

Climate and Farm Resiliency for the Next Generation

Meeting Series
2022-2023



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*This material is based upon work supported by USDA-NIFA
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National Institute of Food and Agriculture
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Program Overview

- Nebraska land values, cash rents, & financial trends
 - Presented by Jim Jansen
- Landlord/tenant communication issues & farm succession planning
 - Presented by Allan Vyhnalek
- Carbon credits
 - Presented by USDA-FSA



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Nebraska Land Values & Cash Rental Rates 2022-2023

Jim Jansen
Agricultural Economist
jjansen4@unl.edu
402-261-7572

Jeffrey Stokes
Professor in Finance
jeffrey.stokes@unl.edu
402-472-2127

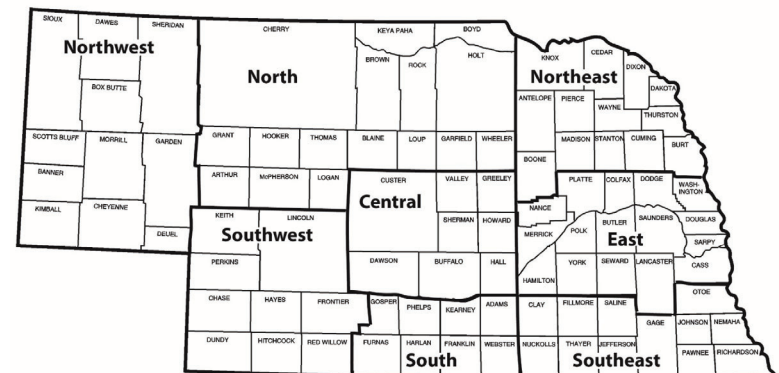
DISCLAIMER

- Land values and rental rates shown and discussed in this presentation are excerpts from the UNL Nebraska Farm Real Estate Market Survey.
- Information provided in this presentation are averages from these surveys. Actual land values and rental rates may vary depending upon the quality of the parcel and local market forces for an area.

Nebraska Farm Real Estate Survey

- Annual survey conducted since 1978 of Nebraska agricultural appraisers, professional farm managers, and bankers engaged in the land industry.
- Preliminary results for land values and rental rates published in mid-March.
- Full report published in June.
- Nebraska Farm Real Estate website full access to these resources: <http://cap.unl.edu/realestate>

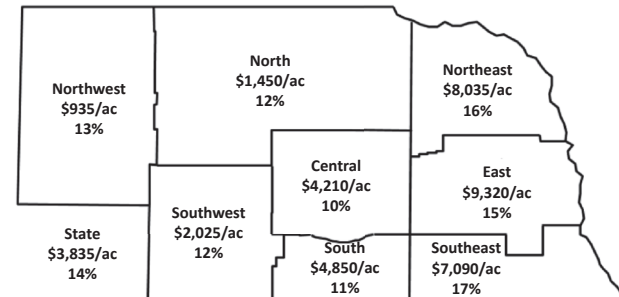
Nebraska Agricultural Statistics Districts



Nebraska Land Values

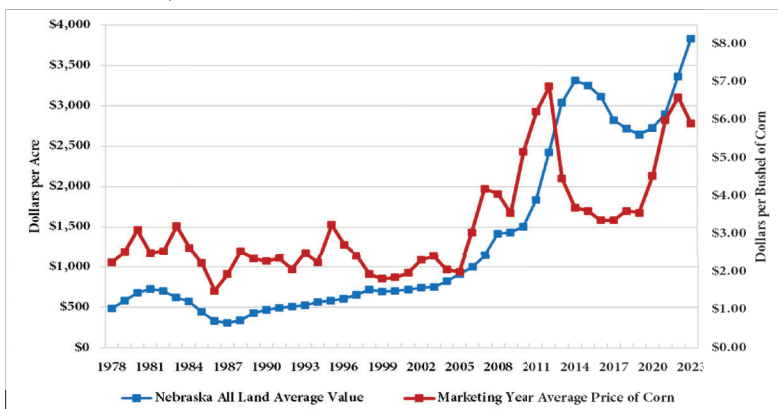
Land Averages and
Annual Percent Changes

Nebraska Agricultural Average All Land Value – Feb. 1, 2023 (Preliminary)

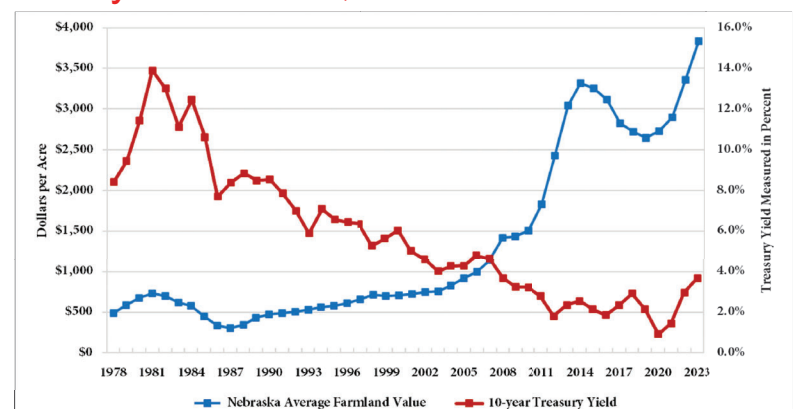


Source: UNL Nebraska Farm Real Estate Market Surveys, 2022 and 2023.

Nebraska Average Land Value and Corn Price, 1978-2023



Nebraska Avg. Land Value & 10-year Treasury Bond Rate, 1978-2023



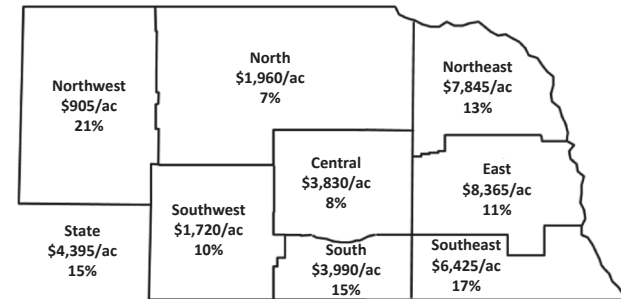
Refundable Nebraska Income Tax Credit for Property Taxes Paid to Schools

Source: Office of the NE Governor - <https://governor.nebraska.gov/>

- For tax year 2022, the property tax credit rebate on taxes paid to K-12 public schools will grow from 25% to 30%. Nebraska property taxpayers will also be eligible for a new 30% rebate on property taxes paid to community colleges.
- Tax Commissioner Tony Fulton reminded Nebraskans of the need to claim their refundable income tax credit on property taxes. These credits can be claimed retroactively going back three years.
- For information on how to claim the refundable income tax credit, go to revenue.nebraska.gov/about/nebraska-property-tax-credit.

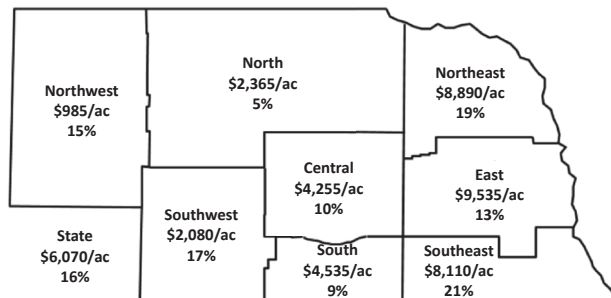
For information purposes only. Seek guidance from a tax professional or the Department of Revenue for specific questions on the tax credit.

Dryland Cropland (No Irrigation Potential) Average Value – Feb. 1, 2023 (Preliminary)



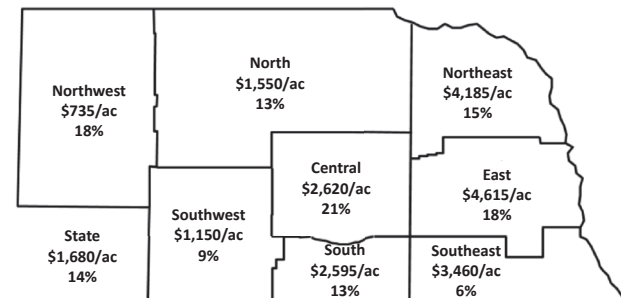
Source: UNL Nebraska Farm Real Estate Market Surveys, 2022 and 2023.

Dryland Cropland (Irrigation Potential) Average Value – Feb. 1, 2023 (Preliminary)



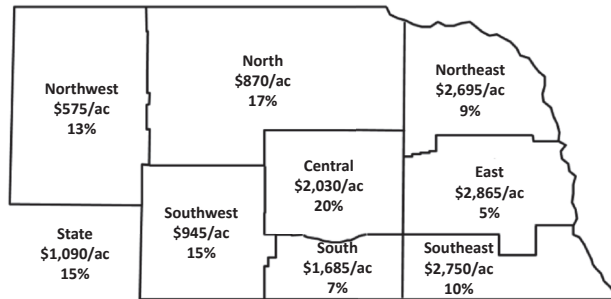
Source: UNL Nebraska Farm Real Estate Market Surveys, 2022 and 2023.

Grazing Land (Tillable) Average Value – Feb. 1, 2023 (Preliminary)



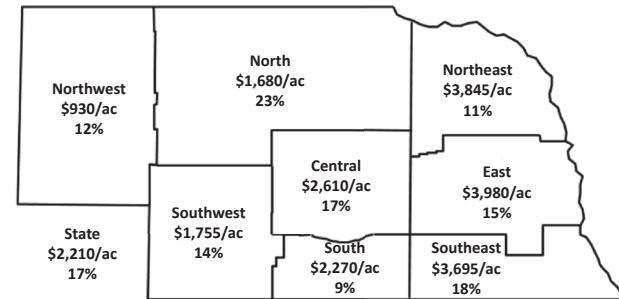
Source: UNL Nebraska Farm Real Estate Market Surveys, 2022 and 2023.

Grazing Land (Nontillable) Average Value – Feb. 1, 2023 (Preliminary)



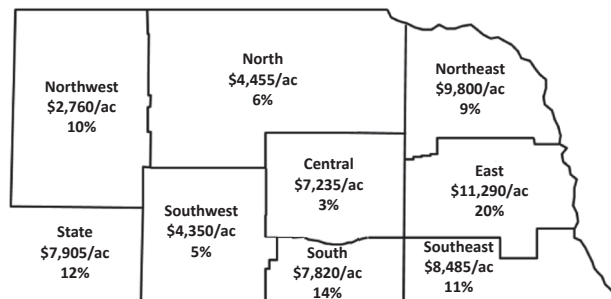
Source: UNL Nebraska Farm Real Estate Market Surveys, 2022 and 2023.

