Holistic Grazing Planning

Increase Forage and Animal Productivity
Why Focus on Land Health?

We don’t *inherit* the land from our ancestors.

We *borrow* it from our children.
Invest in Soil Fertility

Diamonds!
The Holistic Management® Framework

Practice One
- Inventory (Whole Under Management)
- Management Team
- Assets

Practice Two
- Purpose
- Mission Statement
- Quality of Life and Values
- Behaviors and Systems
- Vision

Practice Three
- Holistic Goal
- Ecosystem Processes
- Biological Community
- Water Cycle
- Mineral Cycle
- Energy Flow

Practice Four
- Tools for Managing Ecosystem Processes
- Human Creativity
- Technology
- Rest
- Fire
- Animals and Living Organisms
- Money and Labor

Practice Five
- Planning and Monitoring Processes
- Financial Planning
- Land Planning
- Grazing Planning
- Biological Monitoring

Practice Six
- Testing Question Categories
- Testing Question Categories
- Root Cause
- Weak Link
- Comparing Options
- Gross Profit Analysis
- Input Analysis
- Vision Analysis
- Gut Check

Feedback Loop
- Plan (Assume change)
- Implement
- Control
- Monitor
Key Land Health Indicators
The Four Ecosystem Processes

• Biological Community: Assessing Succession
• Water Cycle: Assessing Its Effectiveness
• Mineral Cycle: Assessing Its Effectiveness
• Energy Flow: Assessing Sunlight Conversion
Livestock & Soil Fertility

- Livestock are a tool to harvest the wealth and improve the land.
- Livestock serve multiple functions—mow, fertilize, $
- Soil organisms are livestock you must feed (compost, compost tea, raw milk)
- How do you integrate livestock back into agriculture, not as just a separate enterprise. (Ownership is only one way)
Profit & Land Health

It is **impossible** to waste **green growth**

- Cash
- Biological Capital
The Holistic Management® Grazing Plan

Manage land/soil, animals, and wildlife so that:

- Growing season—maximum high quality forage (long term)
- Non-growing season— forage and/or cover for livestock and wildlife
- Weather challenges dealt with effectively
- Meet nutritional requirements of the livestock and wildlife
- Minimal stress on animals and people
- Maximum coordination—cropping, wildlife needs, and other land uses
- Moving toward your Holistic Goal (social, $, biological)
Tools & Management Guidelines

**Tools**
- Grazing
- Animal Impact

**Management Guidelines**
- Herd Effect
- Stock Density
- Time
- Population Management

**Money**
- Labor
- Technology

**Human Creativity!**
Holistic Grazing Plan

• Management Considerations (Continual Feedback Loop)
• Grazing Areas
• Forage Quantity/Quality
• Herd Makeup
• Recovery Periods
• Grazing Periods (Operating the Plan)
• Monitoring/Adjusting Plan
Holistic Grazing Plan

1. Outline objectives for both the grazing livestock and the grazing land
2. Determine grazing and stored feed parameters and potential yield
3. Identify feed needs for grazing and non-grazing periods
4. Make note on grazing plan of special considerations
5. Schedule in the number of days grazing
6. Review plan
## Holistic Grazing Plan

<table>
<thead>
<tr>
<th>Field</th>
<th>Acre Yield</th>
<th>Considerations</th>
<th>Grazing (Growing)</th>
<th>Stored</th>
<th>Non-Growing</th>
<th>AD</th>
<th>ADA</th>
<th>Total AD</th>
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<tr>
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<td>10</td>
<td></td>
<td>May 12D(1-12)</td>
<td>12D(1-12)</td>
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<tr>
<td>A</td>
<td>20 T/SG</td>
<td>Early Calving Area</td>
<td>June 12D(1-12)</td>
<td>12D(1-12)</td>
<td>12D(1-12)</td>
<td>480</td>
<td>24</td>
<td>1140</td>
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<td>B</td>
<td>30 T/SG</td>
<td>Grazing Only</td>
<td>July 18D(1-18)</td>
<td>18D(1-18)</td>
<td>18D(1-18)</td>
<td>720</td>
<td>24</td>
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<tr>
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<td>Grazing Only</td>
<td>Aug. 10D(1-10)</td>
<td>10D(1-10)</td>
<td>10D(1-10)</td>
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<td>18</td>
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<tr>
<td>D</td>
<td>20 T/5T</td>
<td>Hay or Grazing</td>
<td>Sept. 12D(1-12)</td>
<td>12D(1-12)</td>
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<td>927</td>
<td>46</td>
<td>2782</td>
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<td>E</td>
<td>20 T/5T</td>
<td>Hay or Grazing</td>
<td>Oct. 13D(19-31)</td>
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<td>20 T/5T</td>
<td>Hay or Grazing</td>
<td>Dec. 30 T</td>
<td>30 T</td>
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<td>953</td>
<td>48</td>
<td>2860</td>
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### Significant Time Events

- Calving
- Vacation
- Wean

### Animal Numbers

- Cow Condition Scores 3.5 On April 1st
- Reproductive Rates
- Weight Gains/Wean
- Wearing Wts. - EQS @ avg.

