

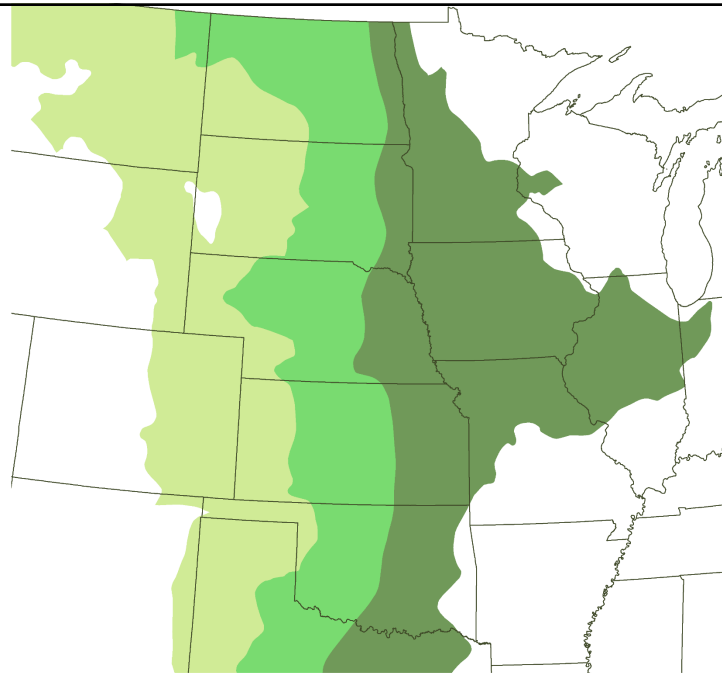


master
conservationist

IOWA STATE UNIVERSITY
Extension and Outreach

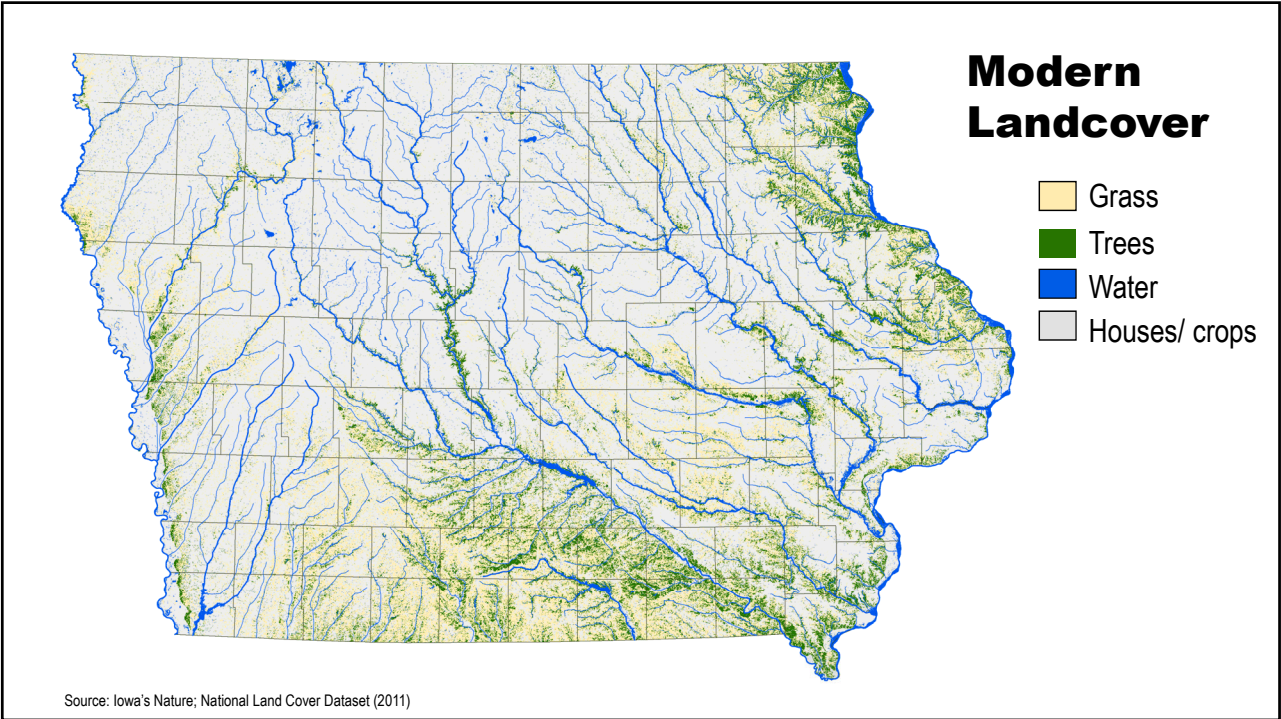
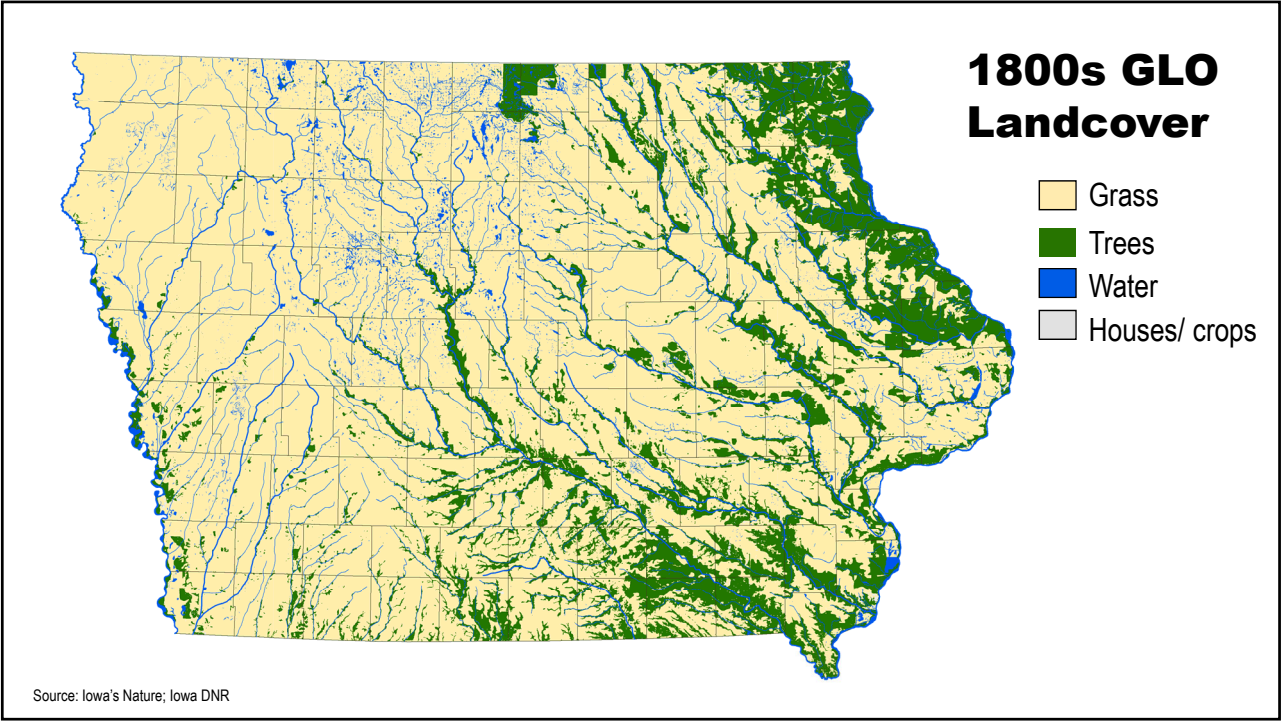
Module 2a