Hayland Average Value – Feb. 1, 2023 (Preliminary)



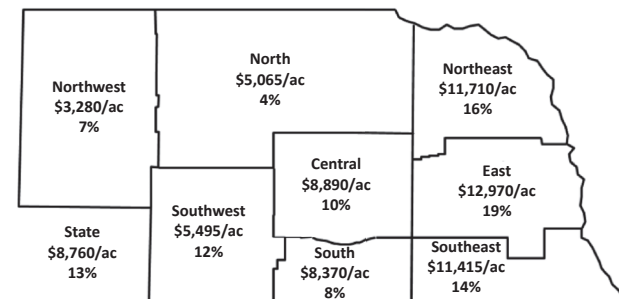
Source: UNL Nebraska Farm Real Estate Market Surveys, 2022 and 2023.

Gravity Irrigated Cropland Average Value – Feb. 1, 2023 (Preliminary)



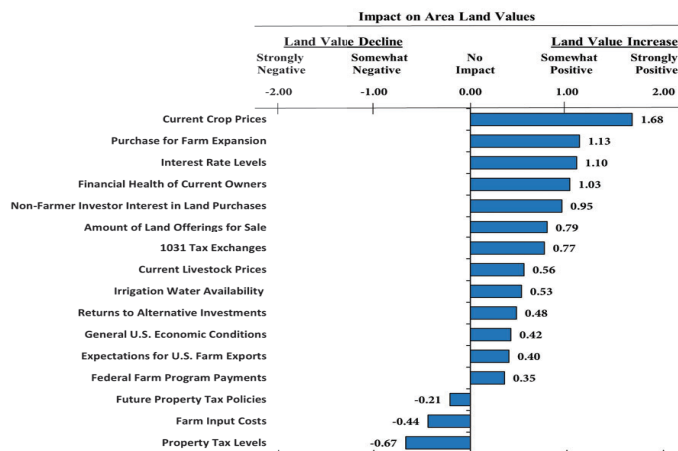
Source: UNL Nebraska Farm Real Estate Market Surveys, 2022 and 2023.

Center Pivot Irrigated Cropland Average Value – Feb. 1, 2023 (Preliminary)



Source: UNL Nebraska Farm Real Estate Market Surveys, 2022 and 2023.

Rating of Factors Influencing Agricultural Land Values in 2022

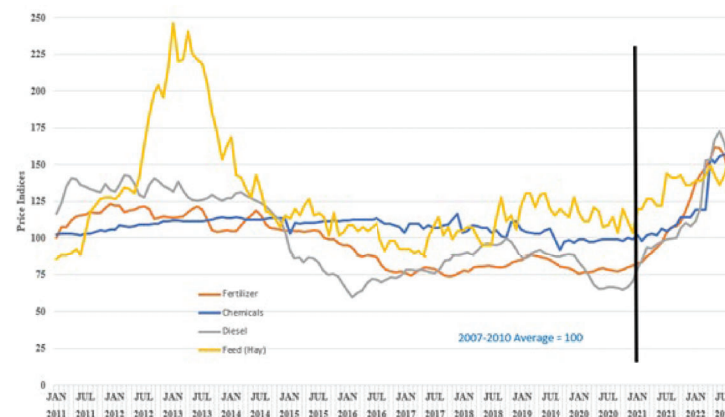


Source: Nebraska Farm Real Estate Market Development Survey, 2022.

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Top Producer Concern—High Input Costs

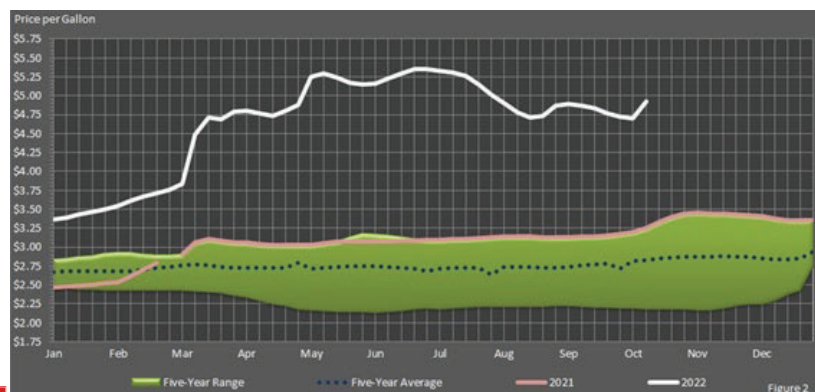
Source: NE Farm Bureau: <https://www.nefb.org/10/31/2022/top-producer-concern-high-input-costs/>



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High Input Costs—Part II: Diesel Prices

Article: NE Farm Bureau: <https://www.nefb.org/10/31/2022/high-input-costs-part-ii-diesel-prices/>

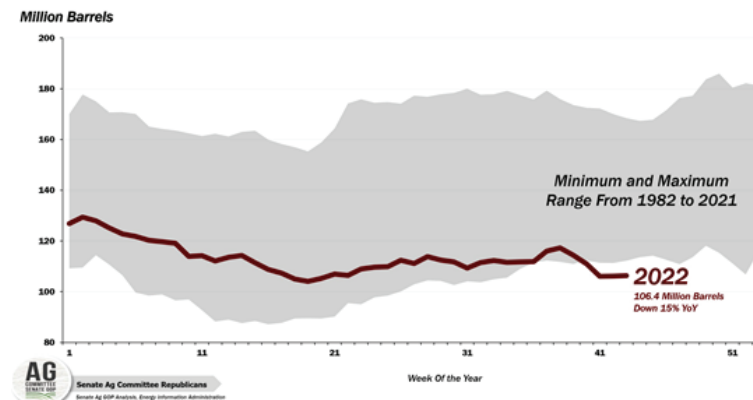


Source: Nebraska Department of Environment and Energy.

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High Input Costs—Part II: Diesel Prices

Article: NE Farm Bureau: <https://www.nefb.org/10/31/2022/high-input-costs-part-ii-diesel-prices/>



Source: Ag Committee Senate GOP.

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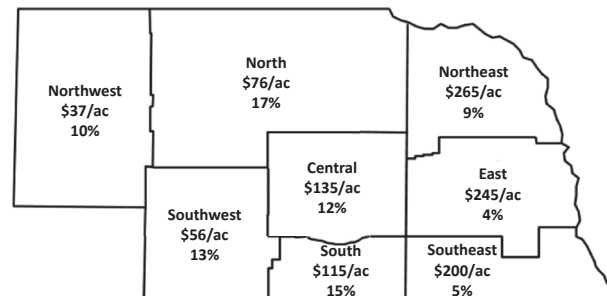
Nebraska Cash Rental Rates

Dryland Cropland
Rental Rates



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Dryland Cropland Average Rental Rates – 2023 Season

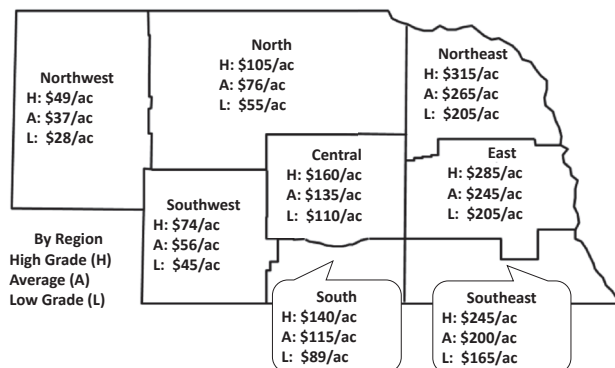


Source: Nebraska Farm Real Estate Market Development Survey, 2023.



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Dryland Cropland Rental Rate Ranges – 2023 Season



Source: Nebraska Farm Real Estate Market Development Survey, 2023.



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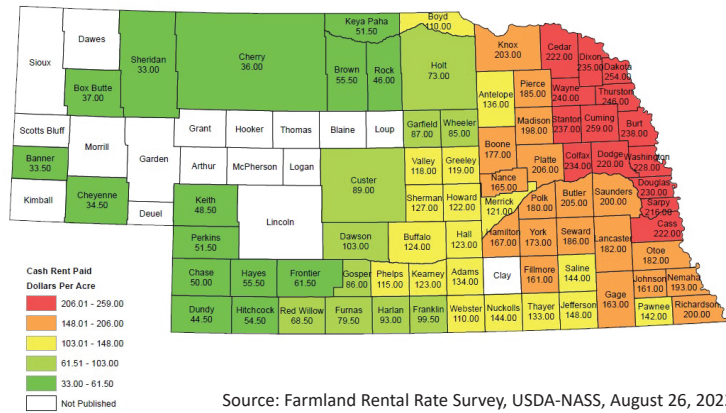
USDA-National Agricultural Statistics Service Cash Rent Survey

- Biennial survey conducted by the USDA-National Agricultural Statistics Service (NASS) of farmers and ranchers
- Survey starts in late-winter and conducted through mid-summer of odd-numbered years (some even-number years as well)
- Analysis published around the second week of September
- Nebraska county estimates in addition to other resources may be found at: www.nass.usda.gov/Statistics_by_State/Nebraska/Publications/County_Estimates/



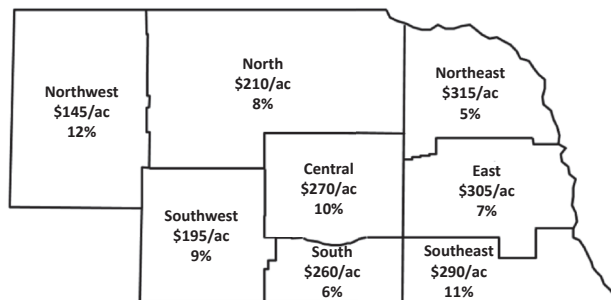
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Dryland Cropland Rental Rates – 2022 Season

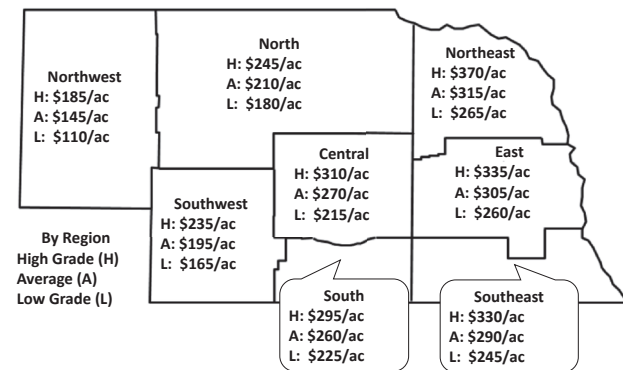


Nebraska Cash Rental Rates Irrigated Cropland Rental Rates

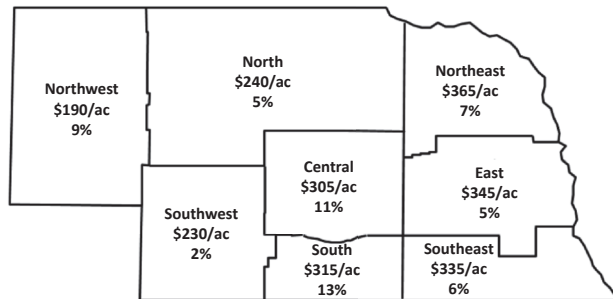
Gravity Irrigated Cropland Average Rental Rates – 2023 Season



