unprecedented development pressure due to the state’s rapid population & employment growth in the recent decade

• Three policy systems addressing farmland preservation problem
  • Prescriptive regulation—“Exclusive ag zoning” in OR and HI
  • Direct gov’t action—PDR and TDR
  • Taxation—Use-value assessment, e.g., GB in UT

• Utah GB Act is an understudied program and region in the literature

• Utah is among only a few states that allow ag to be a non-primary use of a GB parcel
## Mean Characteristics of GB and Non-GB Parcels in Salt Lake County, 2010–18

<table>
<thead>
<tr>
<th></th>
<th>Non-GB parcels</th>
<th>GB parcels</th>
<th>GB parcels primarily in ag use</th>
<th>GB parcels primarily in non-ag use</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total</td>
<td>Developed</td>
<td>Total</td>
<td>Developed</td>
</tr>
<tr>
<td>% parcel in agricultural use</td>
<td>66</td>
<td>31</td>
<td>70</td>
<td>57</td>
</tr>
<tr>
<td>% parcel in urban use</td>
<td>5.2</td>
<td>39</td>
<td>3.4</td>
<td>21</td>
</tr>
<tr>
<td>Distance from urban boundary (miles)</td>
<td>.26</td>
<td>.12</td>
<td>.46</td>
<td>.27</td>
</tr>
<tr>
<td>EVI-based productivity</td>
<td>.26</td>
<td>.11</td>
<td>.32</td>
<td>.27</td>
</tr>
<tr>
<td>% of parcels meet GB criteria</td>
<td>19</td>
<td>34</td>
<td>90</td>
<td>96</td>
</tr>
<tr>
<td># of parcels</td>
<td>166,537</td>
<td>22,199</td>
<td>17,403</td>
<td>2,806</td>
</tr>
</tbody>
</table>

Source: Authors’ calculation based on property tax assessment data, Cropland Data Layers (CDL), and MODIS-EVI for Salt Lake County, 2008–18.
Farmland Change on GB and Non-GB Parcels in Salt Lake County between 2010 and 2018

Source: Siu, Li, and Caplan (2021). Land use change information is derived from CDL; the GB locations are obtained from Salt Lake County’s assessor office.
Data

- Georeferenced, longitudinal parcel-level property tax assessment data, 2008–18
  - Contains GB status, ownership info, etc.

- 30-meter USDA-CDL, 2008–18
  - Focusing on cropland (including idle cropland) and grassland

- 16-day interval, 250-meter NASA’s MODI-EVI
  - An indicator for crop productivity
Methods

• **IV-fixed effects regression** at the parcel level from 2010–18
  
  • **Outcome variable**: rate of annual change from farmland to developed land
  
  • **Variable of particular interest**: GB status
  
  • **Instrumental variable (IV)**: GB Eligibility (a binary variable indicating whether a parcel meets the land-size and land-use criteria)
  
  • **Control variables**: distance from the nearest boundary of urban core, EVI-based ag productivity measure, qualification of UFAA
  
  • **Fixed effects**: parcel fixed effects, ZIP code-by-year fixed effects
## Does Utah GB Policy Preserve Farmland from Development?

<table>
<thead>
<tr>
<th></th>
<th>OLS</th>
<th></th>
<th></th>
<th>2SLS</th>
<th></th>
<th></th>
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</thead>
<tbody>
<tr>
<td></td>
<td>(1)</td>
<td>(2)</td>
<td>(3)</td>
<td>(4)</td>
<td>(5)</td>
<td>(6)</td>
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<tr>
<td>GB</td>
<td>-.194***</td>
<td>-.191***</td>
<td>-.001</td>
<td>-.848***</td>
<td>-.777***</td>
<td>-.013**</td>
</tr>
<tr>
<td>Control var.</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
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<tr>
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<td>Year*ZIP</td>
<td>Year*ZIP, parcel</td>
<td>No</td>
<td>Year*ZIP</td>
<td>Year*ZIP, parcel</td>
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<td>183,940</td>
<td>183,940</td>
<td>183,940</td>
<td>183,940</td>
<td>183,940</td>
<td>183,940</td>
</tr>
<tr>
<td>Mean of dep. variable</td>
<td>.289</td>
<td>.289</td>
<td>.289</td>
<td>.289</td>
<td>.289</td>
<td>.289</td>
</tr>
</tbody>
</table>

