

Grazing as a Grassland Habitat Management Tool



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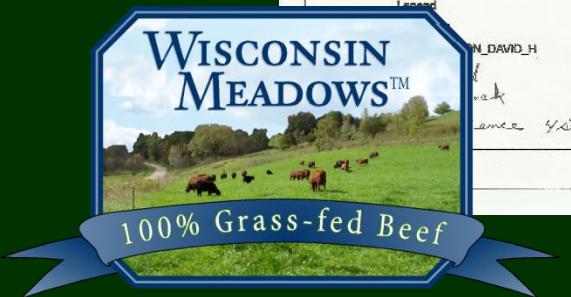
WI Bird Conservation Initiative Conference
March 19-21, 2015



CONSERVATION PLAN MAP Date: 7/23/2012

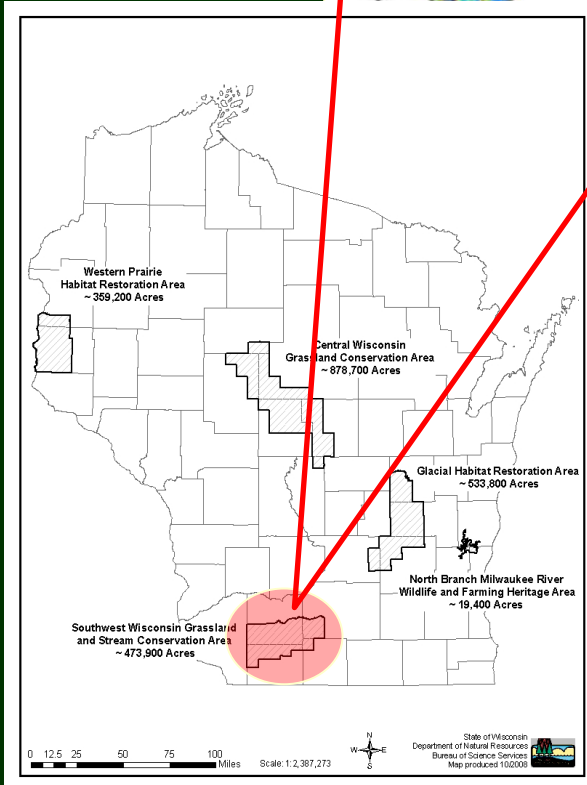
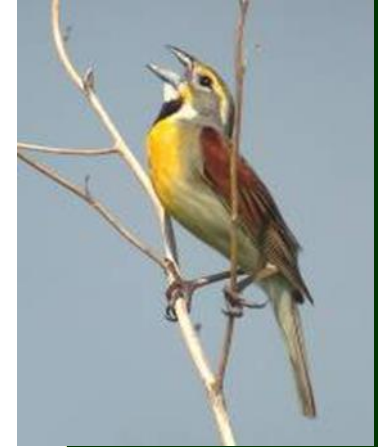
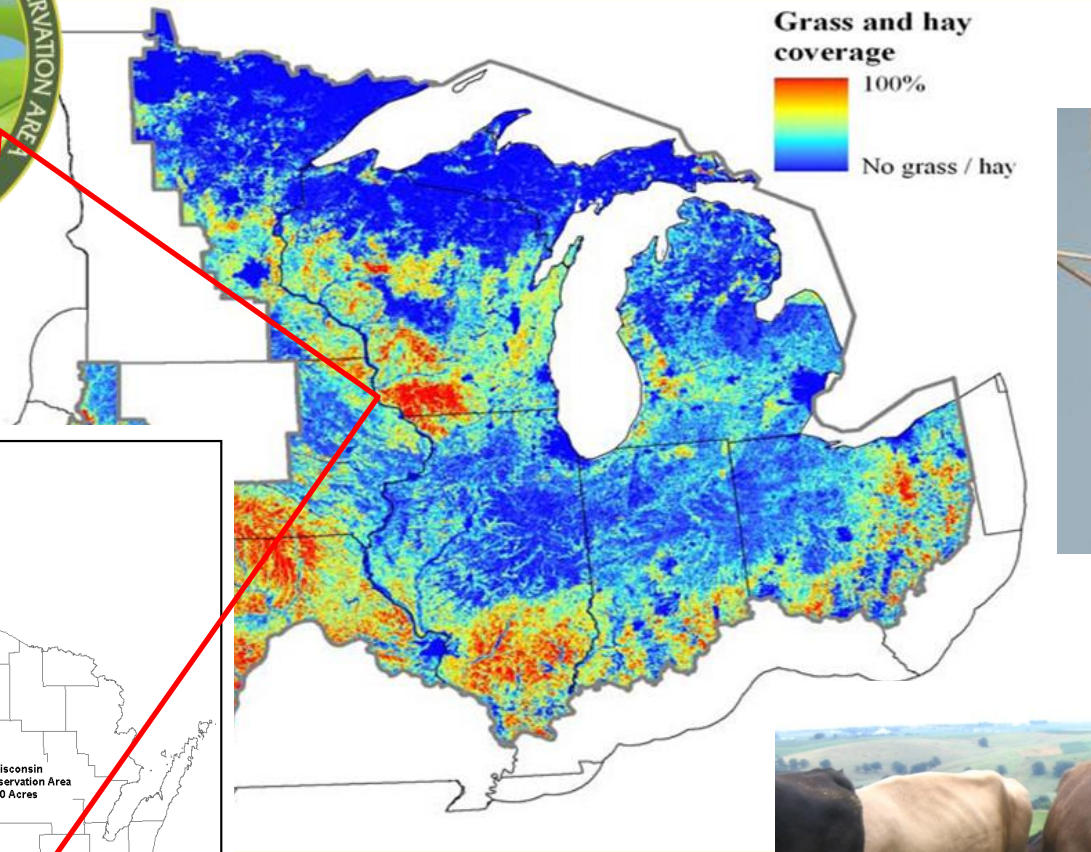
DAVID H. ANDERSON
 COUNTY LAND CONSERVATION DEPARTMENT
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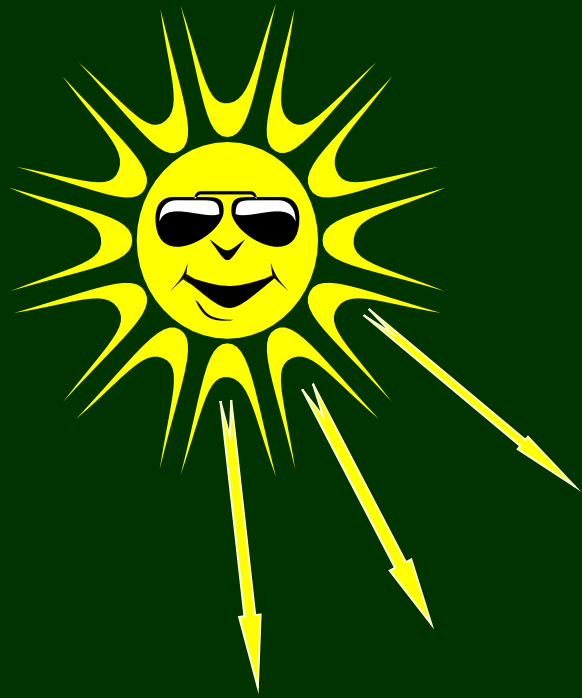
Field Office: DODGEVILLE SERVICE CENTER
 Agency: USDA-NRCS
 Assisted By: Danni Finkelmeyer
 State and County: WI, IOWA



My background

WI Grassland Resources





Well-managed grazing systems
can be part of the solution

- Control Soil Erosion
- Protect Water Quality
- High Quality Wildlife Habitat



Delivering Ecosystems Services

The Grazing Broker Project



An estimated 60% of land in the region is owned by non-farming landowners

Non-farming landowners

Agricultural

Goals:

Incorporating
habitat value
into profitable
agricultural
systems

Landowner

Goals:

Income
Aesthetics
Conservation
Avocation
Other?

Conservation

Goals:

Utilizing
livestock
grazing as
a tool for
habitat
restoration

AB715

Grassland birds: Fostering habitats using rotational grazing



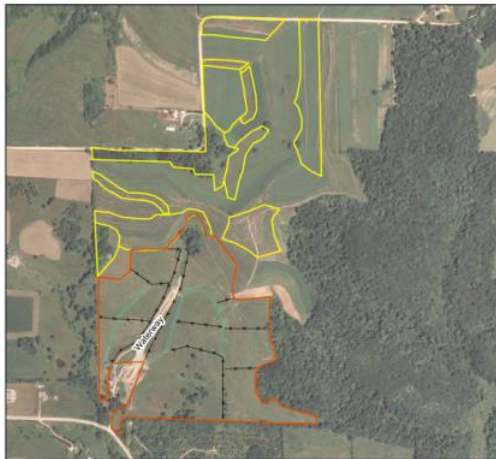
Steve Underwood
Alan Temple
Jerry Burdick
Steve Temple
Lizette Patten

EQIP Managed Grazing System

Date: 1/19/2006

Field Office: RICHLAND CENTER SERVICE CENTER
Agency: USDA-NRCS
Assisted By: Jean M. Strainell

