Add a Little $\text{Green}$ to Your \text{Green}

Cindy Tusler
Jenny Nixon
UNL Extension Educators
Q: How much do I charge?
Q: How can I be fair?
A: It depends ......................

“An arrangement used by a producer for improved pasture likely is not appropriate for a neighbor who has native range covered by brush and trees.”

Not renting land,
Annually selling a forage crop
Today’s Roadmap

• What do you want?
  • Historic use
  • Emotional ties
  • Future investment

• What do you have?
  • Forage
  • Physical
  • Labor
  • Financial

• How do you get there?
What do you want?

• Income?
• Building for future?
• Emotional ties to land?
• Do you want change?
  – Historic use
  – Potential use
What to avoid?

- Internet advice
- What my neighbor is doing

- Advice needs to be tailored for locale
  - Forage
  - Soils
  - Climate
What do you have?

• Identify
  – Forage – variety and amount
  – Physical Facilities
  – Labor/Time
  – Financial Investment

• Help / Advice?
  – UNL Extension - NRD
  – NE Game and Parks - NRCS
How much do you have?

- Forage Quantity
  - Historic
  - Web soil survey

- Physical Facilities
- Time/Labor

Big 3
- Fences
- Water
- Mineral
What do you have? - Identify

- **USDA Web Soil Survey**
  - Forage production potential starting point
- **Animal Unit**
  - Standard unit of measurement
- **Stocking Rate**
  - Key to properly managed grazinglands
http://websoilsurvey.nrcs.usda.gov
What do you have? - **Identify**

Web Soil Survey
http://websoilsurvey.nrcs.usda.gov

Web Soil Survey
<table>
<thead>
<tr>
<th>Map unit symbol and soil name</th>
<th>Ecological site</th>
<th>Total dry-weight production</th>
</tr>
</thead>
<tbody>
<tr>
<td>2596—Hersh fine sandy loam, 3 to 6 percent slopes</td>
<td>Sandy</td>
<td>3,500, 3,300, 3,000</td>
</tr>
<tr>
<td>4834—Valentine loamy fine sand, rolling</td>
<td>Sands</td>
<td>3,000, 2,600, 2,200</td>
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<tr>
<td>6571—Thurman-Valentine loamy fine sands, undulating</td>
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<tr>
<td>Thurman</td>
<td>Sandy</td>
<td>3,300, 3,000, 2,600</td>
</tr>
</tbody>
</table>

What do you have? - **Identify**

- **Sands**: 2,200 – 3,000 lbs/ac
  - **2600 lbs/ac**
- **Sandy**: 2,600 – 3,400 lbs/ac
  - **3000 – 3300 lbs/ac**
What do you have? - Identify

Nebraska Vegetation Zones

- Zone I: 14-16"
- Zone II: 17-19"
- Zone III: 20-24"
- Zone IV: 25-34"
What do you have? - Identify

Nebraska Vegetation Zones

<table>
<thead>
<tr>
<th>Ecological Site</th>
<th>I Unfav</th>
<th>I Avg</th>
<th>I Fav</th>
<th>II Unfav</th>
<th>II Avg</th>
<th>II Fav</th>
<th>III Unfav</th>
<th>III Avg</th>
<th>III Fav</th>
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</table>

Average production.....pounds /acre for years with unfavorable, favorable and near average precipitation
Cool Season vs Warm Season

Figure 4h. Native Cool-Season Range

Assumes fall regrowth

Mar Apr May Jun Jul Aug Sep Oct Nov
Cool-season range does not grow well during summer. Summer forage quality is poor.

Figure 4d. Native Warm-Season Range

Mar Apr May Jun Jul Aug Sep Oct Nov
Species composition will cause growth distribution and forage quality of warm-season range to vary.
Scenario

• I leased my ranch to a fellow in a neighboring county. My family had been running 100 cows on our ranch for 63 years.
• Range condition had been evaluated and was considered to be High Good.
• I leased the ranch to the fellow to run 100 cows at $100/cow/year.
• The 10 year lease is now up for renewal. When I went out to the ranch, it looked overgrazed, even worse than it looked back in the 1950's.
• My range condition is now Low Fair.
What on Earth Happened?