Note: The dependent variable is the inverse hyperbolic sine transformed rate of farmland conversion. ** and *** indicate statistical significance at the 5% and 1% levels, respectively. Statistical significance is calculated based on robust standard errors clustered at parcel level.
Is Allowing Non-Ag Activities on GB parcels A Cause for Concern?

|                                | 2SLS          |
|                                | (1)          | (2)          |
| GB comprised of 5- acres of farmland (GB<sup>5</sup>) | -.013**      |              |
| GB comprised of 5+ acres of farmland (GB<sup>1</sup>) | .242***      |              |
| GB primarily in ag use         |              | .464***      |
| GB primarily in non-ag use     | -1.388***    |              |
| Control variables              | Yes          | Yes          |
| Fixed effects                  | Year*ZIP, parcel | Year*ZIP, parcel |

Note: The sample includes 183,940 parcel-year observations. The dependent variable is the inverse hyperbolic sine transformed rate of farmland conversion. The sample mean of dependent variable is .289. ** and *** indicate statistical significance at the 5% and 1% levels, respectively. Statistical significance is calculated based on robust standard errors clustered at parcel level.
Structural Stability of the Estimated GB Effects, 2010–18

Source: Siu, Li, and Caplan (2021)

Salt Lake County GDP growth rate (%)
What’s the Aggregate Magnitude of the GB Effect?

<table>
<thead>
<tr>
<th></th>
<th>Regulation effects</th>
<th>Mean</th>
<th>95% Confidence Interval</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>(1)</td>
<td>(2)</td>
<td>(3a)</td>
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<tr>
<td>$GB^s$</td>
<td>-0.00082</td>
<td>-0.28%</td>
<td>-0.39%</td>
</tr>
<tr>
<td>$GB^t$</td>
<td>0.00748</td>
<td>2.59%</td>
<td>2.51%</td>
</tr>
<tr>
<td>Productivity</td>
<td>0.01542</td>
<td>5.33%</td>
<td>5.16%</td>
</tr>
<tr>
<td>Distance</td>
<td>-0.00942</td>
<td>-3.26%</td>
<td>-3.55%</td>
</tr>
<tr>
<td>UFAA</td>
<td>-0.00015</td>
<td>-0.05%</td>
<td>-0.087%</td>
</tr>
<tr>
<td>Year×Zip</td>
<td>-0.11841</td>
<td>-40.95%</td>
<td>-40.87%</td>
</tr>
<tr>
<td>Parcel</td>
<td>0.39503</td>
<td>136.62%</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>0.28950</td>
<td>100.00%</td>
<td></td>
</tr>
</tbody>
</table>

*Source: Siu, Li, and Caplan (2021)*
Trend of Magnitude of the GB Effects, 2010–18

Source: Siu, Li, and Caplan (2021)
Discussion

• Ongoing debated on taxation-based farmland protection legislation and misuse of the GB tax relief

• Distributional effect: Shift the tax burden from agricultural to urban landowners

• How to encourage participation of landowners in GB while preventing them from abusing the tax-break provision

• Implications for the Urban Farming Assessment Act (UFAA)
  • Recently amended to lower the minimum requirement for parcel size
  • Recommended to expand to include Utah County
Thank you for your attention!

Email: man.li@usu.edu
Key Market Factors for Utah Alfalfa

Key Market Factors

• Grazing Conditions
• Hay Production
• Hay Demand
• Other Markets
Current Situation

Beef Cows in states with 40% Poor to Very Poor

<table>
<thead>
<tr>
<th>Last year</th>
<th>Cows</th>
<th>% of Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>08/02/20</td>
<td>3157</td>
<td>10.06%</td>
</tr>
<tr>
<td>08/09/20</td>
<td>7557</td>
<td>24.08%</td>
</tr>
<tr>
<td>08/16/20</td>
<td>8251</td>
<td>26.29%</td>
</tr>
</tbody>
</table>

This Year

| 08/01/21   | 8509 | 26.92%     |
| 08/08/21   | 8509 | 26.92%     |
| 08/15/21   | 8924 | 28.23%     |

Beef Cows in states with 40% Good to Excellent

<table>
<thead>
<tr>
<th>Last year</th>
<th>Cows</th>
<th>% of Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>08/02/20</td>
<td>21990</td>
<td>70.06%</td>
</tr>
<tr>
<td>08/09/20</td>
<td>18480</td>
<td>58.88%</td>
</tr>
<tr>
<td>08/16/20</td>
<td>16325</td>
<td>52.01%</td>
</tr>
</tbody>
</table>