Legal Description: T. 11N, R. 2E
Sections 11, 14, and 15



Legend

- Managed Grazing System
- Animal Trails and Walkways
- Fence

Image: 2005 FSA Compliance Imagery

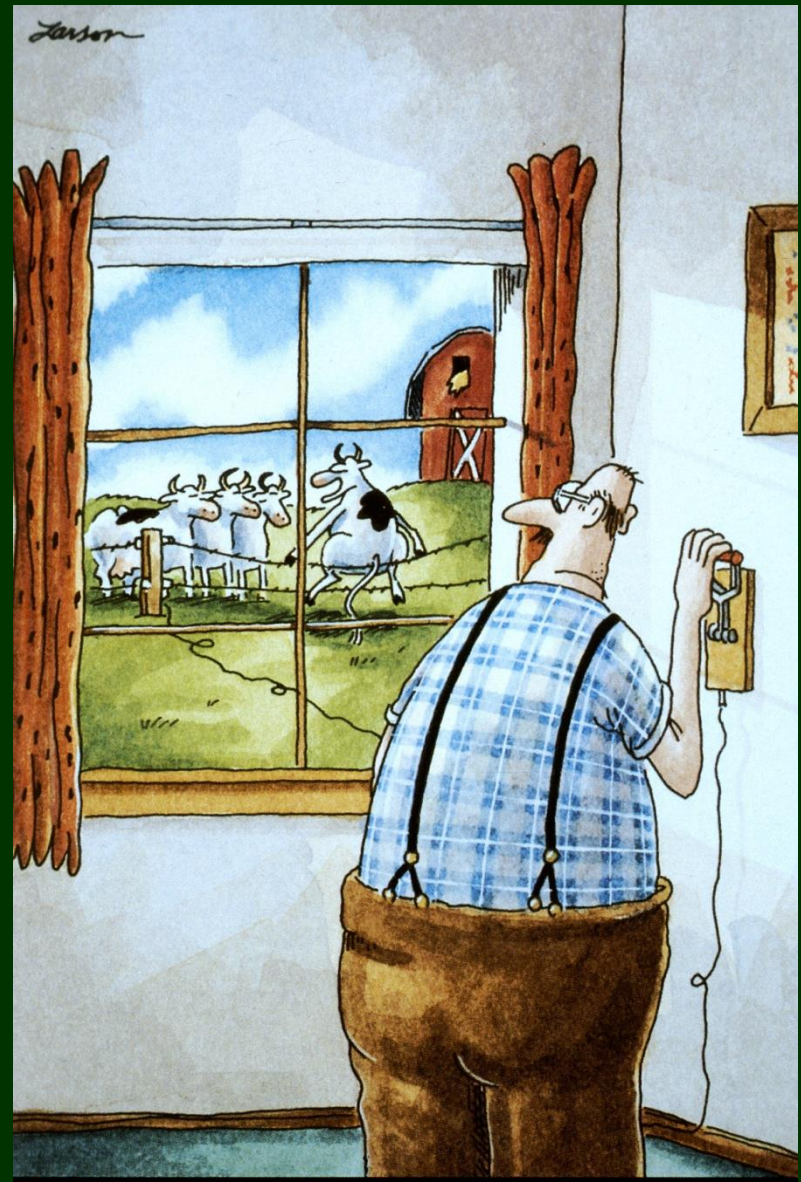
Grazing Broker Assistance

- Database of producers & landowners
- Facilitating relationships
- Grazing planning
- Conservation assessment
- Lease templates
- Connecting with resources
- Business planning



What is managed grazing?

- Maximize pasture productivity and quality by using rotational grazing
- Maximize utilization of pasture
- Minimize investment in infrastructure
- Let the cows do the work!



"Look, if it was electric, could I do this?"

Management intensive grazing

- 30 days
- 1 paddock

- 30 days
- 30 paddocks

Rest-Rotation Continuum



- Higher quality
- Higher yield
- More diversity
- More flexibility



How does managed grazing work?



Land is divided into paddocks with portable fencing.

Dairy and Beef Grazing in WI

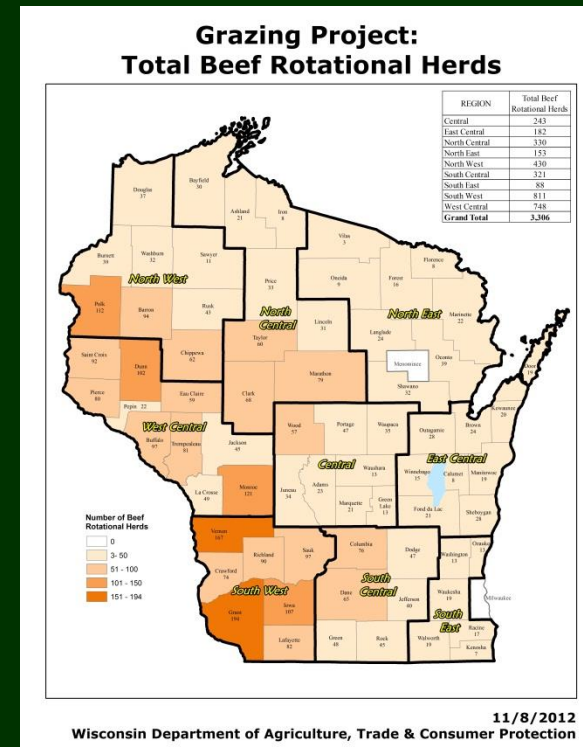
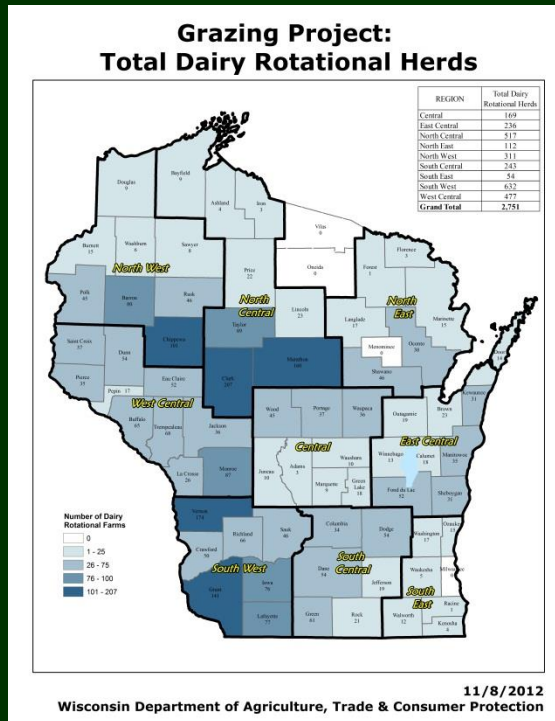
from 2007 Census of Agriculture & 2010 grazing surveys

Dairy Grazing Survey

- # of MIG farms: 3070
- 22% of dairy farms in WI
- Average herd size: 61 cows
- Land owned: 246 acres

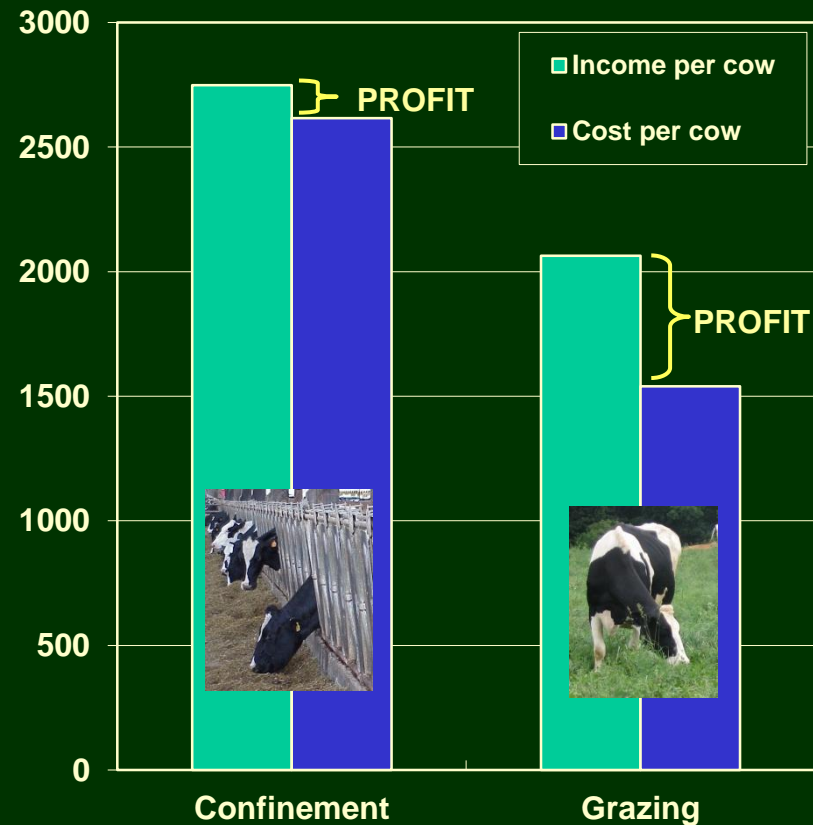
Beef Grazing Survey

- # of MIG farms: 4763
- 42% of beef farms in WI
- Average herd size: 27
- Land owned: 203 acres



Three ways to increase profit

- Increase production
- Reduce cost of production
- Produce and sell into a premium market



“Terroir”

Terroir refers to a region, whose plants, soil, & microclimate impart distinctive qualities to food products.