• No drought and rainfall was about normal for the 10 years.
• Change in size of livestock

• My Extension specialist explained:
  – we ran 100 small frame Hereford cows
  – my lessee ran 100 large frame Beefmaster cows
Cow Size Affects Forage Use

• If the cows ate at a rate of 2.5% of their body weight:
  – 900 lb Herefords eat 22.5 lb/day
  – 1,450 lb Beefmaster cows eat 36.25 lb/day
  – The Beefmaster cows ate approximately 38% more feed (grass, forbs, and browse) than the Hereford cows.

• The lessee has had 38% greater demand on my ranch for the last 10 years.
I REALLY MADE A MISTAKE!

- I considered an animal-unit to be a cow
- I assumed that the stocking rate (carrying capacity) of my ranch was 16 acres/cow
What do you have? - Plan

- Green in the pasture is like green in the bank
  - Need to leave green to grow green
  - Can’t graze everything off

- Cow is like size of check you write
  - Large checks burn through money faster
  - Large cows burn through forage faster
How to use what you have?

*If*… Annually selling a forage crop

*If*… We get to graze (sell) only what we grow, How do I know what I have to sell each year?

**Cow Needs**

**Grass Needs**

Art

Science
What do you have? - Plan

Animal Unit

AU = Mature, 1000 lb cow - dry or calf <6 mos

- Consumes about 26 lbs forage per day
  - on an oven dry basis
- 2.6% of animal’s body weight
- Standard unit of measure
Animal Unit

- **AUD - Animal Unit Day**
  - 26 lbs forage consumed per day

- **AUM - Animal unit month**
  - Forage required for standardized 30 day month

\[
30 \text{ days} \times 26 \text{ lbs per day} = 780 \text{ lbs / mo.}
\]

*so...what does AUD or AUM look like?*
What do you **NOT** see?
What do you have? - Plan

Stocking Rate is...
Number of livestock that can graze a specific pasture for a specified period of time without degrading it.

- The West Pasture carries 56 cow / calf pairs for 2 months.
- We run 45 yearlings in Pasture 1 for 3 months.
- The Upper Collins Pasture can hold 8 horses for 5 weeks.
Stocking rate calculated by knowing...

1. Forage available - pasture part
   - Amount of forage available for harvest

2. Forage demanded - animal part
   - Amount animals will consume

Balanced equation

\[
\text{Forage available} = \text{Forage Demanded}
\]

(Annual forage crop = Forage grazed)
Rent a 300 acre pasture

- Ecological Site – Sands in average condition
  - 2000 lbs per acre
  - Prairie sandreed, sand bluestem, little bluestem

Turn-in mid June with 45 head, calved in April

- 1000 lb cows... an animal unit (AU)
Stocking Rate Calculation

Forage supply  *mother nature made*

300 acre pasture produces 2000 lbs / acre

- $300 \times 2000 = 600,000$ lbs
- Less 50% - pasture health (300,000)
- Less 25% - harvest efficiency (150,000)

Forage available  *you can sell*  150,000 lbs

- 25% of forage produced
- Can sell 500 lbs/ac
Stocking Rate Calculation

We know....takes 1.56 ac/AU for 1 month of grazing Cow/calf pair

780 lbs for 1 AU; selling 500 lbs/ac,
so need 1.56 ac to get 780 lbs

Forage Demanded

- 1.56 ac of forage /cow/mo. X 45 = 70 ac/mo.
- 300 ac ÷ 70 ac / mo. = 4.3 months

For the herd of 45 head

So.... Turn in 10 June come off on 20 October
What If ..... 1400 lb cow

1. Forage Available – *Unchanged*
   - 500 lbs / acre in the pasture

2. Forage Demanded
   - 780 lbs X 1.4 AU = 1092 lbs / cow
     *Selling 500 lbs/ac, so need 2.2 ac to get 1092 lbs*
   - 2.2 ac /cow/mo. X 45 head = 99 ac/mo.
   - 300 ac ÷ 99 ac/mo = 3.0 months

So.... Turn in 10 June; off on 10 September
I considered a cow to be a cow.......  
✓ Know the size of the animal to know the forage demanded

I considered my pasture produced the same amount of forage each year, so the number of head my renter could run should be the same year to year.......  
✓ Know the amount of forage produced to know the forage available
What do you have - **Value**