Gravity Irrigated Cropland Rental Rate Ranges – 2023 Season

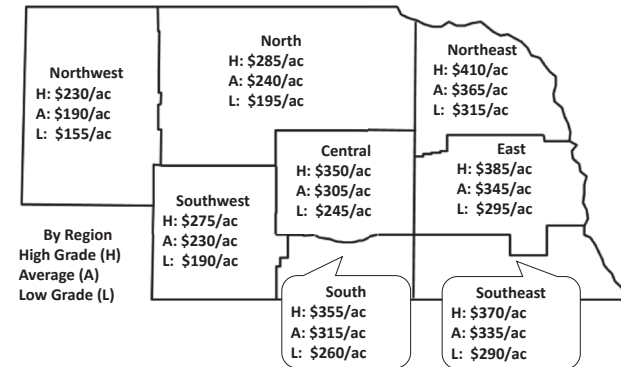


Center Pivot Irrigated Cropland Average Rental Rates – 2023 Season



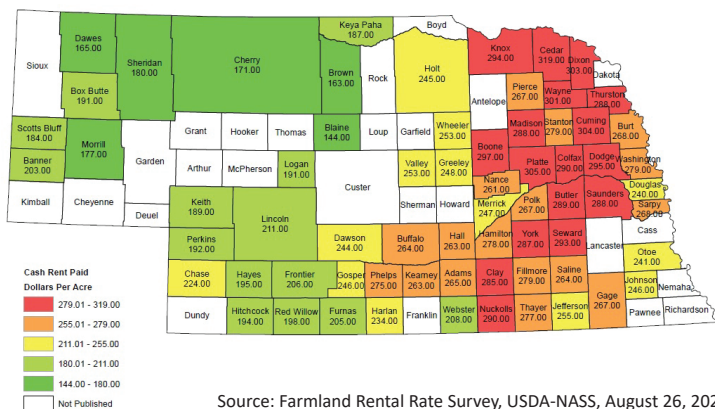
Source: Nebraska Farm Real Estate Market Development Survey, 2023.

Center Pivot Irrigated Cropland Rental Rate Ranges – 2023 Season



Source: Nebraska Farm Real Estate Market Development Survey, 2023.

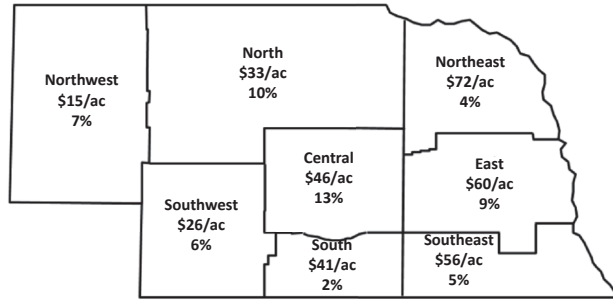
Irrigated Cropland Rental Rates – 2022 Season



Source: Farmland Rental Rate Survey, USDA-NASS, August 26, 2022

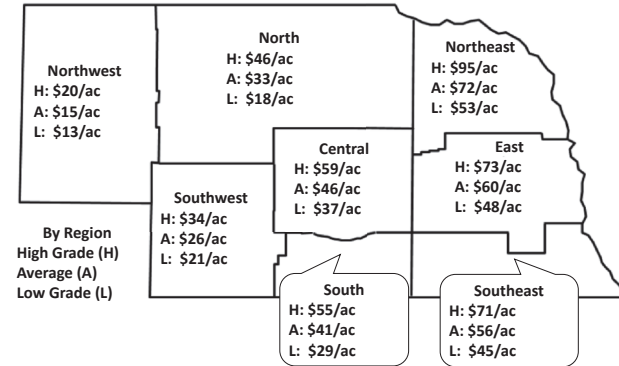
Nebraska Cash Rental Rates Pasture and Cow-Calf Pairs Rental Rates

Pasture per Acre Average Rental Rates – 2023 Season



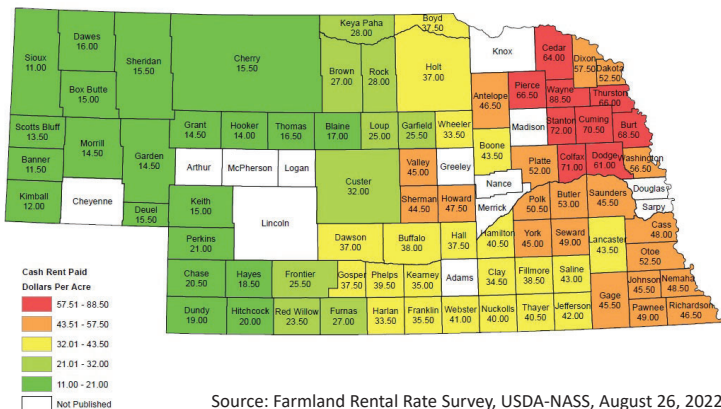
Source: Nebraska Farm Real Estate Market Development Survey, 2023.

Pasture per Acre Rental Rate Ranges – 2023 Season



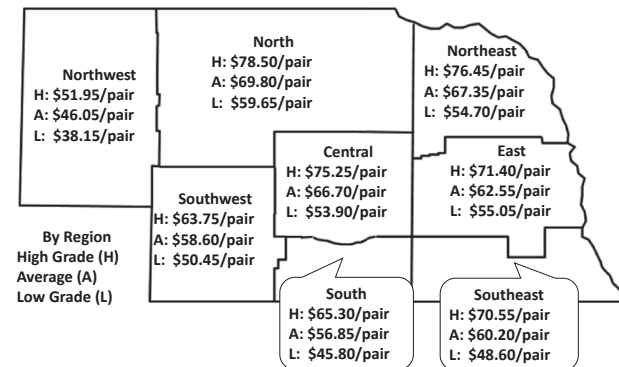
Source: Nebraska Farm Real Estate Market Development Survey, 2023.

Pasture per Acre Rental Rates – 2022 Season



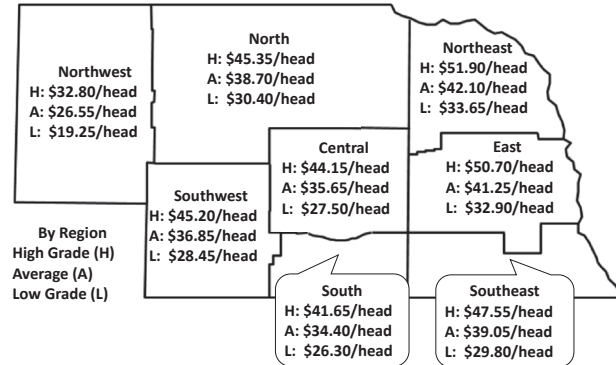
Source: Farmland Rental Rate Survey, USDA-NASS, August 26, 2022

Cow-Calf Pairs Rental Rate Ranges – 2023 Monthly



Source: Nebraska Farm Real Estate Market Development Survey, 2023.

Stocker (500-600 lb.) Rental Rate Ranges – 2022 Monthly



Source: Nebraska Farm Real Estate Market Development Survey, 2022.

Agricultural Land Leases

Trends in Lease Arrangements for 2023

Methods for Setting Cash Rental Rates

- Methods for estimating a cash rental rate in 2023:
 - Adjusting survey data
 - Cash equivalent from crop share
 - Return on investment

Estimating Cash Rental Rates by Adjusting Survey Data

- Land rental rate survey data:
 - Evaluate available cash rental survey data to establish a baseline in the landlord and tenant negotiation process.
- Average yields:

County	Value	Farm	Value
County Rental Rate	\$190/ac.	County Rent/Bushel	\$1.42/bu.
Corn Yield	134 bu./ac.	APH Yield	x 119 bu./ac.
County Rent/Bushel	\$1.42/bu.	Farm Level Rent	\$168.73/ac.

Cash Equivalent From Crop Share

- Rent paid to landlord by tenant based off owner's share of net returns per acre.
- Example 50/50 split:

Value	Corn - March 2023	Corn - July 2023	Corn - Nov. 2023
Yield (50% share)	70 bu./ac.	70 bu./ac.	70 bu./ac.
Price/bushel	<u>x \$5.91/bu.</u>	<u>x \$6.65/bu.</u>	<u>x \$6.15/bu.</u>
Income	\$413.70/ac.	\$465.50/ac.	\$430.50/ac.
Owner Expenses*	<u>-\$215.00/ac.</u>	<u>-\$215.00/ac.</u>	<u>-\$215.00/ac.</u>
Net Return to Owner (Effective Rent)	\$198.70/ac.	\$250.50/ac.	\$215.50/ac.

Cash Equivalent From Hay Share

- Rent paid to landlord by tenant based off owner's share of net returns per acre.
- Example 33/67 & 50/50 split:

Value	33:67 Hayland Share	50:50 Hayland Share
Yield (share)	0.83 ton/ac.	1.25 tons/ac.
Price/ton	<u>x \$120/ton</u>	<u>x \$120/ton</u>
Income	\$99/ac.	\$150/ac.
Owner Expenses*	<u>-\$0/ac.</u>	<u>-\$25.00/ac.</u>
Net Return to Owner (Effective Rent)	\$99.00/ac.	\$125.00/ac.

*In this example, the owner does not pay any expenses for the 33/67 hay share. Also, the owner pays \$25 per acre in fertilizer expense for the 50/50 hay share.

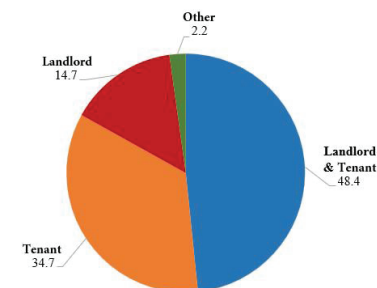
Return on Investment

- Multiply the estimated current market value by the expected rate of return to determine the rental rate per acre.

Farm	Dryland Cropland	Irrigated Cropland
Land Value	\$6,500/ac.	\$9,950/ac.
Rate of Return	<u>x 2.8-3.2%</u>	<u>x 3.1-3.5%</u>
Rental Rate per Acre	\$182-\$208/ac.	\$308-\$348/ac.

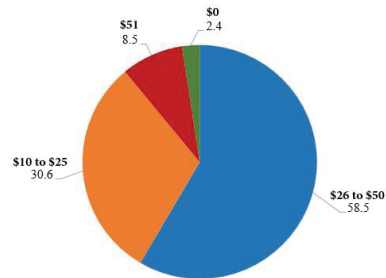
*Estimated net rates of return by land type are available in Table 5 of the Nebraska Farm Real Estate Market Highlights Report 2021-2022.