Plants

Animals Unique flavors



Soil



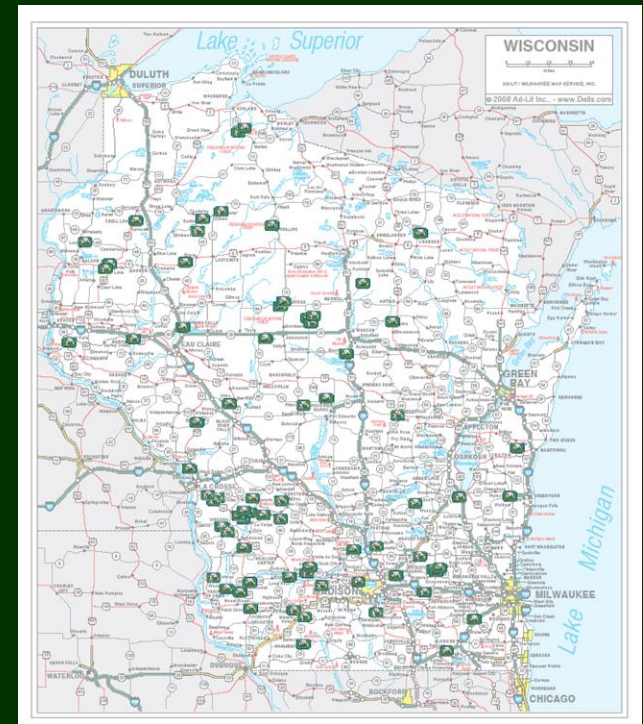
Taste of place

Grass-fed meats



- National sales
- 1998:
 - 100 producers
 - \$3-4 million in sales
- 2014
 - 3500 producers
 - \$550 million in sales
 - >\$2 billion in imports

Wisconsin Grass-fed Beef Cooperative



- Incorporated on June 27, 2008
- Currently have 120+ members
- Selling beef to food coops, grocery stores, restaurants, and meat markets in Southern WI.
- 2014 sales ~\$1.2 million

Pasture milk is different



Growing the Pasture-Grazed Dairy Sector in Wisconsin

Summary of findings and recommendations



The vast majority of dairy cattle in the United States never see the outdoors while they're lactating. Over 50% of the milk produced in the US comes from just 1750 large farms, primarily in California, Idaho, New Mexico, and Texas.

In contrast, about 22% or more than 3000 of Wisconsin's dairy farmers use managed grazing. Can the unique features of milk from pastured cows contribute to the resurgence of an artisan dairy tradition?

Report author:

Laura Paine, Grazing and Organic Agriculture Specialist
Wisconsin Department of Agriculture, Trade, and Consumer Protection

Grass-based dairy products: challenges and opportunities



Prepared by:
Laura Paine

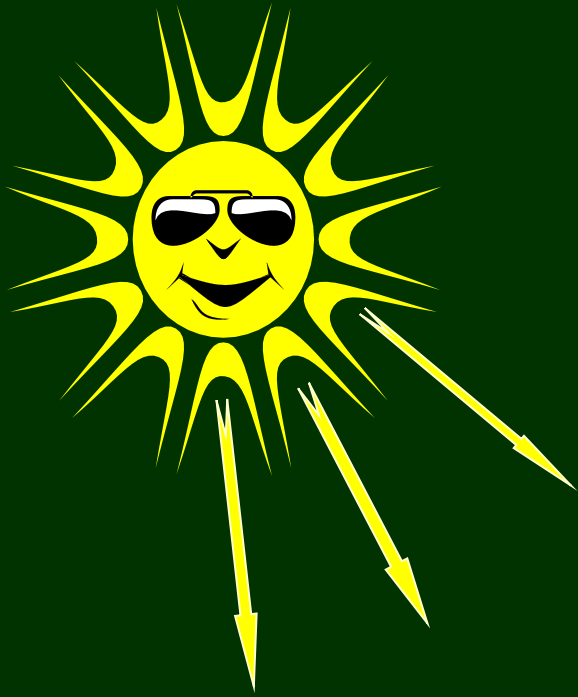
Wisconsin Department of Agriculture, Trade and Consumer Protection

Published by the UW-Madison Center for Integrated Agricultural Systems

August, 2009

- Available at:
- [http://datcp.wi.gov/Farms/Grazing/Grass Fed Market Development/index.aspx](http://datcp.wi.gov/Farms/Grazing/GrassFedMarketDevelopment/index.aspx)
- <http://www.foodsci.wisc.edu/pasturegrazeddairy/>

Not only is it profitable and tasty...



- Control Soil Erosion
- Protect Water Quality
- High Quality Wildlife Habitat



Delivering Ecosystems Services

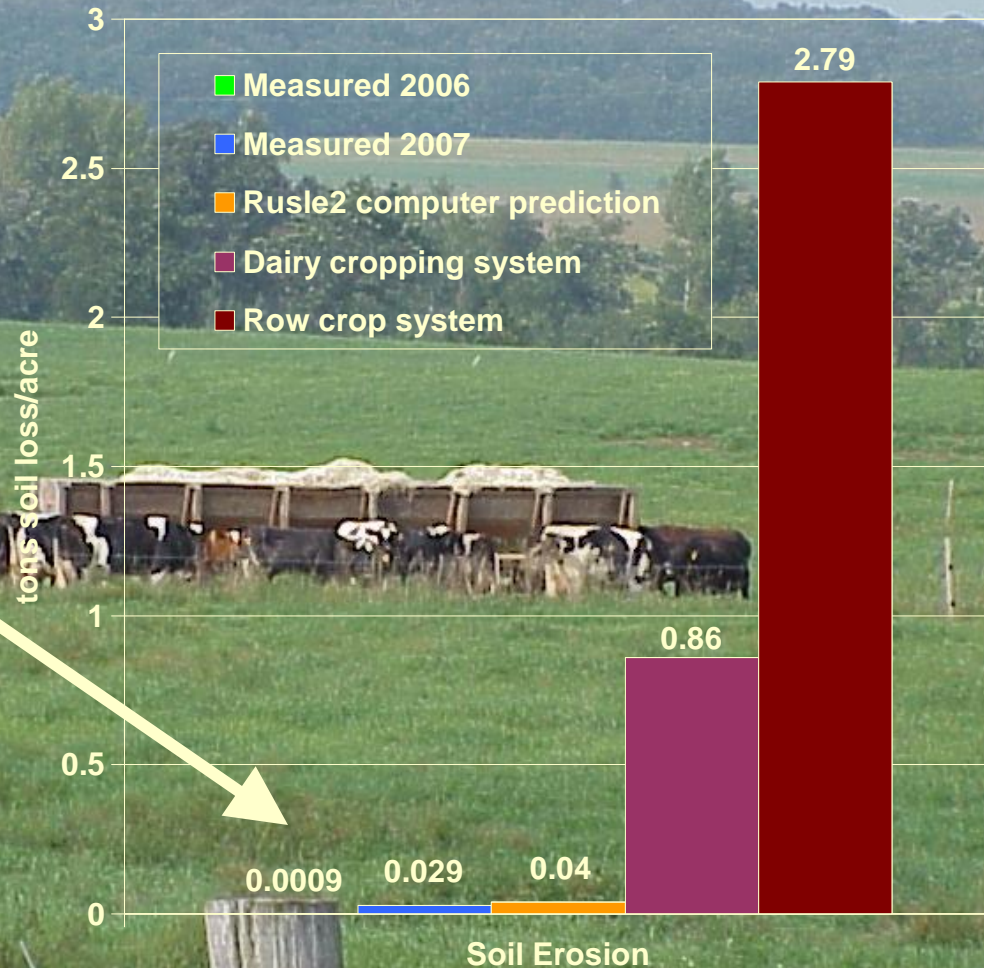
Conservation Goals

	Soil Erosion Water Quality	Wildlife Habitat	Ecological Function	Ecosystem Restoration
Necessary Features	Sod Cover, Reduced Ag Chemical Inputs	Habitat Structure Patch size	Energy Flow Mineral Cycling Water Cycling Biodiversity	Plant & Animal Biodiversity
Scale	Field	Field or Farm	Farm or Landscape	Landscape
Appropriate Species	Warm Season or Cool Season Grasses	Warm Season or Cool Season Grasses	A Diverse Array of Plant and Animal Species	Native local ecotypes & species
Compatible with well- managed grazing?	Yes	Yes	Yes	Yes