This Year

| 08/01/21   | 18735| 59.27%     |
| 08/08/21   | 18695| 59.15%     |
| 08/15/21   | 18695| 59.15%     |
Western Hay Production

2020 Hay Production by State

2020 Share of Western Hay Production by State
<table>
<thead>
<tr>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>Japan</td>
<td>489,331.00</td>
<td>560,688.00</td>
<td>580,954.00</td>
<td>662,190.00</td>
<td>600,800.00</td>
<td>339,553.00</td>
<td>314,975.00</td>
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<tr>
<td>China</td>
<td>1,052,455.00</td>
<td>1,170,726.00</td>
<td>868,563.00</td>
<td>840,894.00</td>
<td>1,165,089.00</td>
<td>558,388.00</td>
<td>684,322.00</td>
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<tr>
<td>Korea, South</td>
<td>193,500.00</td>
<td>198,617.00</td>
<td>220,379.00</td>
<td>238,485.00</td>
<td>220,368.00</td>
<td>139,346.00</td>
<td>115,437.00</td>
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<tr>
<td>Saudi Arabia</td>
<td>257,564.00</td>
<td>360,501.00</td>
<td>480,888.00</td>
<td>419,758.00</td>
<td>305,634.00</td>
<td>186,865.00</td>
<td>134,750.00</td>
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<tr>
<td>Taiwan</td>
<td>72,968.00</td>
<td>56,295.00</td>
<td>65,868.00</td>
<td>79,597.00</td>
<td>93,506.00</td>
<td>54,429.00</td>
<td>60,820.00</td>
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<td>United Arab Emirates</td>
<td>319,820.00</td>
<td>248,874.00</td>
<td>241,041.00</td>
<td>293,436.00</td>
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<td>81,321.00</td>
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<tr>
<td>Canada</td>
<td>40,132.00</td>
<td>42,899.00</td>
<td>52,718.00</td>
<td>77,632.00</td>
<td>49,915.00</td>
<td>31,838.00</td>
<td>14,327.00</td>
</tr>
</tbody>
</table>

**US Alfalfa Exports**

<table>
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</thead>
<tbody>
<tr>
<td>Japan</td>
<td>720,851.00</td>
<td>794,454.00</td>
<td>732,398.00</td>
<td>732,408.00</td>
<td>810,088.10</td>
<td>436,791.00</td>
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<tr>
<td>China</td>
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<td>14,957.00</td>
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<td>19,297.00</td>
<td>25,984.00</td>
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<td>16,452.00</td>
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<td>Korea, South</td>
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<td>536,455.00</td>
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<td>352,214.00</td>
<td>323,656.00</td>
<td>173,605.00</td>
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<td>Saudi Arabia</td>
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<td>288.00</td>
<td>478.00</td>
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<td>7.00</td>
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<tr>
<td>Taiwan</td>
<td>95,684.00</td>
<td>131,515.00</td>
<td>110,933.00</td>
<td>120,567.00</td>
<td>130,481.00</td>
<td>50,927.00</td>
<td>68,984.00</td>
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<tr>
<td>United Arab Emirates</td>
<td>77,800.00</td>
<td>55,428.00</td>
<td>50,300.00</td>
<td>51,966.00</td>
<td>32,086.00</td>
<td>14,918.00</td>
<td>14,033.00</td>
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<tr>
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<td>11,147.00</td>
<td>14,521.00</td>
<td>24,715.00</td>
<td>42,053.00</td>
<td>19,972.00</td>
<td>9,009.00</td>
<td>11,200.00</td>
</tr>
</tbody>
</table>

**US Other Hay Exports**
JULY 1 TOTAL CATTLE INVENTORY
U.S., Annual

Data Source: USDA-NASS; 2013 Was Unreported — LMIC Made Estimates
Livestock Marketing Information Center

RETAIL ALL FRESH BEEF DEMAND INDEX
Annual, Using CPI 2000=100

Data Source: Bureau of Labor Statistics, USDA-ERS, Compiled & Analysis by LMIC
Livestock Marketing Information Center
Futures Prices

Key Drivers:

1. USDA projecting beef production to be down 3.2% in 2022
2. Third consecutive year of declining calf crop
3. July feedlot placements were down 8.1% from 2020

OMAHA CORN PRICES

Weekly

Data Source: USDA-AMS
Livestock Marketing Information Center
What will 2022 look like for producers?

- World Economy
- US Ag Trade/Foreign Relations
- COVID
- US Economy/Consumer Demand
- Weather/Feed & Input Costs
- Environmental Policy
Questions

Ryan.larsen@usu.edu