Entity Responsible for Maintaining Irrigation System as Part of Cash Lease in Nebraska



Source: Nebraska Farm Real Estate Market Development Survey, 2018.

Discount on Cash Rent per Acre When Tenant Owns Pivot for Irrigation System in Nebraska



Source: Nebraska Farm Real Estate Market Development Survey, 2018.

Discount on Cash Rent per Acre When Tenant Owns Power Unit for Irrigation System in Nebraska

Power Unit	Discount per Acre			
	\$0	\$1 to \$9	\$10 to \$20	\$20+
----- Percent of Respondents -----				
System Type				
Diesel Engine	23	34	35	8
Propane or Natural Gas Engine	23	43	31	3
Electric Motor	20	42	26	12

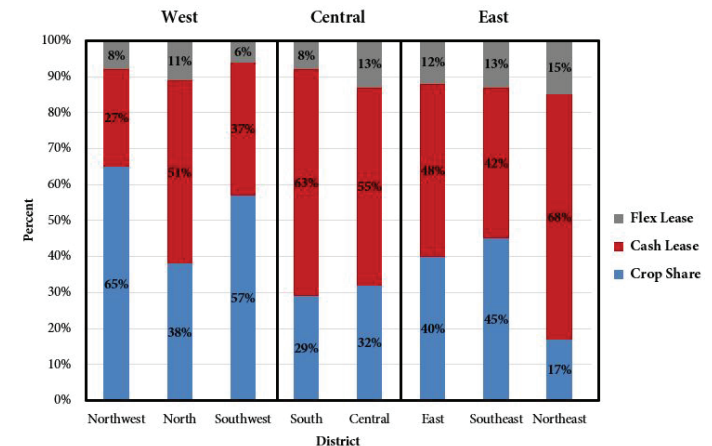
Source: Nebraska Farm Real Estate Market Development Survey, 2018.

Reported Cropland Lease Changes to Account for Higher Input Expenses in 2022

Adjustment to Transaction Method	Response Rate
	----- Percent -----
Switch to Crop Share	8
Switch to Flex Lease	23
Switch to Cash Rent	14
No Change	52
Other	3

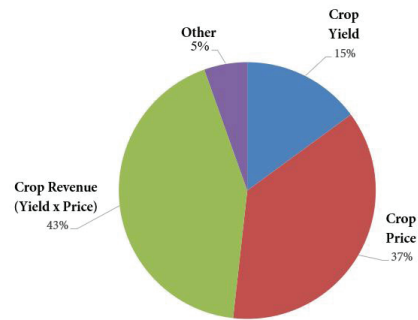
Source: Nebraska Farm Real Estate Market Development Survey, 2022.

Land Lease Rental Arrangements by Agricultural Statistics District in Nebraska for 2022



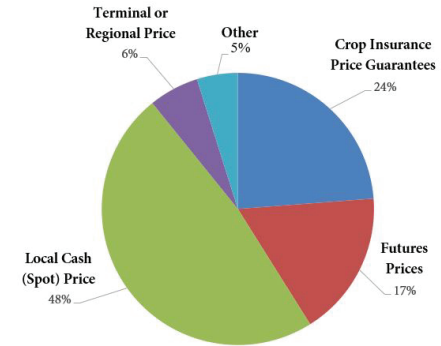
Source: Nebraska Farm Real Estate Market Development Survey, 2022.

Reported Factors for Flexing Cash Lease Payments



Source: Nebraska Farm Real Estate Market Development Survey, 2022.

Reported Crop Price for Flexing Cash Leases



Source: Nebraska Farm Real Estate Market Development Survey, 2022.

Fillable PDF Leases – AgLease101.org

The screenshot shows the AgLease101.org website. It features a navigation bar with 'Home', 'Document Library', and 'About Ag Lease 101'. A 'Click Document Library' button is visible. The main content area is divided into two columns: 'Lease Publications' and 'Lease Forms'. The 'Lease Publications' column lists several documents with PDF icons, including 'Fixed and Flexible Cash Rental Arrangements For Your Farm', 'Crop Share Rental Arrangements For Your Farm', 'Pasture Rental Arrangements For Your Farm', 'Rental Agreements For Farm Buildings and Livestock Facilities', 'Purchasing and Leasing Farm Equipment', 'Beef Cow Rental Arrangements For Your Farm', and 'Farm Building Rental Rate Survey'. The 'Lease Forms' column lists documents like 'Cash Farm Lease', 'Crop Share Farm Lease', 'Pasture Lease', 'Farm Building or Livestock Facility Lease', 'Farm Machinery Lease for Non-commercial Transactions', and 'Livestock Rental Lease'. A 'Fillable PDF Forms' callout points to the 'Lease Forms' column.

Nebraska Agriculture Land Studies Fund

- Interested in helping support the Nebraska Farm Real Estate Survey & Report?
- Please consider donating to help cover future expenses.

Donate Directly
<https://go.unl.edu/landfund>

Barbara Soderlin
University of NE Foundation
Ph: 402-670-0095
barbara.soderlin@nufoundation.org

Upcoming Webinar: Ag Land Mgt. Quarterly Mon. May 15, 2023 at 12:00 PM CDT

• Topics

- Trends in Nebraska cash rental rates
 - Trends in Nebraska cash rental rates for 2023
 - Financial implications for changing commodity prices and adjusting cash rents
- Proper communication and decision making for agricultural land
 - Improving communication between landlords, tenants, and family members
 - Short- and long-term decision making for agricultural land
- Ask an expert
 - Review of submitted questions
 - Upcoming land management workshops and publications



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Questions?

Jim Jansen

Agricultural Economist

jjansen4@unl.edu

402-261-7572



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Lease Communications, Provisions, Succession, and Negotiation

Allan Vyhnalek

Extension Educator, Farm Succession

303C Filley Hall, East Campus

avyhnalek2@unl.edu

402-472-1771



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Website: cap.unl.edu/succession

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TOPICS FOR THIS SECTION

- Lease Communications
- Land Succession Comments
- Negotiation
- Lease Provision Management



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COMMUNICATIONS – BETWEEN LANDLORD AND TENANT

- When leases go awry, lack of communications is to blame 90% of the time
- When working with family – is the goal to still have a family?
 - Don't make that assumption, get the commitment
 - Include all family members that need to be involved

COMMUNICATIONS

- Best way to communicate is to listen!
 - “Seek first to understand, then to be understood”
 - Ask clarifying questions
 - Sometimes people say one thing, mean something different
- Prove to the other party that you've heard what they are saying



COMMUNICATIONS MISTAKES

- Asking a question - not to find out what they will say, but to say what you wanted to say
- Making any assumption of what someone else will say
- Thinking about how we will respond while the other person is talking
- Don't judge what is being said, listen to understand
- Trying to fix an issue, without being asked (see next video)

Listen!



FOR THE TENANT (WHAT TO COMMUNICATE)

- Force yourself to share information with the landlord
- Yes – even for cash leases!
- Timely crop updates
 - include moisture conditions
 - weed/disease/insect pressures
- Consider sending as texts – or text with pictures



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FOR THE LANDLORD (WHAT TO COMMUNICATE)

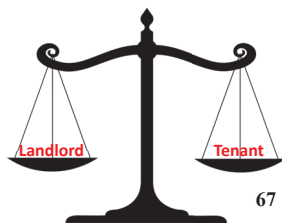
- Overall management of the farm (do you have vision or goals?)
- Specifically:
 - Weed control
 - Erosion control
 - Non-crop acre management expectations
- If using farmstead, what is the expectation for managing that asset?



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FOR BOTH (LANDLORD AND TENANT)

- Avoid feeling of having power over
 - Landlords saying that the tenant has all the control over the lease
 - Tenants saying that the landlords have all the control over the lease
- First communications about leasing farmland or pastures is not the price per acre or per pair
 - What management skills does the tenant have?
 - What are the expectations of the landlord?

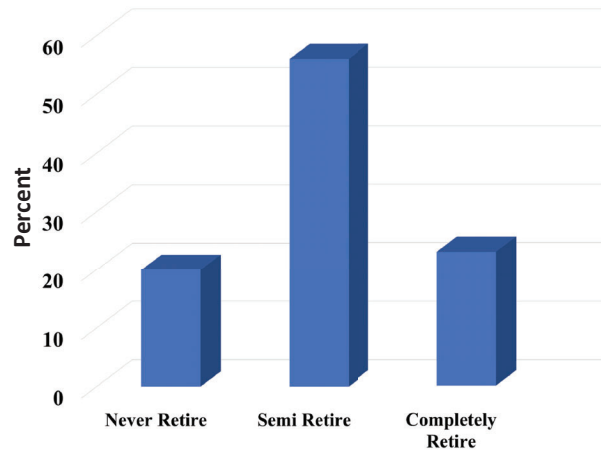


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FARM/RANCH – SUCCESSION & TRANSITION

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RETIREMENT PLANS FOR IOWA FARMERS (2019)



WHY ARE FARMERS RETIRING AT A LATER AGE – OR ONLY SEMI-RETIRING?

- Percent of those responding either important or very important
- 75% Have a difficult time giving up control of farm
- 69% Modern equipment – allows them to farm longer
- 66% Relate retirement to their own mortality
- 62% Cannot afford to retire
- 60% Healthier, longer life
- 55% Don't have a successor
- 54% Don't know what else they'd do

Source: Nebraska survey conducted fall of 2017.

NOT TRYING TO EMBARRASS ANYONE INTO RETIREMENT

- Farmers are NOT planning to retire
- However, the lesson must center on the idea - which is:
 - No one avoids the pine box
 - What happens to your stuff when you are gone?