Soil Erosion Control

data from Breneman Discovery Farms project

Sediment losses from Breneman outwintering pastures

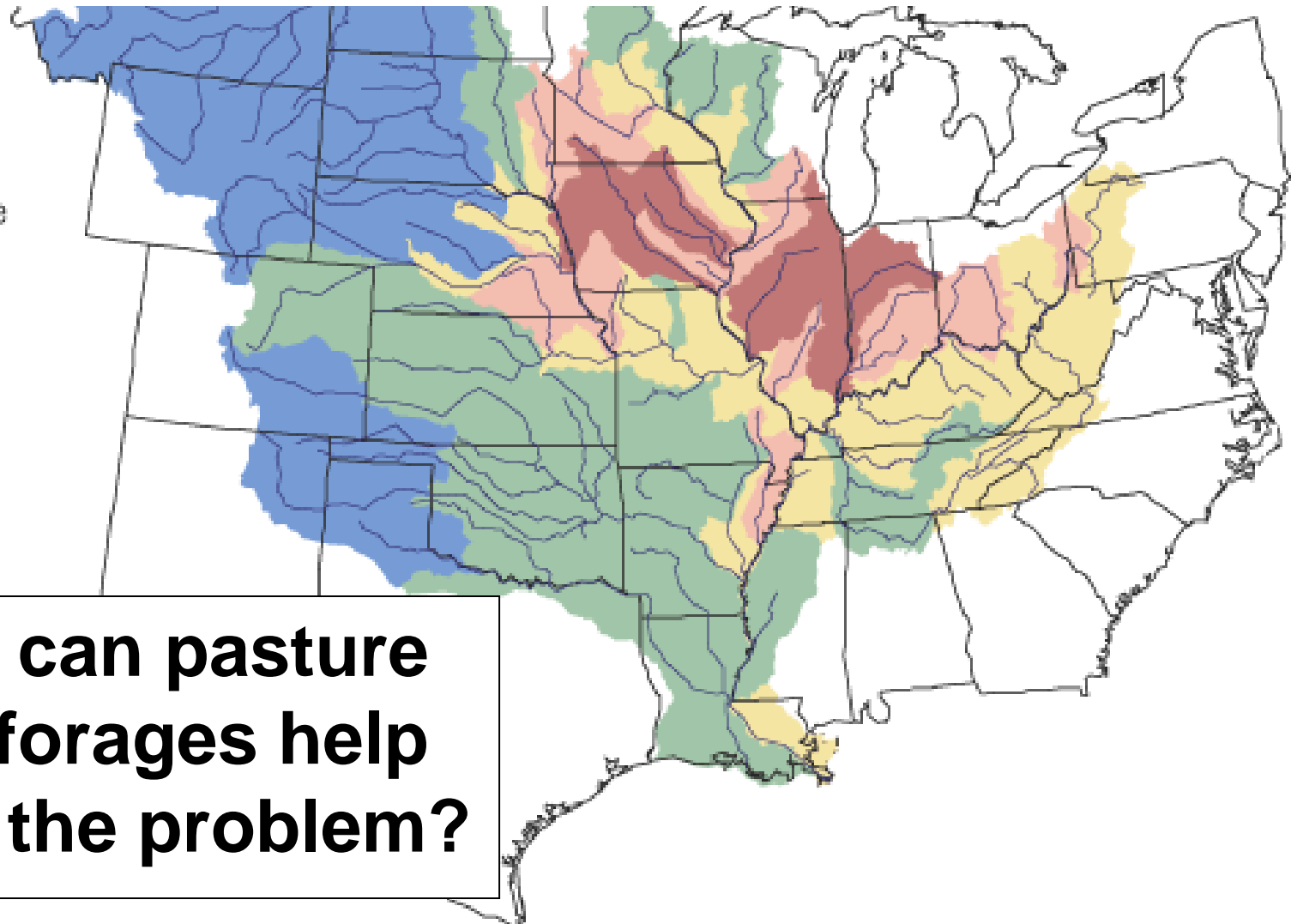
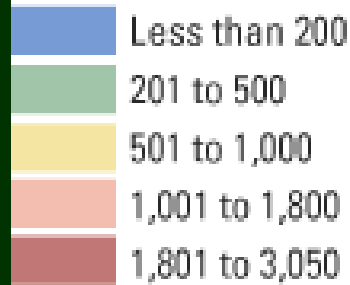




Water Quality and Hypoxia

EXPLANATION

Nitrogen yield, in kilograms per square kilometer per year



How can pasture and forages help solve the problem?

Green Lands Blue Waters

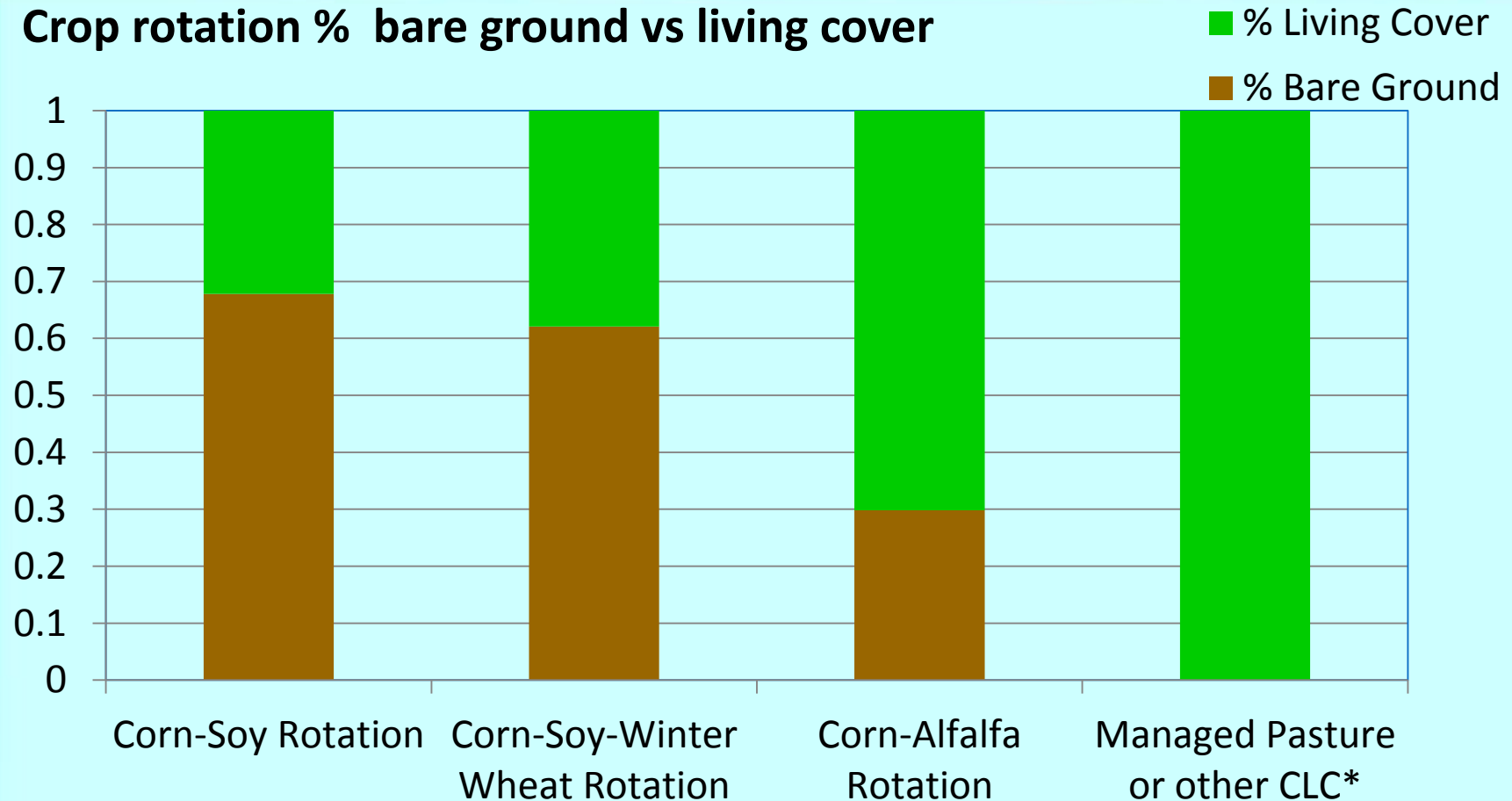


Mission: To support development of and transition to a new generation of agricultural systems that integrate more perennial plants and other continuous living cover in the agricultural landscape.

- Perennial forages
- Perennial bioenergy crops
 - Perennial grains
 - Agroforestry
 - Cover crops

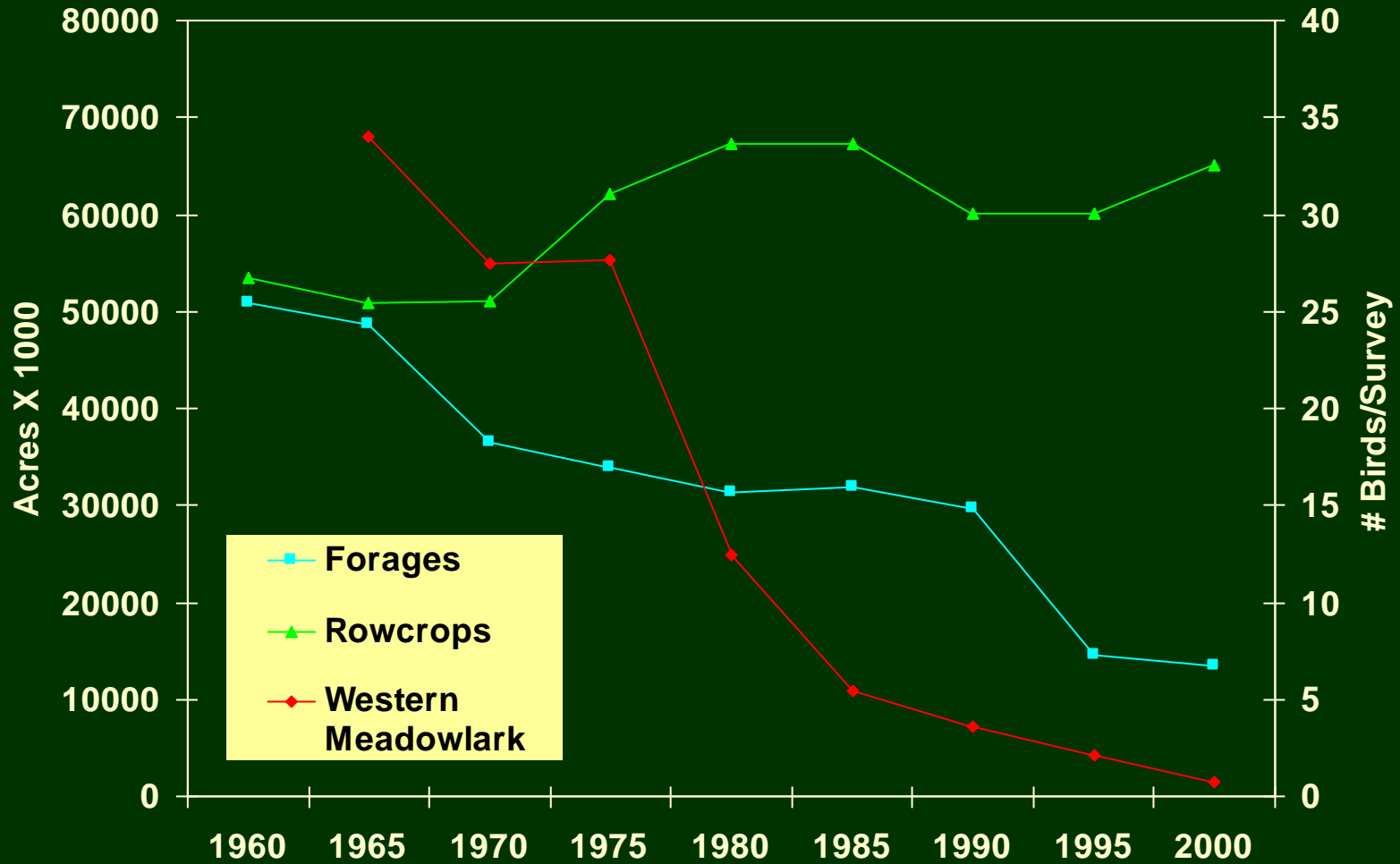
What is continuous living cover?