### Animal Performance Factors

- Milk Production Levels
- Other

### Hay Yield

- 2.5 T = 1.5 T = 1 T = 0.5 T
- 2nd Cut S/A = 1,000 # cow
- 1 T = 57 AD

### Recovery Periods

- Spring: 200D
- Summer: 300D
- Fall: 480D

### Grazing Days

- 210 Days
- 180 Days
- 30 Days
Holistic Grazing Plan

Paddocks (sq ft.)
- A 195,300
- A2 72,450
- B 71,881
- C 20,000
- D 72,900
- E 232,389
- E1 161,150
- F 161,150
- G 94,464
- G2 147,420
- H 184,896
- I 191,619
- J 19,530
- K 80,892

Landscape/Management Considerations
- K = Seasonal Pond
- Winds NW
- Use wooded areas in winter
- A & A2 for spring kidding
Holistic Grazing Plan

<table>
<thead>
<tr>
<th>Paddock</th>
<th>Moves 2009</th>
<th>GD</th>
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<tbody>
<tr>
<td>A</td>
<td>April/May</td>
<td>61</td>
</tr>
<tr>
<td>A2</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>B</td>
<td>June</td>
<td>30</td>
</tr>
<tr>
<td>C</td>
<td>July</td>
<td>24</td>
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<td>D</td>
<td>August</td>
<td>31</td>
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<tr>
<td>E</td>
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<td>-</td>
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<td>E1</td>
<td>March</td>
<td>31</td>
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<tr>
<td>F</td>
<td>December</td>
<td>24</td>
</tr>
<tr>
<td>G</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>G2</td>
<td>Mid-Oct/November</td>
<td>45</td>
</tr>
<tr>
<td>H</td>
<td>Jan/Feb</td>
<td>50</td>
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<tr>
<td>I</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>J</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>K</td>
<td>September/mid-Oct</td>
<td>45</td>
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</table>

Strip graze with electric netting
Allow for one year recovery
GD = Goat Days
Goats fed in barn during vacations and bad weather
Grazing Planning

1. What landscape are you trying to create?
2. How much total forage will the cell have to supply?
3. How much forage will the average acre/hectare have to supply?
4. How long will standing forage last?
5. How long a recovery period do you feel is required?
6. Given the recovery period required, how long will animals spend in each paddock, and when will they return?
7. When and where will you have to concentrate animals even more to maintain healthy grassland, reduce weeds and woody vegetation or heal serious erosion?
Grazing Principles

Overgrazing is a function of time.

It happens to individual plants, not pastures.
Grazing Principles

IDEAL

Graze, manure, trample every plant.

Allow full recovery.
Grazing Principles

Overgrazing

**Staying** in a pasture too long at one time.

**Returning** to a pasture before plants have fully recovered from the last graze.
Grazing Principles

Insufficient Recovery

Staying in a pasture too long at one time.

Returning to a pasture before plants have fully recovered from the last graze.
Grazing Principles

Recovery

Figure 2. Plants of "Fireweed" unclipped and clipped to stubble height of 3 inches, 3 inches, and 1 inch at 3-week intervals.
Reading Plant Forms

• Overgrazed Plants (The Astro-Turf Look)
• Overbrowsed Plants (Beware the Orchard)
• Overrested Plants (Gold vs. Black)—uneven utilization
• What’s not there? You get what you manage for!
Grazing Practices

Holistic Planned Grazing Focuses on 3 Parameters

• Time
• Area
• Volume

Develop Plan in line with Holistic Goal and Management Considerations
Management Considerations

- Financial Need
- Land Health
- Future Landscape Description
- Weather
- Geography (flooding, cliffs, creeks, etc.)
- Social needs (vacation, help, etc.)
- Infrastructure
Time

Grazing Time Influenced by:

Volume (Forage Available ADA)

# of Animals

Area (Size of paddock)