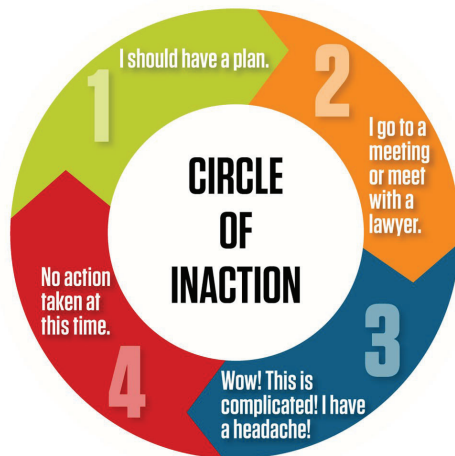
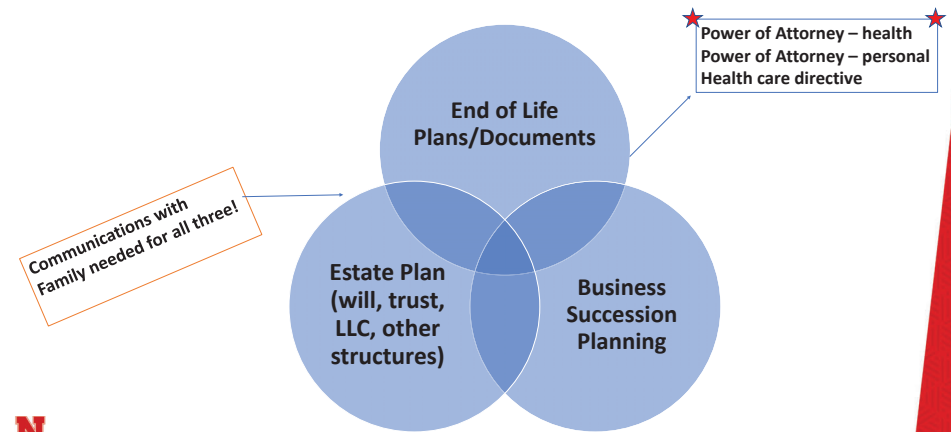
ESTATE PLANNING

“...many farm families experience significant difficulty in discussing the future of the family farm. More often than not, planning... tends to be deferred until some critical life event occurs which forces the family to address the matter.” Kaine, et al, *Succession and Inheritance on Australian Family Farms*, TRDC Pub. #198, The Rural Development Centre, U. of New England, Armidale, NSW

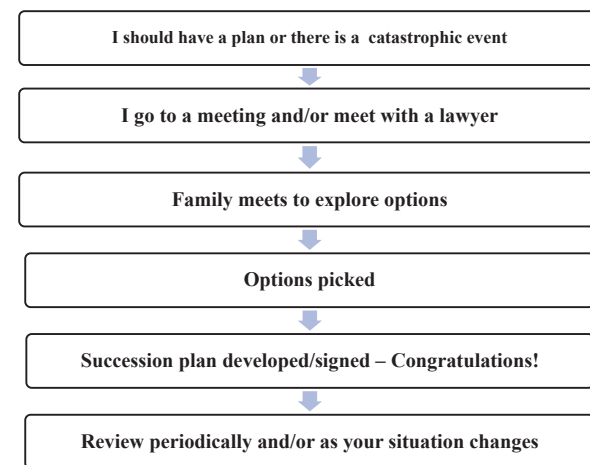
WHY DON'T WE PLAN?

- Too complicated (we assume)
- Do not like to plan
 - It is mental 'work'
- Facing our own mortality
 - Some just don't want to think about death
- **We are afraid that if we do something, it will be wrong (in the future)**

NEAR THE END OF ANY CAREER – THREE TYPES OF PLANNING



IDEAL PLANNING - SEQUENTIAL



THE PARENT'S GENERATIONS MAKE SEVERAL ASSUMPTIONS – ARE THEY RIGHT?!!!

- The kids all get along great now – I know that will continue.....
- I know that my children will want to keep this asset in the family – even when we are gone
- The kids will just have to figure out how to divide – I'll be gone I don't care what happens
- Since I have four children – my assets have to be divided 25% to each – equally – that will be the fair way to do it
- “Some day this will all be yours!”
- *In some cases – these assumptions are great – however.....*



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FINAL THOUGHTS

First Conversation regarding any estate plan

When you are done – will you still have a family?

- Do not make that assumption – get that commitment
- **Secondly** - Are Mom/Dad, or Grandpa/Grandma on same page?
- That should be worked out first.



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SUMMARY

- Be ready for that catastrophic event and hope it doesn't happen
- Avoid the circle of inaction – and put your plan together
- Have great communications with your family
 - Avoid those parent assumptions that aren't always correct
- For more information: cap.unl.edu/succession



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LAND LINK

- Started February 1, 2021
- Problem – two-fold
 - Land seekers don't have access to land so they can farm/ranch
 - Older generation does not have path to succession (their children are not returning to the farm/ranch)
- Land Link can match land seekers with landowners
- Applications made, reviewed, and possible matches are suggested
- Landowners decide who they would like to interview



CENTER FOR AGRICULTURAL PROFITABILITY

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LAND LINK – IF YOU ARE INTERESTED (INFORMATION OR APPLICATION)

- <https://cap.unl.edu/landlink>
- On-line information and applications at this site
- Questions – contact Allan Vyhnaek or Jessica Groskopf

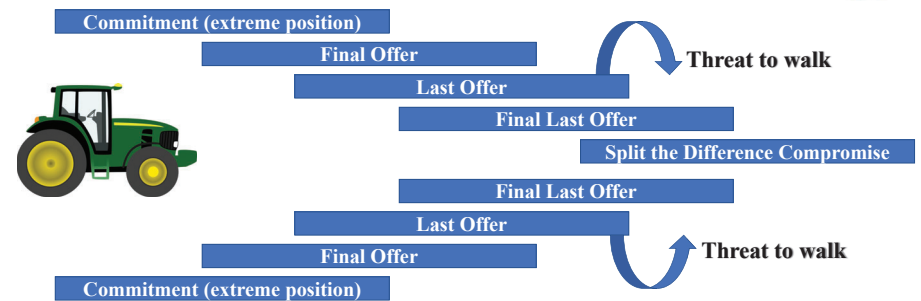
HOW OFTEN DO WE NEGOTIATE?



WHAT IS NEGOTIATION?

- A back-and-forth process designed to reach an agreement when you and the other party have both shared and opposed issues

NEGOTIATION – TIPS AND TACTICS

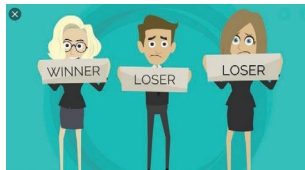


HOW WERE MOST OF US TAUGHT TO NEGOTIATE?

Allan's Dad taught Allan how to Negotiate!
We had to 'WIN'



How does winning work with family?
Will family members feel good if they feel like they 'lost'?



NEGOTIATION

- Not about winning! (especially with families)
- How do you create value for all parties? (win – win)
- Think out of the box! Get creative!

LEASE PROVISION MANAGEMENT



LEASE PROVISION - GENERAL

- Have all leases in writing
 - If verbal – end that – get it in writing!
 - In Nebraska, verbal leases for farmland end BY September 1
 - Not the same for pasture
- Start and ending date of lease (length of lease)
- Timing of lease termination – how much notice?
- Holdover clauses?
- When will lease be negotiated? (for the next term)

LEASE PROVISION - FERTILITY

- Phosphorus
 - Minimum to be left in soil at end of lease
 - Maximum that can be in soil (manure application)
 - Protect tenant with clause if large amount applied
- Mining of soil
 - Consider soil test at end of lease
 - Minimum nutrients left must be followed
- Lime
 - Typically, a Landlord Expense
 - If tenant is applying – then protect with clause in lease



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LEASE PROVISION – SOIL HEALTH / ENVIRONMENTAL

- Fixing excessive erosion
 - Typically a landlord's expense
- Non-crop acres
 - Who controls cedar trees and noxious weeds?
- Tillage vs. No-till considerations
- Organic vs. Non-organic production
- GMO vs. Non-GMO production
- Crop residue removal
 - Grazing stalks vs. baling stalks



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LEASE PROVISION – OTHER ITEMS

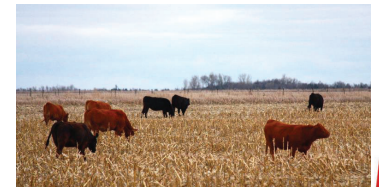
- If there is a pasture, who is taking care of the fencing?
- Hunting rights
 - Crop ground vs. pasture
 - Nebraska Recreational Use Law



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LEASE PROVISIONS – OTHER ITEMS

- **Corn stalks use:**
 - Grazing vs. harvesting as bedding
 - Removing all material (no)
- **Manure application**
 - How often
 - Limits on P application



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LEASE PROVISIONS – OTHER ITEMS



- **Irrigation Equipment**
 - General assumption is that all ownership costs belong to landlord
 - Common for tenant to provide some of the upkeep cost (repairs)
 - Especially labor
 - Deductible on parts
- If entire systems are being purchased by tenant – then rent adjustment is recommended

Full Land Succession workshops

- March 7, 1:00 p.m. – Lancaster Co., Lincoln
- March 14, 9:00 a.m. – Cass County, Weeping Water
- Recording of March 7, on website:
 - <https://cap.unl.edu/succession>

SUMMARY

- **Reminders and information for:**
 - Good communications
 - Good lease provisions
 - Goals of asset
 - Negotiation tips
 - Written leases
- **Thanks for attending!!**

Questions?

Allan Vyhnalek
Extension Educator, Farm Succession
303C Filley Hall, East Campus
avyhnalek2@unl.edu
402-472-1771

Website: cap.unl.edu/succession

Carbon Credits & Land Management: Considerations for 2023

Aaron Nygren
Cropping Systems Educator
anygren2@unl.edu
402-624-8030

Brad Schick
Forage & Beef Educator
brad.schick@unl.edu
308-536-2691



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Carbon Credit Overview

- What are carbon credits?
- What agricultural activities can generate carbon credits?
- What are the different types of carbon markets?
- What exchanges exist for carbon markets?
- What are carbon credits worth?
- What issues exist for carbon credits on rented land?
- What does the future of carbon credits look like?



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Carbon Credits Basics

- **What are carbon credits?** Carbon credits are sometimes purchased by businesses that are being required to reduce their greenhouse gas (GHG) emissions.
- A carbon credit typically represents one metric ton of carbon dioxide (CO₂) and can be created by activities reducing GHG emissions.
- **What are agricultural carbon credits?** Foresters, ranchers and farmers can increase the storage of carbon from the air into the soil through improved forest, grassland and cropland practices.

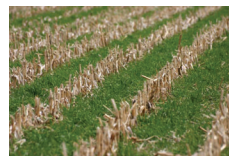


Source: Dave Aiken, Cornhusker Economics: Ag Carbon Credits (2021)

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Ag Carbon Credits

- The greatest potential for soil carbon storage comes from forest management activities, avoided grassland conversion to cropland and planting cover crops.
- Other agricultural activities potentially generating carbon credits include reduced tillage, reduced fertilizer applications, and capturing methane from livestock operations and converting it to electricity.



Source: Dave Aiken, Cornhusker Economics: Ag Carbon Credits (2021)

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How Does Carbon Sequestration Take Place?

- Trapping carbon within plant material. The more vegetation that is present or the wider the window when plants are growing, the more CO₂ is potentially taken out of the air.
- Minimizing the mineralization of organic carbon already present in the soil or existing plant residue.
- Reducing soil erosion and keeping carbon trapped in the soil.