Crop rotation % bare ground vs living cover



- **Corn-Soy 2 yr. rotation**
- **Corn-Soy-Wheat 3 year rotation**
- **Corn-Alfalfa-Alfalfa-Alfalfa 4 year rotation**

Forages contribute to wildlife habitat





Managing for habitat goals



Management intensive grazing is a flexible system

- 30 days
- 1 paddock

- 30 days
- 30 paddocks

Rest-Rotation Continuum



- Higher quality
- Higher yield
- More diversity
- More flexibility



Improving Riparian & Aquatic Habitat



Grassy Buffers



Managed Grazing

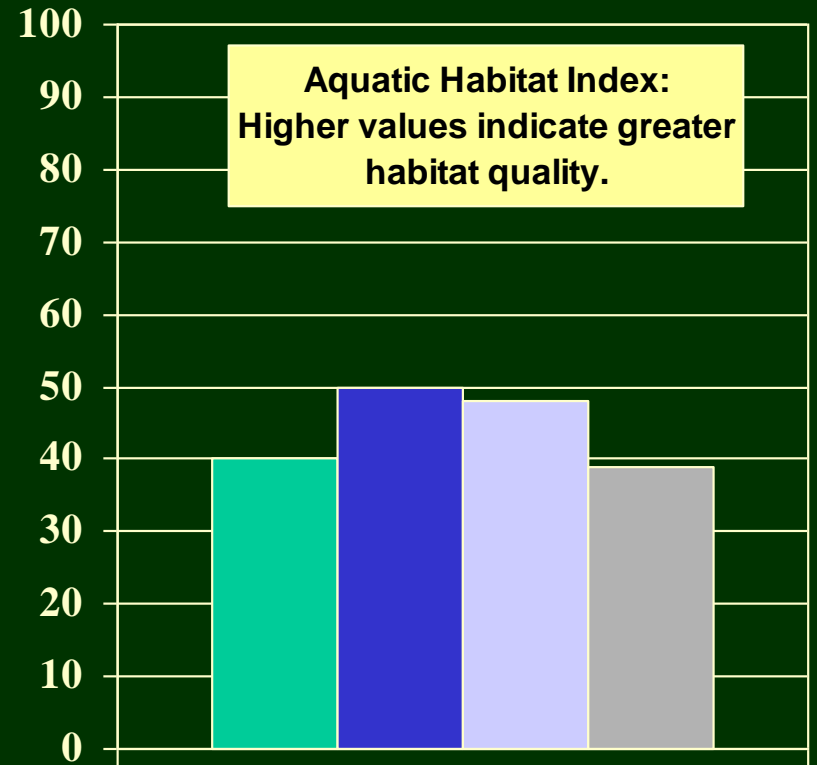
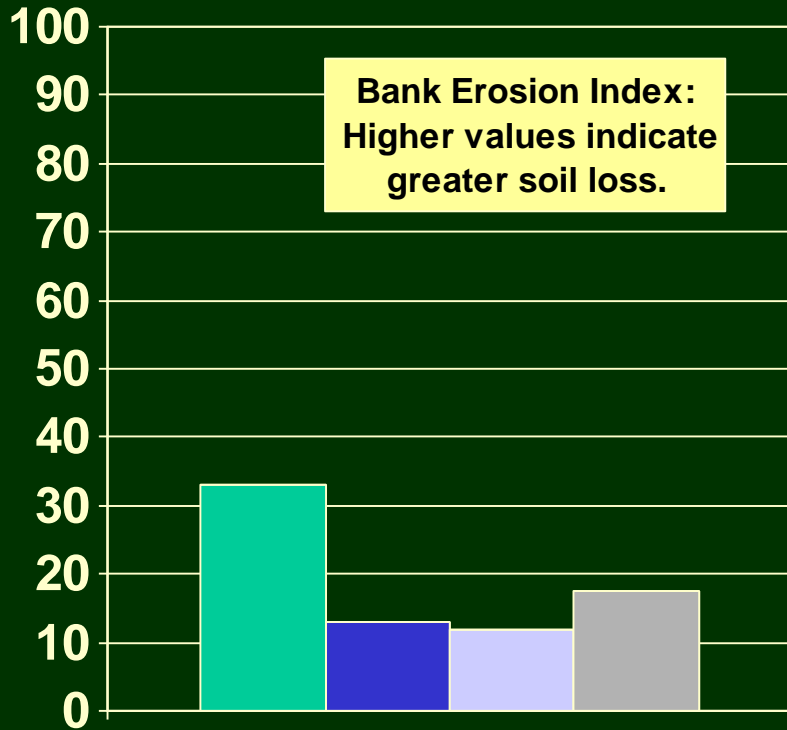


Unrestricted Cattle Access



Woody Buffers

Improving Aquatic Habitat



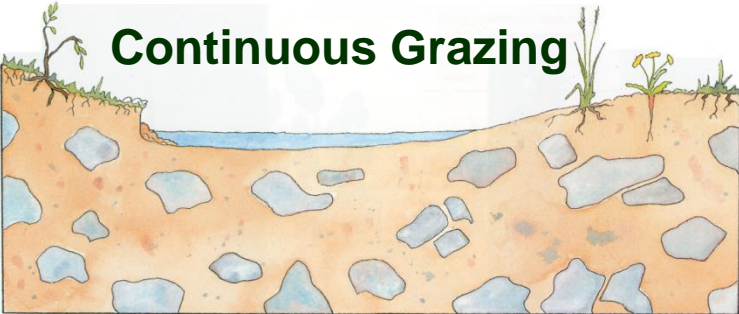
■ Unrestricted Grazing ■ Managed Grazing
■ Grassy Buffer ■ Woody Buffer

■ Unrestricted Grazing ■ Managed Grazing
■ Grassy Buffer ■ Woody Buffer

Aquatic Habitat & Bank Stability




Continuous Grazing



Where vegetation has been removed by heavy grazing, logging or floodplain development, the cohesive nature of streambanks breaks down and the stream becomes wide and shallow.

Diverse, healthy vegetation has a major influence on stream channel shape and size

Rotational Grazing



A detailed illustration of a streambank under rotational grazing. It shows a deep, narrow channel with a large fish (trout) swimming in the water. A dragonfly is perched on a rock in the water. A cow is grazing on the bank, and a small insect is visible near its mouth. The soil is shown with roots and rocks, indicating a stable and healthy streambank.

Managing livestock behavior

Constructed crossings allow animals safe access to water and protect streambanks

- Place where animals like to cross.
- Use gravel, geotextile, or cement, depending on conditions.
- Use 1.5" rock.