Example: 40 ADA X 5 acres = 200 AD

10 Cows = 20 Days Grazing
Forage Inventory

- **Stocking Rate Influenced by:**
  - Volume (Forage Available)
  - Amount of time animals will be feeding
  - Area (Size of paddock)
  - Recovery period (# of grazings/clippings)

**Example:**
10 cows $\times$ 270 days of grazing = Need 2700 AD

Average ADA forage quality is 40 ADA with 2 grazings = 80 ADA

Have 40 acres = 80 $\times$ 40 = Have 3200 AD

Have enough feed for grazing. Will need to buy feed for additional 950 AD (10 $\times$ 95) in non-growing season or sell animals after grazing season.
Animal Numbers

Stocking Rate Influenced by:

• How many animals can you feed for how many days?

• How many animals can you feed for how many days on one acre (Animal Days per Acre) – ADA

• Example: One cow = 2000 sq ft. for one day = 22 ADA
  (43,650 sq ft. per acre) (43,650/2000 = 22)
Recovery

Recovery Time Influenced by:
Length of time needed for desired plants (perennial grasses) to recover.

Slow Growth = Slow Recovery
Fast Growth = Fast Recovery

Example: Late Spring/Summer = Fast = 30 Days
Fall or Drought = Slow = 60 days
Graze Tall
Plant Growth and Animal Moves

Growth Rate Influences Moves

Slow Growth = Slow Moves
Fast Growth = Fast Moves

If you stay too long in a fast growth period overgrazing can occur after 3 days

Example: Fast growth period, strip graze or make paddocks smaller so you can leave area after 3 days
# of Paddocks

More paddocks equals:

More recovery
More flexibility
Greater stock density
More even utilization/trampling/fertilization

Using temporary electric fence increases paddocks without additional infrastructure.
Example for # of Paddocks

**Scenario One:** 4 paddocks @ 10 acres each = 40 acres
60 days recovery needed
4-1 = 3 paddocks grazed for 60 days = 20 days grazing per paddock
Animal performance could suffer (fouling, choice forage already selected, etc.)
Overgrazing occur in fast growth

**Scenario Two:** 10 paddocks @ 4 acres each = 40 acres
60 days recovery needed
10-1=9 paddocks for 60 days = 7 days grazing per paddock
Animal performance will be better (fresh ground more often)
Overgrazing less likely to occur
Animal Performance

Animal Performance Monitoring includes:

**Animal Production** (weight gain, milk/fiber production, etc)

**Animal Health** (urine ph, dung form, gut fill, behavior, eyes, etc.)
Grazing Principles

Principles of Drought Management

1. Combine Herds
2. Slow down (increase recovery)
3. Supplemental feed
4. Reduce numbers
Grazing Principles

When to breed, birth or wean?

When nature tells us to.

Work with nature in your grazing plan.
Ecosystem Processes

These four ecosystem processes are principles of natural laws.

Our grazing planning can work with them or fight against them.

Nature always bats last.
Story Problem Time

Answer the Questions for both Scenarios

1. Total Goat Days?
2. Goat Days/Acre?
3. Stock Density/acre?
4. How many acres needed to carry 7 goats?
5. What would be the Stocking Rate/acre?
6. GP/acre?

Information
1 acre = 43,560 sq ft.
Recovery period= one year
GP/goat = $75

<table>
<thead>
<tr>
<th></th>
<th>Scenario 1</th>
<th>Scenario 2</th>
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</thead>
<tbody>
<tr>
<td>Total Acreage Grazed</td>
<td>30 acres</td>
<td>30 acres</td>
</tr>
<tr>
<td># of Goats</td>
<td>140 Goats</td>
<td>7 Goats</td>
</tr>
<tr>
<td>Total Grazing Days</td>
<td>3 days</td>
<td>183 days</td>
</tr>
<tr>
<td>Paddock Size</td>
<td>30 acres</td>
<td>2000 s. ft.</td>
</tr>
</tbody>
</table>

HOLISTIC MANAGEMENT INTERNATIONAL
Answers

1. 140 X 3 = 420 goat days vs. 7 X 183 = 1281 goat days
2. 420/30 = 14 GDA vs. 1281/30= 43 GDA
3. SD of 140/30 = 5 G/A vs. 22 X 7 = 152 G/A
4. 183 acres vs. 60 acres
5. Stocking rate = 26 acres/goat (365/14 = 26) vs. (365/43 = 8.5) 8.5 acres/goat
6. GP = $2.89/acre vs $8.82/acre
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