Methods of Sequestering Carbon on Cropland Acres

- Using Reduced Tillage, Strip-Till, or No-Till
- Planting Cover Crops
- Improved Fertilizer Management
- Implementing Higher Carbon Crop Rotations
- Installing Vegetated Buffers
- Converting Marginal Acres to Perennial Crops

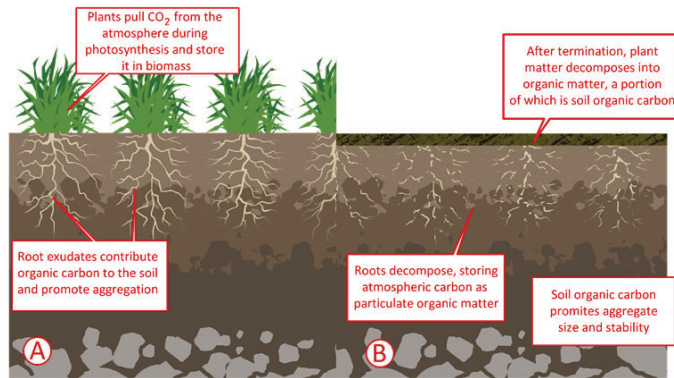
Reduced Tillage, Strip-Till, or No-Till



Reduced Tillage, Strip-Till, or No-Till

- Potential carbon sequestration
 - Data has been mixed, ranging from 0 to over a metric ton per acre
 - More common numbers range from .25 to .5 tons metric tons per acre
- Things to think about...
 - What if you are already using no-till?
 - How does changing tillage practices work in your farming operation?

Cover Crops & Carbon Sequestration



Source: UNL Crop Watch

Nebraska Cover Crop Production Practices

- When do they have the best chance to sequester carbon?
 - After wheat or oat harvest
 - After silage harvest
 - In systems that allow more growth in spring
- What cover crops have worked best?
 - In corn & soybean rotations
 - Rye
 - Wheat
 - Brassicas
 - In wheat rotations
 - Warm season grasses
 - Brassicas
 - Legumes

Fertilizer Management

- Why does fertilizer management affect carbon sequestration?
 - Affects plant growth
 - Nitrous oxide emissions
 - Carbon inputs to produce fertilizer
- What practices apply?
 - Inhibitors
 - Reduce chance for losses into the air or via leaching
 - Reduced rates
 - Timing
 - Variable rate applications
 - Going from synthetic fertilizer to organic sources

Diversified Crop Rotations

Table 2. Crop rotation (averaged over N rates) and fertilizer-N effects (averaged over crop rotations) on soil organic carbon and total soil N (ton/acre) for Mead plots since 1972

		Soil Organic Carbon (ton C/acre)			Soil Total Nitrogen (ton N/acre)		
		Soil Depth (inches)			Soil Depth (inches)		
Management	Treatment Description	0-3"	0-12"	0-60"	0-3"	0-12"	0-60"
Crop rotation	Continuous corn	7.4	24.0	48.1	0.69	2.28	5.40
	Continuous soybean	7.7	25.2	57.9	0.70	2.36	6.11
	Continuous grain sorghum	8.3	25.7	51.9	0.78	2.45	5.58
	Corn – soybean	8.0	25.6	62.5	0.74	2.41	6.47
	Grain sorghum – soybean	8.1	24.1	47.8	0.76	2.36	5.44
Corn – soybean – grain sorghum – oat/clover		9.0	27.9	65.1	0.84	2.63	6.83
Corn – oat/clover – grain sorghum – soybean		8.8	26.5	60.5	0.83	2.54	6.47

Source: UNL Crop Watch

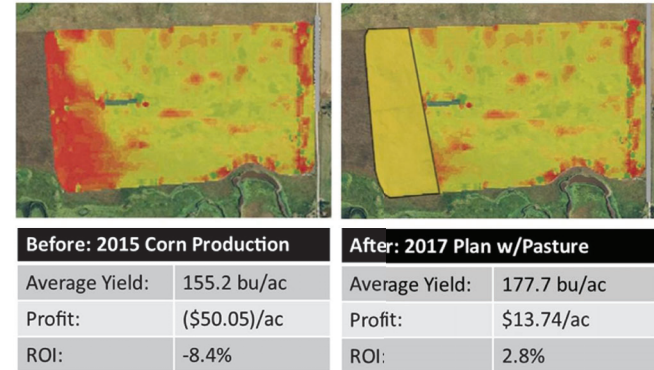
Vegetated Buffers



Source: UNL Crop Watch

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Conversion of Marginal Acres



Source: Melissa Shockman

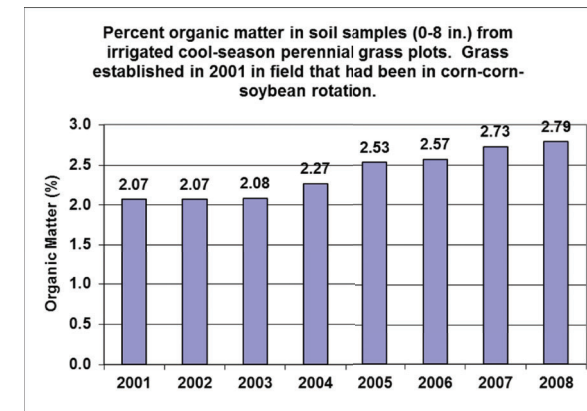
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Benefits of Sequestering Carbon

- Even if payments are low, farming practices that result in sequestered carbon have the benefits of:
 - Improved soil structure
 - Improved water holding capacity
 - Reduced soil erosion from water and wind
 - Improved soil health
 - Reduced nutrient loads in environment

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Organic Matter on Converted Crop Ground



Source: Jerry Volesky

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Summer-Planted Warm-Season Annuals Yields

Range of <u>dry matter yield</u> for summer annual forages under irrigated conditions.	
Forage	Tons/acre
Sudangrass	4.1 to 4.8
Sorghum-sudangrass hybrid	4.2 to 5.3
Forage sorghum	4.4 to 5.3
Pearl millet	3.8 to 4.5
Foxtail millet	2.8 to 3.8
Teff	2.6 to 3.8
* Yield ranges include the primary and regrowth harvest for all forages except forage sorghum and foxtail millet.	

Source: Jerry Volesky

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Spring-Planted Cool-Season Annuals Yields

Table 1. Forage height and yield of spring cereal grain forages, North Platte, NE 2016.			
Entry	Harvest date ¹	Height (inches)	Forage yield ² (tons/acre)
VNS spring triticale	17-June	52.0 ^a	2.98
'Goliath' oats	17-June	49.0 ^a	2.96
'Stallion' oats	17-June	44.5 ^b	2.89
'Shelby 427' oats	17-June	42.7 ^{bc}	2.68
'Jerry' oats	17-June	42.7 ^{bc}	2.69
'Haybet' barley	17-June	40.5 ^c	3.09
'Everleaf 126' oats	29-June	35.7 ^d	3.06
LSD 0.05	-	3.4	0.49

¹ All entries harvested at a similar stage of maturity (late-milk to soft dough).

² Dry matter basis.

^{abc} Means followed by unlike letters significantly differ (P < 0.05).

Seeding date: March 30, 2016 and 80 lbs N on March 31, 2016.

Source: Jerry Volesky

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Types of Carbon Markets

- What are the different types of carbon markets?
- **Voluntary carbon markets** allow businesses and individuals who wish to offset some or all of their GHG emissions to accomplish business or personal sustainability goals but who are not legally required to do so.
 - No overall regulation of the voluntary carbon markets to assure that all carbon credits represent a metric ton of carbon reduction.
- **Compliance carbon markets** serve entities who are legally required to reduce their GHG emissions. Examples include programs in California and European Union.

Source: Dave Aiken, Cornhusker Economics: Ag Carbon Credits (2021)

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Carbon Markets in 2023



Source: AgWeb - <https://www.agweb.com/search-carbon-markets>

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Value of Carbon Credits

- **How much are carbon credits worth?**
- Some producers have reported receiving offers of \$10-15 an acre or more to sign a carbon credit contract. This probably represents a signing bonus rather than an indication of long-term price for a carbon credit.
- One metric ton of carbon sequestered in soil equals one carbon credit, which is the standard carbon credit trading unit.
- A price of \$5 per ton would be a representative current price for cropland carbon credits.



Source: Dave Aiken, Ag Carbon Credit Contract Checklist (2021)

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Value of Carbon Credits

- **How much are carbon credits worth?**
- Other examples on the value of a carbon credit:
 - **Bayer:** \$10/acre; must have active FieldView Plus data account & agree to share some data
 - **CIBO Impact:** \$20/acre; will have retained ownership option where CIBO gets 20% sales commission
 - **EMSC:** annual payments based on amount of soil carbon sequestered, tied to carbon mkt price, 10-year contracts
 - **Indigo Ag:** \$15/ton, for long-term regenerative producers

Source: Dave Aiken, Presentation: Carbon Farming – Who? What? Where? When? & How Much? (April 15, 2021)



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Carbon Credit Issues

- **Are there issues with generating carbon credits on leased land?**
- One issue with agricultural carbon credits on cropland is that after the carbon contract expires the land can be plowed up and the stored carbon released.
- Issue may not be nearly as great for forests or grasslands.
- ***Due to this concern - this has led to long-term ag carbon contracts, 10-20 years or longer.***
- Shorter contracts may be available depending upon the market.



Source: Dave Aiken, Cornhusker Economics: Ag Carbon Credits (2021)

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Carbon Credit Issues

- **Are there issues with generating carbon credits on leased land?**
- Most Nebraska farm leases are handshake agreements for one year without a written lease.
- Most written leases are for one year also with specified renewal provisions.



Source: Dave Aiken, Cornhusker Economics: Ag Carbon Credits (2021)

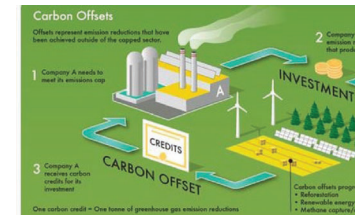
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Carbon Credit Issues

- Are there issues with generating carbon credits on leased land?
- If ag carbon markets become a significant source of farm income, will more farm leases be written for a longer term to qualify for carbon market participation?
- Will provision change in leases to require prospective tenants to comply with certain production requirements?
- This would be a dramatic change from traditional norms, but this might happen if the carbon market financial incentives justify making the change.

Carbon Credit Issues

- Are there issues with generating carbon credits on leased land?
- Who receives the payment from carbon credits?
- What production practices had to change to receive a carbon credit? Who made the changes?
- Would the changes be economically feasible without the payment?



Future of Ag Carbon Credits

- What does the ag carbon credit market look like today?
- The wild, wild west...
- No rules or regulations exist, so let the buyers and sellers all beware...



Future of Ag Carbon Credits

- What does the ag carbon credit market look like today?
- The **Growing Climate Solutions Act of 2021**, which cleared the Senate on June 24, 2021 by a vote of 92-8, supports the development of a voluntary market for carbon sequestration on agricultural land.