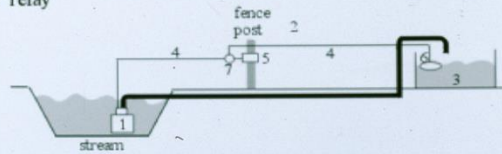


Managing Riparian Pastures

Pumping from Stream to Tank

Diagram Key

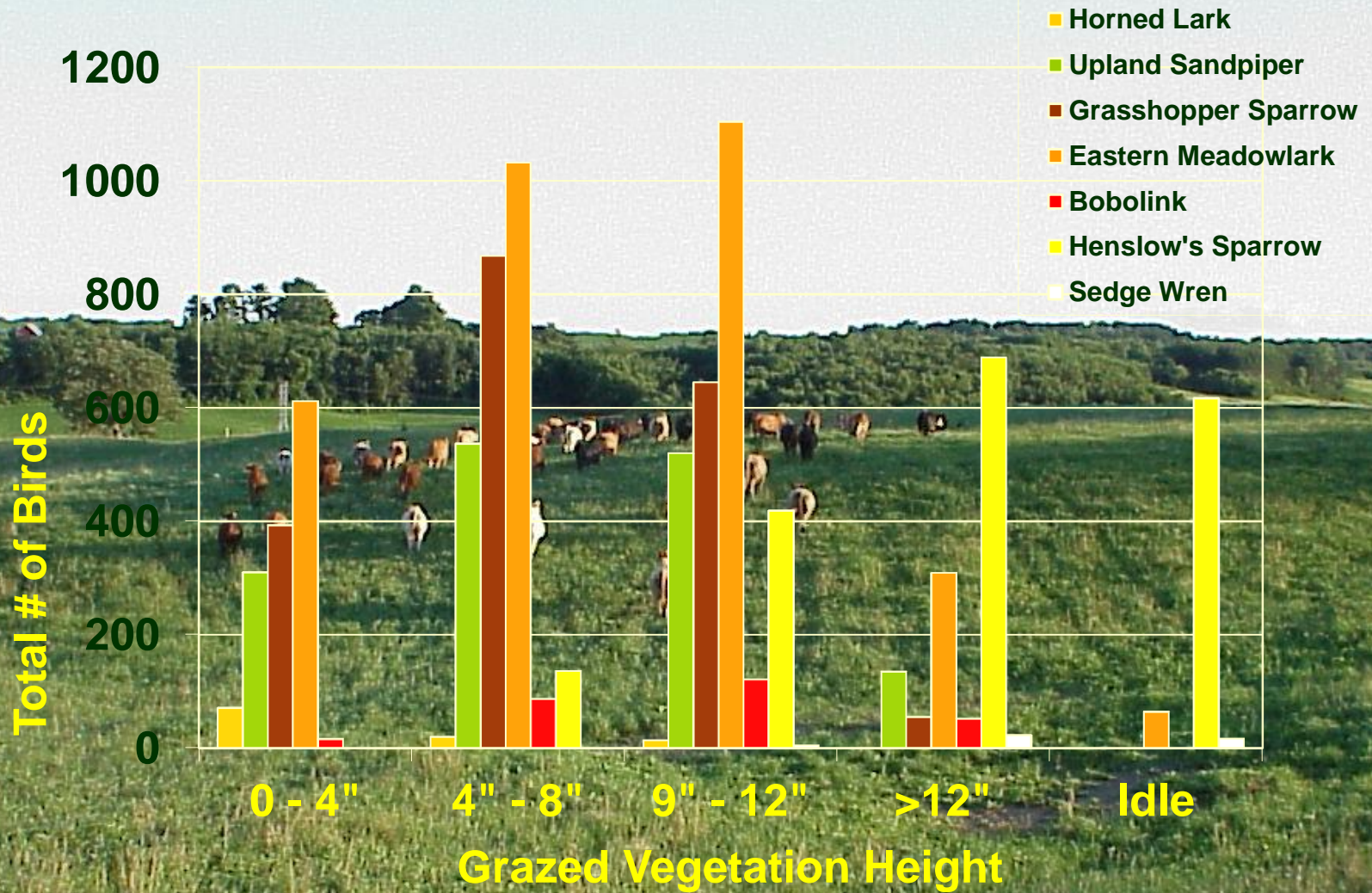
1. bilge pump
2. underground water line
3. water tank
4. outdoor extension cords
5. 12 volt battery
6. float switch
7. relay



Grassland bird habitat needs

- Cover (shelter) from weather and predators
- Food and water
- Space to obtain food, water, and to attract a mate



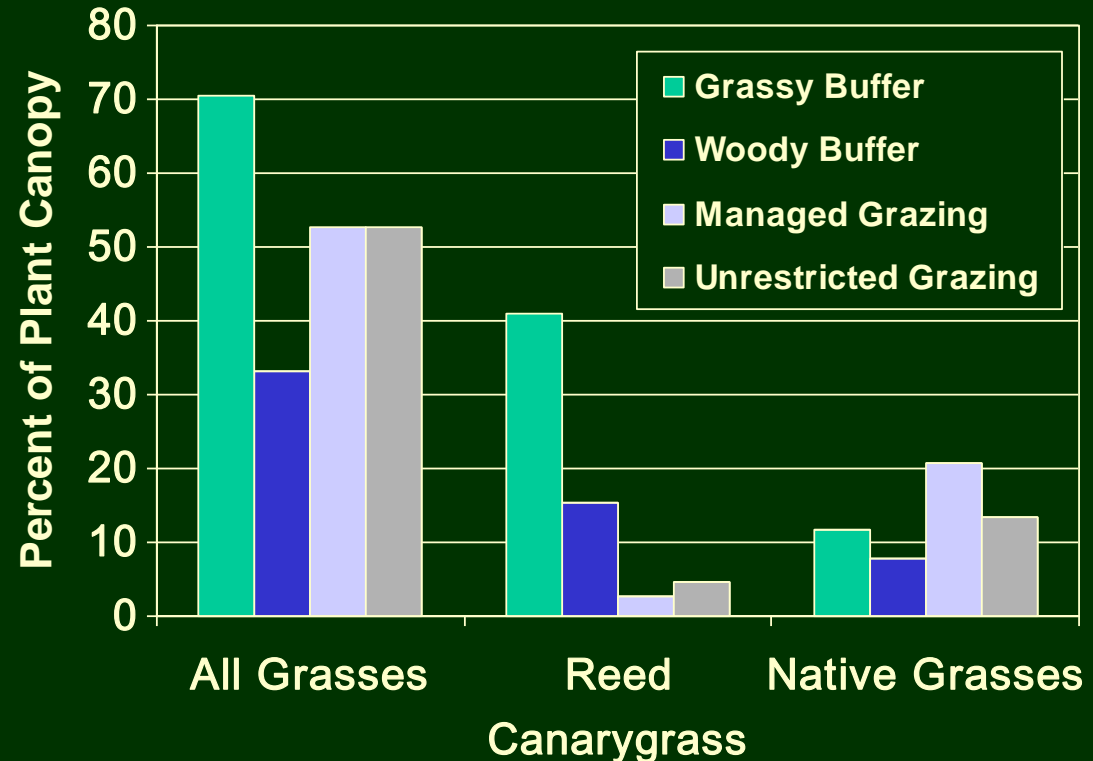


Managing Grazing to Enhance
Grassland Bird Habitat

Manging grazing to control invasive weeds

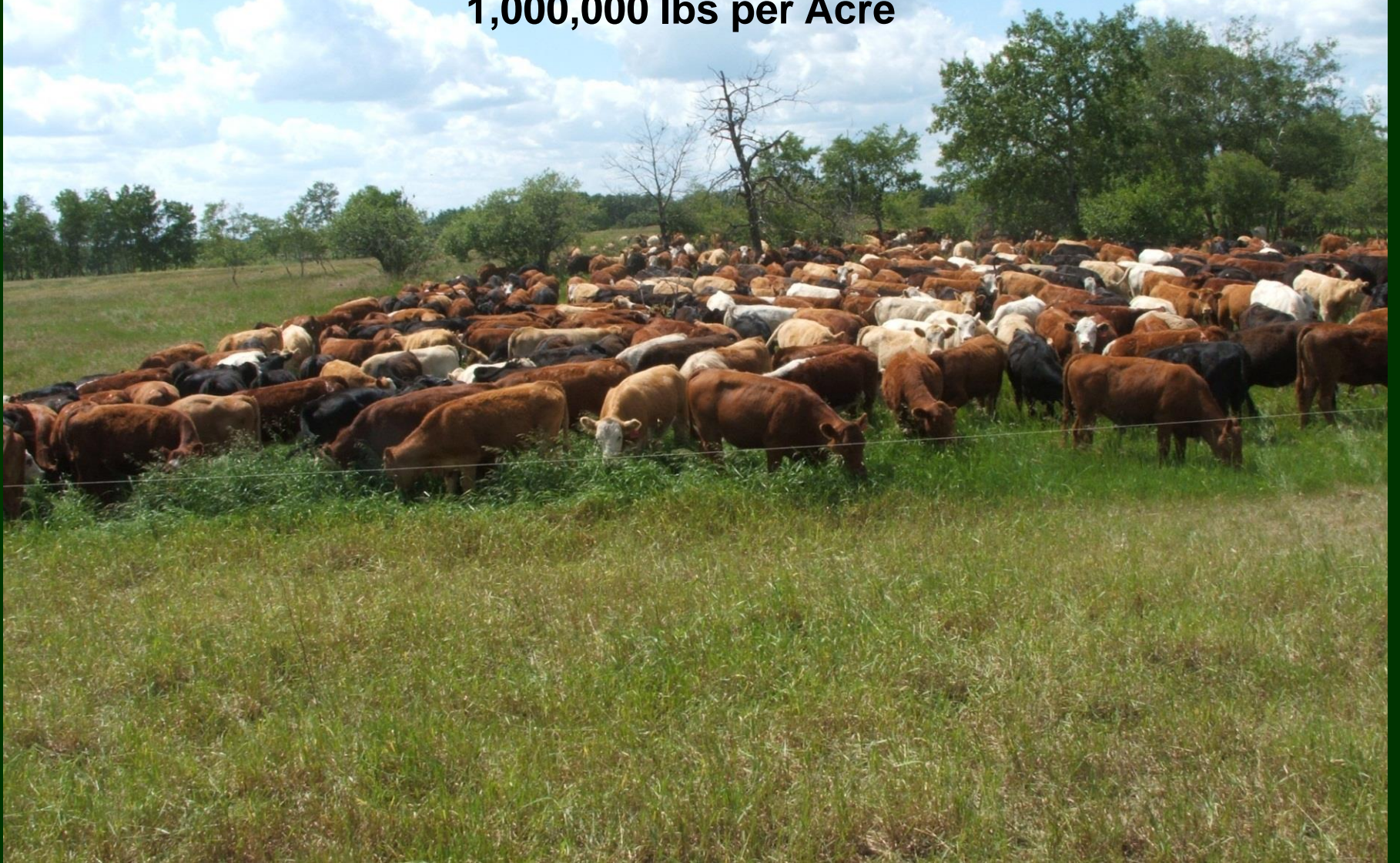


Grazed sites had more native grasses and sedges and less reed canarygrass, an invasive species in riparian areas and wetlands.