Ways to determine rental rates – a start

1. Naïve Model
2. Market Survey
3. Income needs v. Ability to Pay
4. Feed Value Approach
5. Land Value Approach

From Determining Pasture Rents, Mary Beutler, South Dakota State University
Ways to determine rental rates – a start

1. Naïve Model
   - Worked last year so let’s keep it the same
   - Simplest method; Assumes:
     - Last year was “fair”
     - No significant changes in land lease market or livestock prices

2. Market Survey

3. Income needs v. Ability to Pay

4. Feed Value Approach

5. Land Value Approach
Ways to determine rental rates – a start

2. Market Survey

- Relatively simple; very common
- Call your neighbors; Use UNL Ag Econ data

http://agecon.unl.edu/realestate.html
Nebraska Agricultural Statistical Districts
## Historical Cash Rental Rates For Cow-Calf Pairs

<table>
<thead>
<tr>
<th>Year</th>
<th>NW</th>
<th>North</th>
<th>NE</th>
<th>Central</th>
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A cow-calf pair is typically considered to be 1.25 to 1.30 animal units. However, this can vary depending on weight of cow and age of calf.
## 2011 Cash Rental Rates: Averages and High and Low Third Ranges

<table>
<thead>
<tr>
<th>NW</th>
<th>North</th>
<th>NE</th>
<th>Central</th>
<th>East</th>
<th>SW</th>
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<td>Cow-Calf Pair Rates</td>
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<td>Range: High 3rd</td>
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<td>25.00</td>
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<td>Stocker (500-600 lbs) Rate</td>
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<td>20.35</td>
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<td>16.00</td>
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<td>17.35</td>
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A cow-calf pair is typically considered to be 1.25 to 1.30 animal units. However, this can vary depending on weight of cow and age of calf.
Ways to determine rental rates – a start

3. Income Needs v. Ability to Pay

- Negotiated Rate between:
  - Landowner costs per ac or AU (Income needs)
  - Livestock owner returns (ability to pay)

- Good information is important:
  - Landownership costs - correctly identify needs
  - Land Productivity - correctly identify ability to put gain on animals

NCR Extension pub No. 149:

Pasture Rental Arrangements for your Farm
Ways to determine rental rates – a start

4. Feed Value Approach

➢ Rent based on feed value to grazing animal’s diet

➢ Does not account for value of landowner provided services... fencing, etc.

\[
\text{Avg Animal Wt} \times \frac{\text{Avg Value / T of standing alfalfa}}{\text{Pasture quality factor}} = \text{Monthly rental charge}
\]

during grazing period (expressed in 1000 lbs units – converts livestock number to AU)
during the same time period

http://www.ams.usda.gov/AMSV1.0/lsmarketnews
Ways to determine rental rates – a start

5. Land Value Approach
   - Relatively simple
   - Determine base rental rate / acre
   - Then negotiate

\[
\text{Land Value} \times \frac{\text{Rent-to-value ratio}}{100} = \text{Base rent / acre}
\]
Ways to determine rental rates – a start

Valuing winter grazing

• Rule of thumb
  ➢ 50 – 70% of summer value
• Alternative feed source = Cornstalks
• Sheridan Co. area (example)
  ➢ 50¢ / head / day cornstalks
  ➢ Recall: $21.80 – 33.20; Avg $28/month
  ➢ 93¢/day summer; 47¢ - 65¢/day winter
How to use what you have?

• Stocking rate
  – Animal Unit
  – “Stock and Monitor”
    • Check water and mineral, check the grass

• Season of use
  – Cool vs Warm
  – Grass vs Flower
Adding it all Up

- DNDNDN rule - is Critical
  - Discuss, Negotiate, Discuss, Negotiate........
- Good agreements = good working relationships
- Start early
  - Probably don’t want to rent to person posting in April
    “Looking for summer pasture for 150 pair”
Adding it all up

The “best fitting” pricing method will depend on the risk aversion and amount of service provided by each party. No single pricing method is best for everyone.

- Cover your costs
  - Payment schedule
- Ensure your renter understands
  - Ask the “dumb” questions
- Write it down; write it down
Writing it down
Good agreements = good working relationships

Verbal farm leases are legally presumed
• Year-to-year
  • No fixed time period
  • Automatically renewed for another year
  • Until proper termination notice given