Growing Climate Solutions Act

- ✓ Creates an Online "One Stop Shop"
- ✓ Establishes a USDA Certification
- ✓ Organizes an Advisory Council
- ✓ Assesses Progress in Carbon Markets

Source: Alejandro Plastina, Ag Decision Maker: How to Grow and Sell Carbon Credits in US Agriculture (2021)

References

- Alejandro Plastina, Ag Decision Maker: How to Grow and Sell Carbon Credits in US Agriculture (2021)
- Dave Aiken, Ag Carbon Credit Contract Checklist (2021)
- Dave Aiken, Cornhusker Economics: Ag Carbon Credits (2021)
- Dave Aiken, Presentation: Carbon Farming – Who? What? Where? When? & How Much? (April 15, 2021)



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Questions?

Aaron Nygren

Cropping Systems Educator
anygren2@unl.edu
402-624-8030

Brad Schick

Forage & Beef Educator
brad.schick@unl.edu
308-536-2691



Cornhusker Economics

Flexible Cropland Lease Arrangements Across Nebraska in 2022

The University of Nebraska-Lincoln's Nebraska Farm Real Estate Market Survey and Report 2021-2022 provides insight into recent trends on the market value of agricultural land and cash rental rates across the state. Each year, the special feature section covers topics on new or emerging issues related to the agricultural land industry in Nebraska. These topics reflect interest expressed by panel members and readership of the Nebraska Farm Real Estate Market Highlights Reports. The special feature section in 2022 evaluates changes made to cropland leases to account for higher input expenses, utilization of flexible lease arrangements across the state, and considerations for these contractual arrangements.

Agricultural operators in 2022 faced rising input expenses for seed, fertilizer, and chemicals necessary for the production of crops. Elevated commodity prices with heightened input expense provided the motivation for operators to reconsider the selected lease arrangement utilized on rented cropland. Higher input expenses, coupled with dry growing conditions, also raised the financial risk imposed on agricultural operators. Depending upon the selected lease type, risk may be mitigated between the landlord and tenant or remain solely with the tenant.

The three most commonly utilized cropland lease arrangements across Nebraska, as previously defined in 2015 (Jansen & Wilson), include: *crop share* – landowner receives a percentage of the actual crop yield as payment for leasing the agricultural land to the tenant; *cash lease* – landowner receives an agreed-upon cash payment for leasing the agricultural land to the tenant; and *cash lease with flexible provision (flex lease)* – landowner and tenant set a base cash rental rate, which can flex based upon actual crop yields, prices, or a combination of the two. Final cash payment made to the landlord for leasing the land to the tenant may have premiums or discounts made to the base rental rate depending upon the agreement between the two parties.

Depending upon the selected lease arrangement, the division of income, expenses, and risk will vary between the landlord and tenant in 2022. These parties may also have different risk preferences, financial capacities or direct knowledge of production systems. To account for these factors or constraints, panel members reported on changes made to cropland lease selection across Nebraska for 2022 (Table 1).

Table 1. Reported Cropland Lease Changes to Account for Higher Input Expenses in 2022

Adjustment to Method	Response Rate
	----- Percent -----
Switch to Crop Share	8
Switch to Flex Lease	23
Switch to Cash Rent	14
No Charge	52
Other	3

Source: UNL Nebraska Farm Real Estate Market Survey, 2022.

It is the policy of the University of Nebraska–Lincoln not to discriminate based upon age, race, ethnicity, color, national origin, gender-identity, sex, pregnancy, disability, sexual orientation, genetic information, veteran's status, marital status, religion or political affiliation.

As shown in Table 1, there was approximately an equal split between changing (48%) and not changing (52%) the leasing arrangement. Respondents indicated that when changing the lease arrangement, switching to a flex lease accounted for 23% of the changes while the remaining 25% of leases were either switched to a crop share, cash rent, or some other change. Switching to cash rent (14%) and crop share (8%) were the second and third most common adjustments.

The decision to switch to either cash rent, flex lease, or crop share impacts the mitigation of price and yield risk between the landlord and tenant. The risk associated with price or yield may vary based upon the district of the state. Table 2 summarizes the estimated distribution between crop share, cash lease, and flex leases indicated by respondents across Nebraska in 2022.

Table 2. Land Lease Rental Arrangements by Agricultural Statistics District in Nebraska for 2022

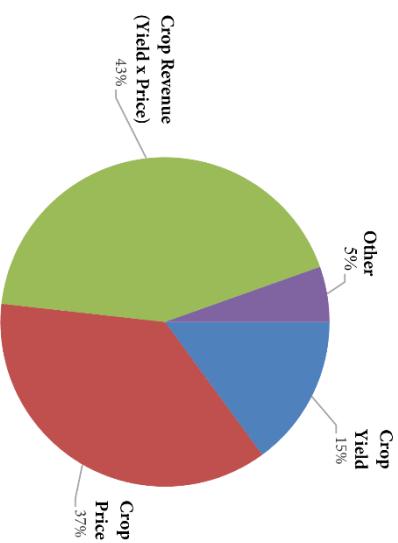
Agricultural Statistics District	Average Percent Distribution		
	Crop Share	Cash Lease	Cash Lease with Flexible Provisions
	-----Percent-----		
Northwest	65	27	8
North	38	51	11
Northeast	17	68	15
Central	32	55	13
East	40	48	12
Southwest	57	37	6
South	29	63	8
Southeast	45	42	13
State	37	51	12

Source: UNL Nebraska Farm Real Estate Market Survey, 2022.

Cash leases and crop share comprise 88% of rental arrangements at 51% and 37% each across the state (Table 2) while flex leases account for about 12% of the leases. Districts in western Nebraska have a higher portion of crop share — such as the Northwest and Southwest at 65% and 57% — than other regions, which have a higher proportion of cash leases. The Northeast and Central Districts reported the highest use of flex leases at 15% and 13%.

Flex lease arrangements mitigate risk between the landlord and tenant. The flex factor used in the design of lease arrangements of this type tend to focus on the element of risk posing concern in the rental contract. Figure 1 summarizes the different types of factors for basing a flexible cropland lease arrangement.

Figure 1. Reported Factors for Flexing Cash Lease Payments

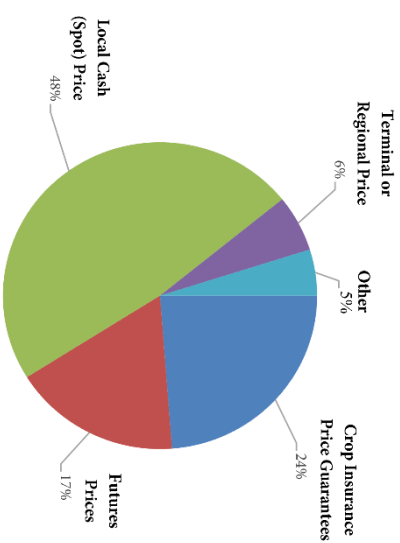


Source: UNL Nebraska Farm Real Estate Market Survey, 2022.

As seen in Figure 1, panel members reported crop revenue (43%) as the most common factor for flexing a lease followed by crop price (37%). Combined, these two account for 80% of the factors for setting a flex lease. Crop price remains a major concern between landlords and tenants. Crop yield and other factors accounted for the remaining 20% for basing a flex lease off of across the state in 2022. These factors may vary depending on the regional concerns surrounding the lease. For example, dryland operators may be more concerned with crop yield whereas irrigation producers might focus more on price fluctuations.

The price factor for flexing a cropland lease may be based on a local cash, regional, futures, or an established guarantee determined by another entity. Figure 2 summarizes the major prices respondents reported when used as part of a flex lease arrangement.

Figure 2. Reported Crop Price for Flexing Cash Leases



Source: UNL Nebraska Farm Real Estate Market Survey, 2022.

As seen in Figure 2, respondents indicated that the local cash (spot) price (48%) as the most common price factor for flex leases. Crop insurance price guarantees (24%) were reported as the second-most commonly used value. This form of price guarantee is based on the value of the 30-day futures price average during planting and harvesting. Futures and terminal or regional, along with other prices, accounted for 17%, 6%, and 5% of the values for basing a flex lease off of when using the price factor.

The majority of cropland rental arrangements in Nebraska did not change to another lease type to account for higher input expense in 2022. Cash leases remain the dominant rental type as respondents indicated 51% of leases in Nebraska were this type, followed by 37% being crop share. Flex leases account for approximately 12% of the remaining cropland leases across the state. Crop revenue and price serve as the most popular factors for basing flex leases off when mitigating risk between landlords and tenants. Operators utilizing price flexing cash rents most commonly utilize local cash (spot) prices.

Survey results shown and discussed in this report are findings from the University of Nebraska–Lincoln’s 2022 Nebraska Farm Real Estate Market Survey. Complete results from the survey may be found at the Nebraska Farm Real Estate website: <http://cap.unl.edu/realstate>.

Please address questions regarding the 2022 Nebraska Farm Real Estate Report to Jim Jansen at (402) 261-7572 or jjansen4@unl.edu.