Mob Grazing

1,000,000 lbs per Acre



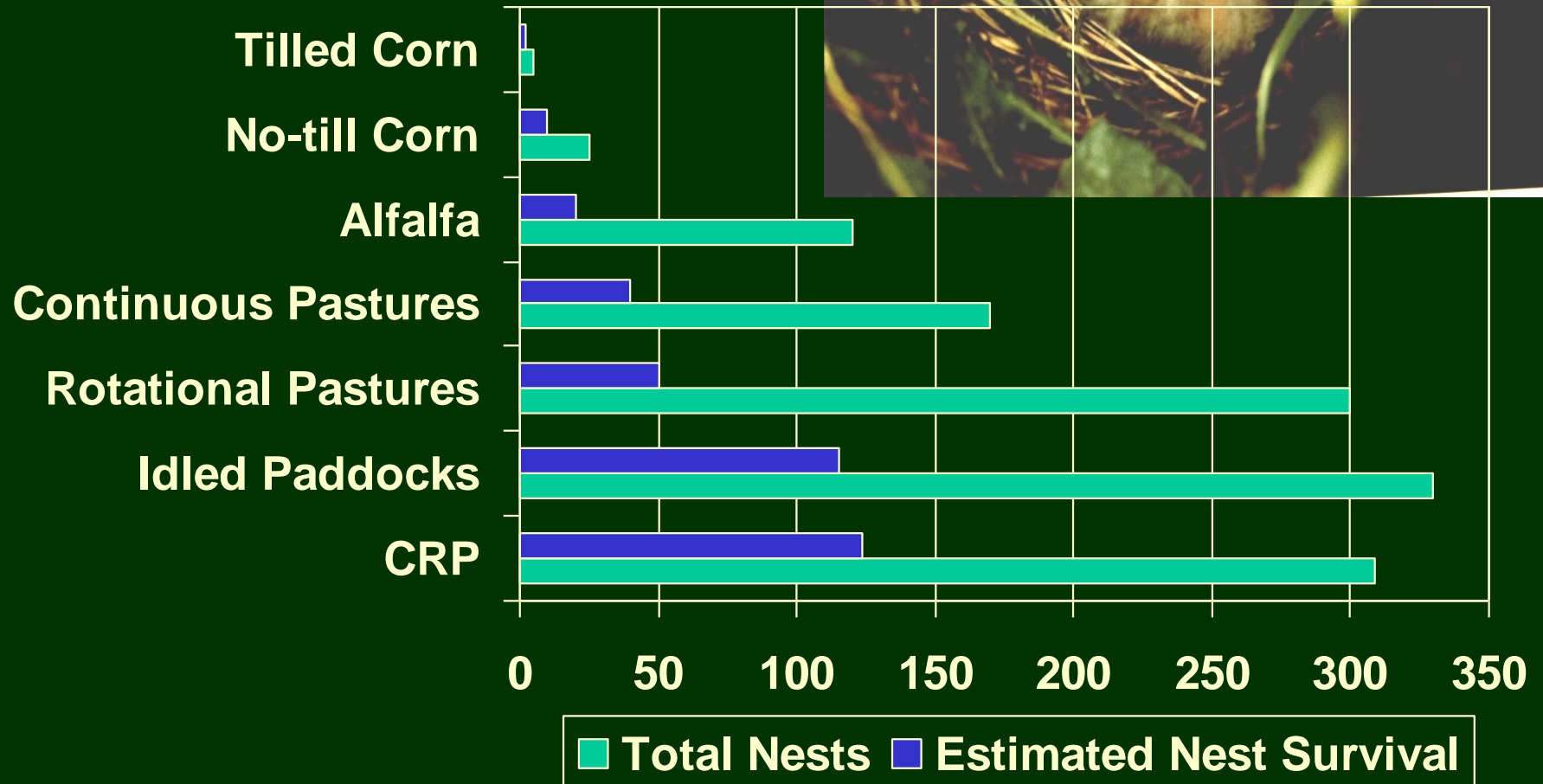
Training your animals to be weed eaters



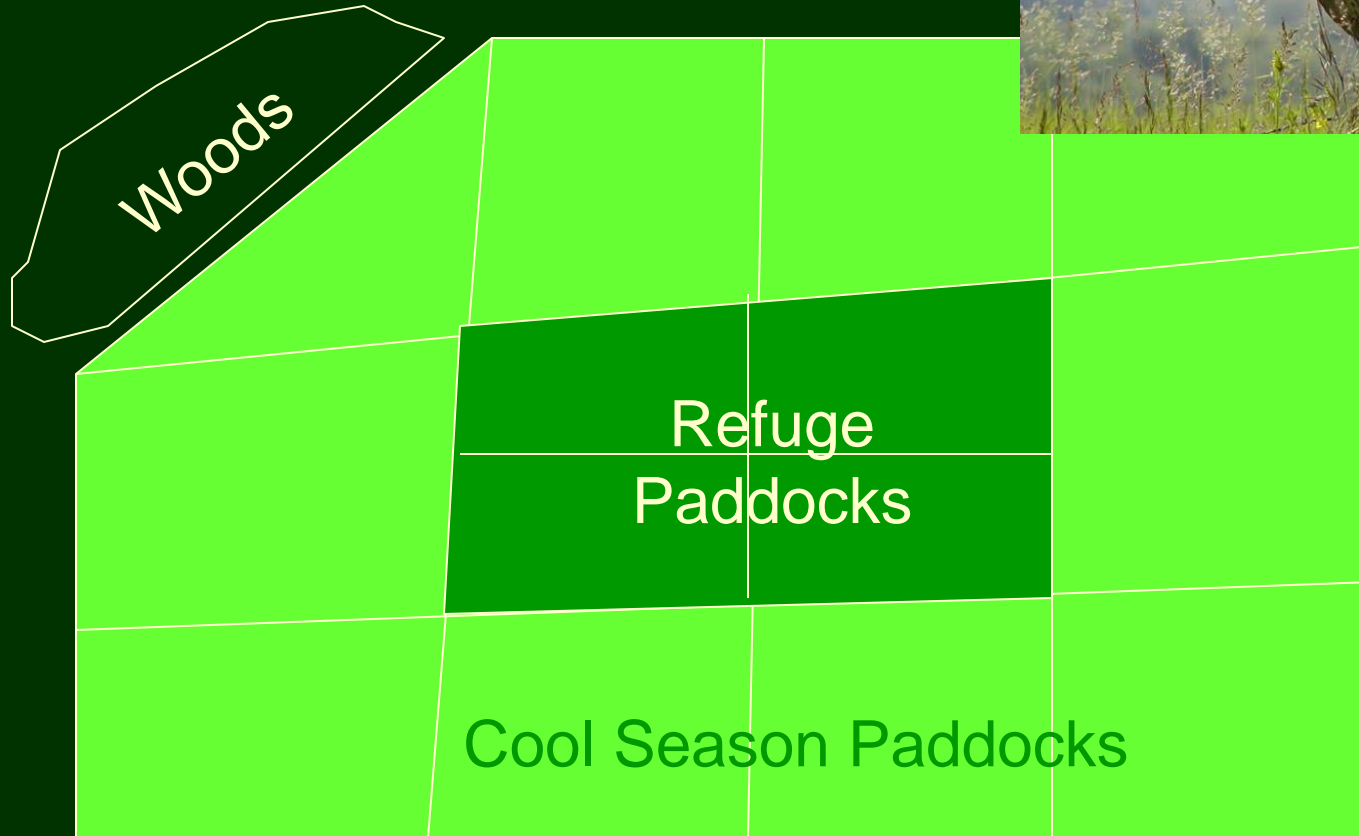
Habitat restoration using goats



Making Compromises: Nest Survival



Creating a Nesting Refuge



Grassland bird nesting season: May and June

Nesting 'Refuges': *for the birds*

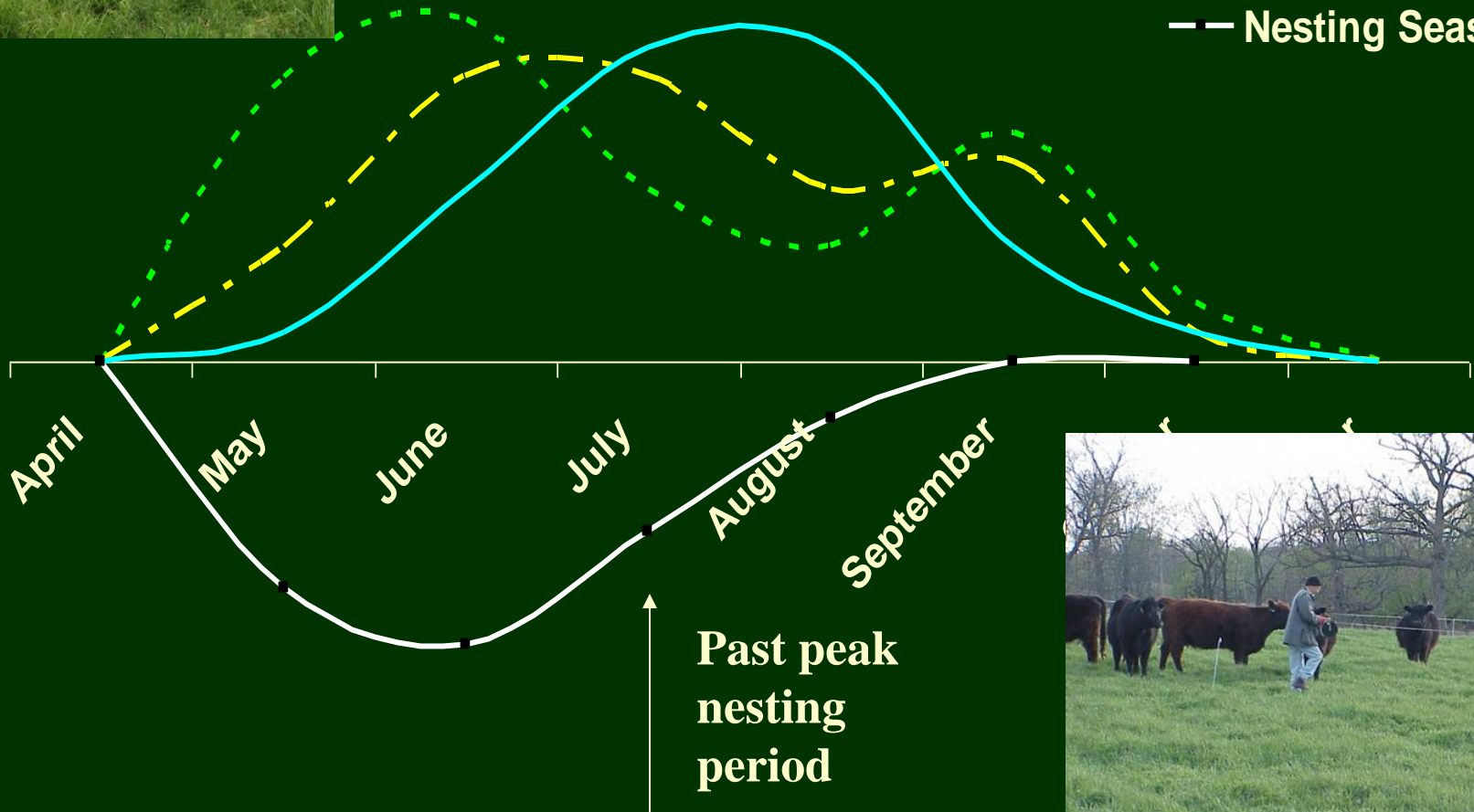
- Create one or more large idle areas rather than a lot of small ones.
- 20 acres is a good minimum size, up to $\frac{1}{4}$ of a pasture area.
- Locate in the center of open areas, away from trees, buildings, and roads
- Defer grazing for 6 weeks or more between May 1 and July 15.
- Harvest area for hay following idle period

Native Warm Season Pastures for Nesting Birds



Native grasses
ready to graze

- - - Cool seasons
- - - Legumes
- Warm seasons
- Nesting Season



On-going warm season pasture research

Rep 1	Calendar	Rep 1	Development	Rep 2	Development	Rep 2	Calendar	Rep 3	Development	Rep 3	Calendar

Research Questions

- Improving our chances for successful establishment
 - Are current seeding rates appropriate?
 - Can we improve stand establishment by using named varieties?
- Maintaining a productive stand
 - Are named varieties or local ecotypes better suited for pasture use?
 - What are the best grazing timings for optimizing yield and quality?

Research Results

A photograph of a cow with a yellow ear tag grazing in a field of tall green grass. The cow is the central focus, with its head down in the grass. The background is a dense field of similar grass.

Development graze

- Lower yields
- Higher protein
- Higher RFQ

Calendar Graze

- Higher yields
- Lower protein
- Lower RFQ
- Yield decline

Ecotype vs. Cultivar

- Ecotype had higher yields
- No difference in forage quality

Case History

David Anderson Farm Highland, WI

Refresh Values

03/13/2013

Landowner Grazing Profile

Landowner Information

David Anderson
5005 County Road II
Highland, WI 53543
608 935 7568 prairewind1@att.net

Property/Parcel Information

County: **Iowa**
Legal Description: Sec. 27 T7N - R2E
Parcel #: Tract 6001 farm 7772
Acres For Grazing: **65.4** Number of Fields: **2**

Land Management Goals:

Land Management Objectives:

Wants to form a bird refuge likes the concept of managed grazing, wants to possible, and generate enough income n investment.
ap):
r of the grazing unit to protect nesting
ent:
out cost share options and eligibility.
nd owner has applied for cost sharing
n.
e, water, inter-seed with compatible
with a neighbor to rent his pasture and
roximately 11 - five acre paddocks.