References

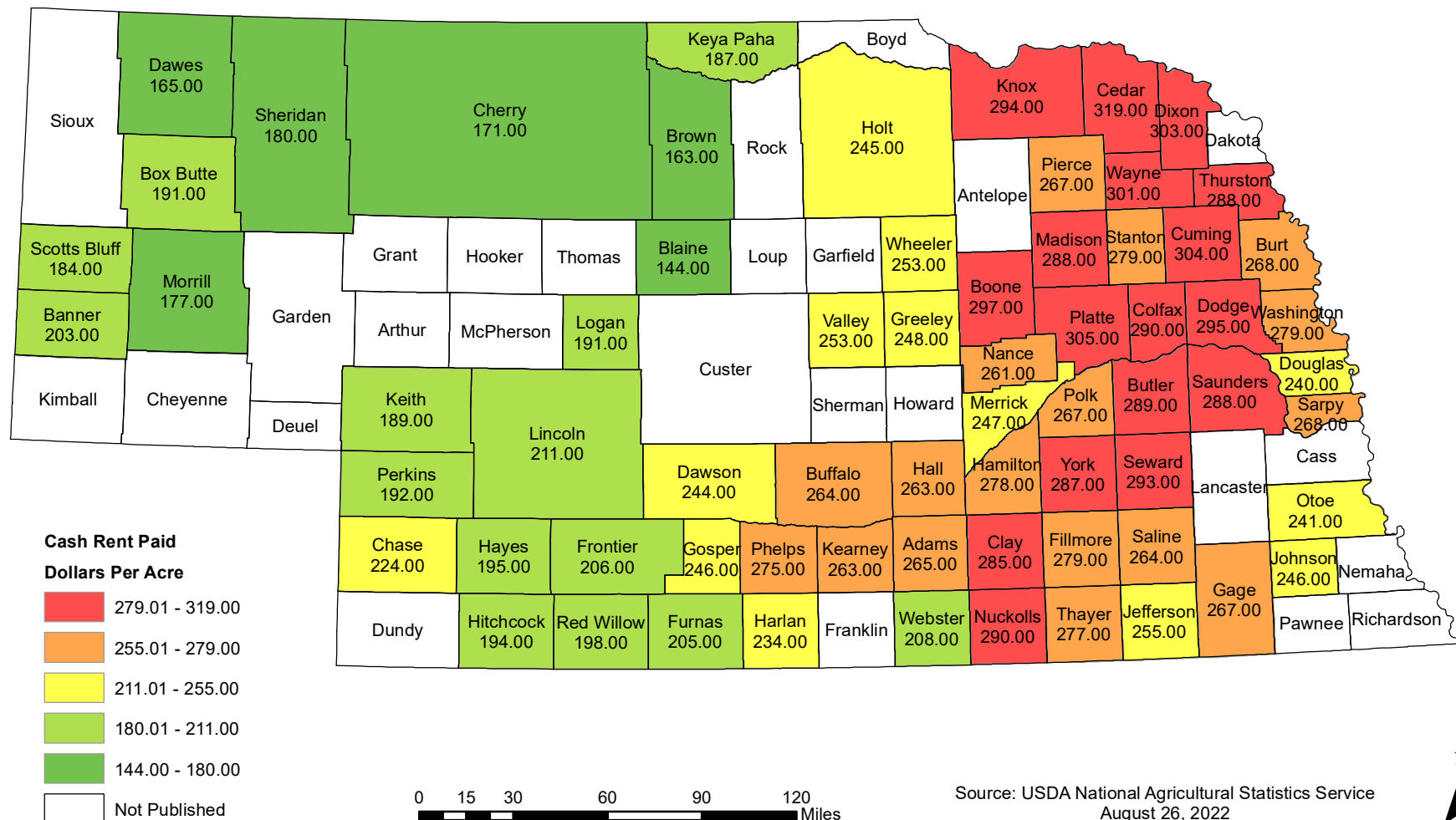
Jansen, J. & Wilson, R. (2015, June). Nebraska Farm Real Estate Market Highlights 2014-2015, retrieved June 21, 2022 from the UNL Digital Commons: https://digitalcommons.unl.edu/agecon_farmrealestate/.

Jim Jansen
Agricultural Economist
University of Nebraska-Lincoln
402-261-7572
jjansen4@unl.edu

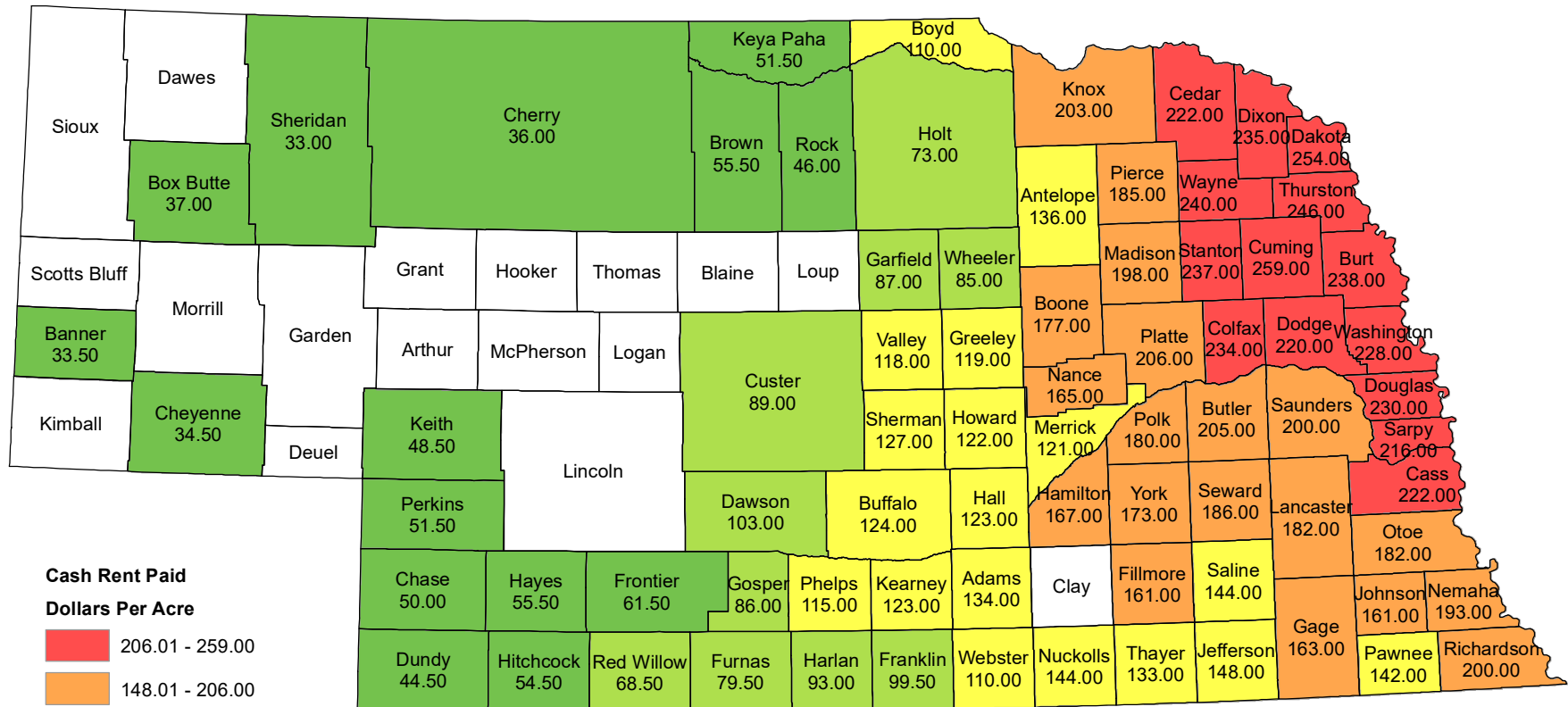
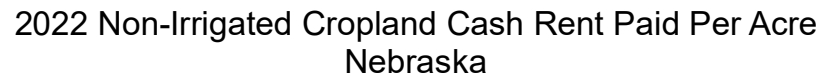
Jeffrey Stokes,
Professor, Department of Agricultural Economics
University of Nebraska-Lincoln
402-472-2127
jeffrey.stokes@unl.edu









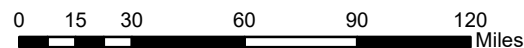
2022 Irrigated Cropland Cash Rent Paid Per Acre Nebraska



Website: https://www.nass.usda.gov/Statistics_by_State/Nebraska/Publications/County_Estimates/



	206.01 - 259.00
	148.01 - 206.00
	103.01 - 148.00
	61.51 - 103.00
	33.00 - 61.50
	Not Published



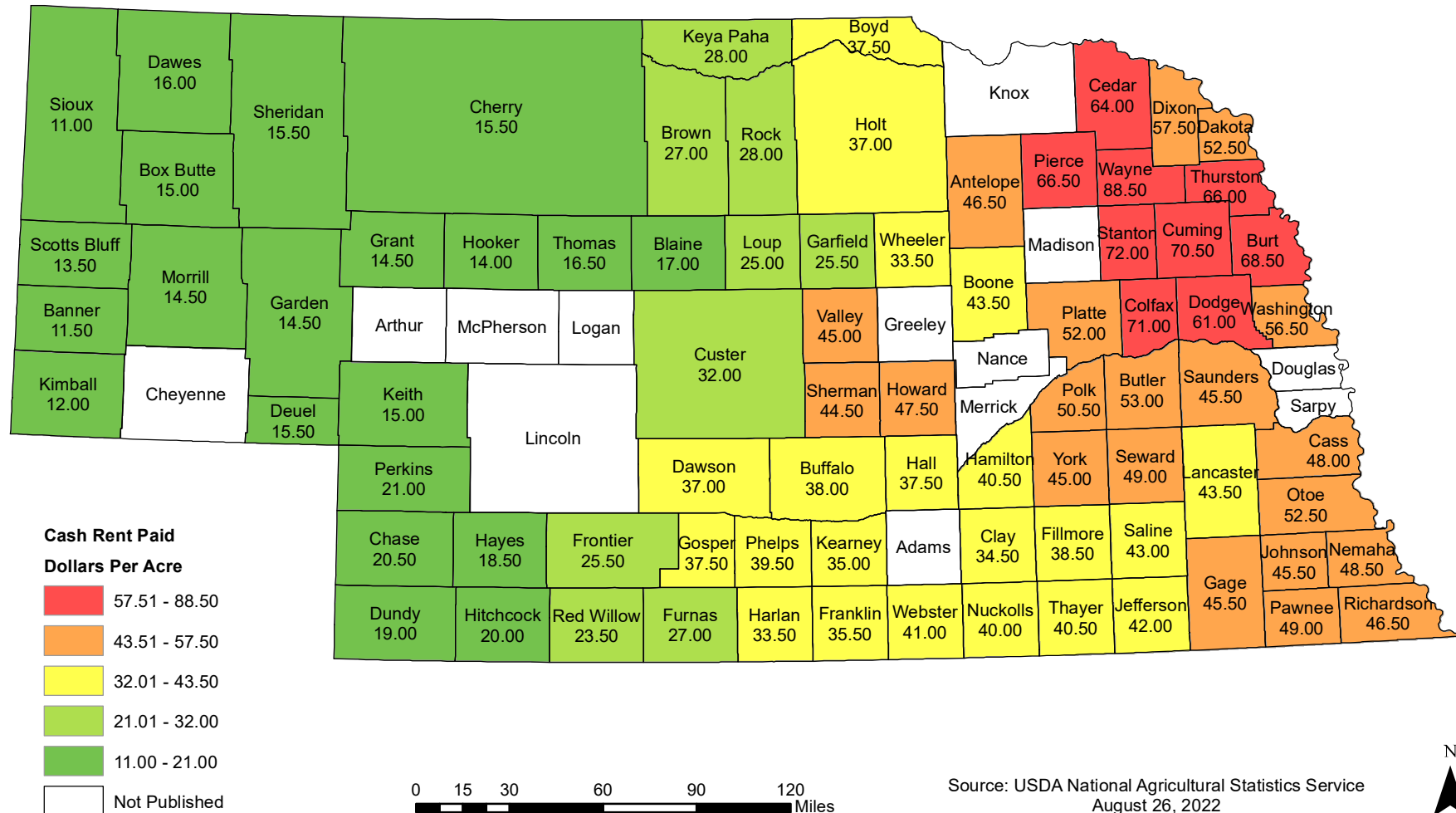
Source: USDA National Agricultural Statistics Service
August 26, 2022



Website: https://www.nass.usda.gov/Statistics_by_State/Nebraska/Publications/County_Estimates/



2022 Pasture Cash Rent Paid Per Acre Nebraska



Website: https://www.nass.usda.gov/Statistics_by_State/Nebraska/Publications/County_Estimates/