s in time.

Grazing Objectives

Landowner Involvement Rank: **3**
Maintain and establish fences and paddocks, establish and maintain watering facilities, inter-seed and improve sward and cut or spray invasive weeds/brush.
Livestock types desired: **Dry Cow**
Duration of Grazing: **180**
Term of Contract Desired: **year to year**
Grazing Management Plan: **yes**
Restrictions (Min Plant Res, Access, AUMs):
Landowner wants residual left at 3 inches and area in middle of pasture (9.2 acres) left uncut or grazed from May 1st to July 15th for nesting birds.

Worksheet

Overall):
re 31.1 acres of expired CRP with
wner has contracted to have cut and
Cassville, with bromegrass as the
re that has a lot of brush and invasive
over
ods/Density/Legumes):
e brush/weeds, density poor to good

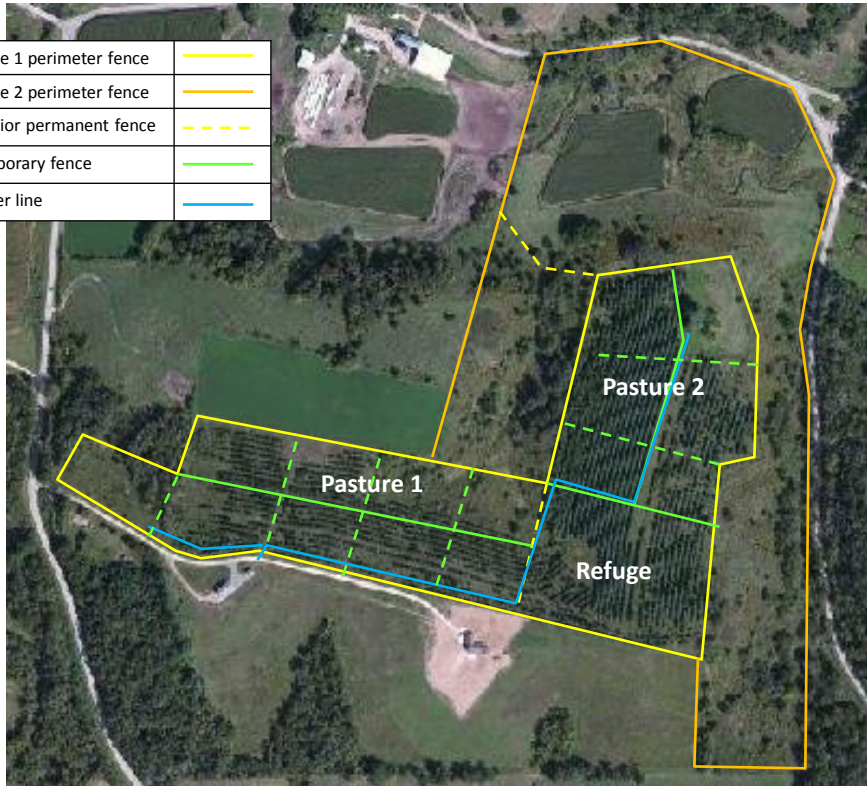
Existing Infrastructure (See map):

Fencing, Watering Systems, Cattle Lanes, etc
Has a EQIP contract with NRCS for cost sharing fencing, watering system and seeding.

Estimated Grazing Potential & Value:

Dry Cow	Grazing Capacity (AU's):	24
0.12	Monthly Forage Need (lbs):	43,200
24	Rental Value (Per Month):	\$512.64
487,884	Hay Price (\$/ton):	\$178

Phase 1 perimeter fence	
Phase 2 perimeter fence	
Interior permanent fence	
Temporary fence	
Water line	



A Grazing-Conservation Partnership



Grazing streamside pastures



Managing pastures for water quality

Strategies for Seasonal Livestock Use

Shonda K. Gilbreth, UVA Extension Grazing Research Specialist
Peggy Conroy, UVA Extension Basin Educator

Grassland birds: Fostering habitats using rotational grazing

Sam Chalmers
Steve Smith
Gary Barber
Dana Smith
Linda Patten



Managing pastures for water quality

Understanding Riparian Areas

Shonda K. Gilbreth, UVA Extension Grazing Research Specialist
Peggy Conroy, UVA Extension Basin Educator

Thank you!

Partners and Funders:

- Cara Carper, Southwest Badger Resource Conservation and Development Council
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- Brian Loeffelholz, WI Dept Ag, Trade & Cons. Protection
- Maureen Rowe, WI Department of Natural Resources
- Gene Schrieffer, University of Wisconsin Extension
- Eric Mark and Steve Richter, The Nature Conservancy
- National Fish and Wildlife Foundation
- WI Grazing Lands Conservation Initiative
- The Pasture Project

• Contact information:

– Southwest Badger RC&D

• <http://www.swbadger.org/managedgrazing.html>

– Southwest Wisconsin Grassland & Stream Conservation Area

• <http://dnr.wi.gov/topic/Lands/grasslands/swgrassland.html>

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