Iowa's Prairie Ecosystems



Source: Source: Iowa's Nature

Shortgrass prairie Mixed grasses prairie Tallgrass prairie

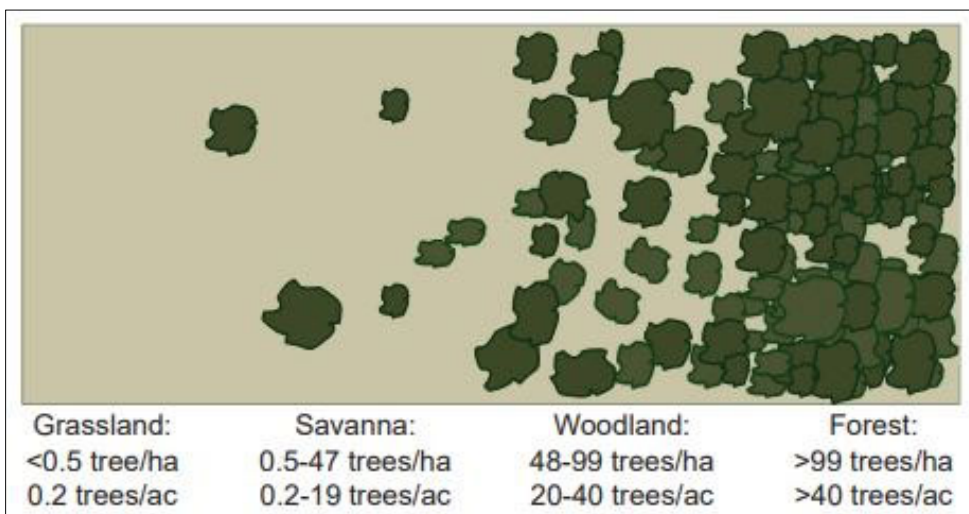


Outline

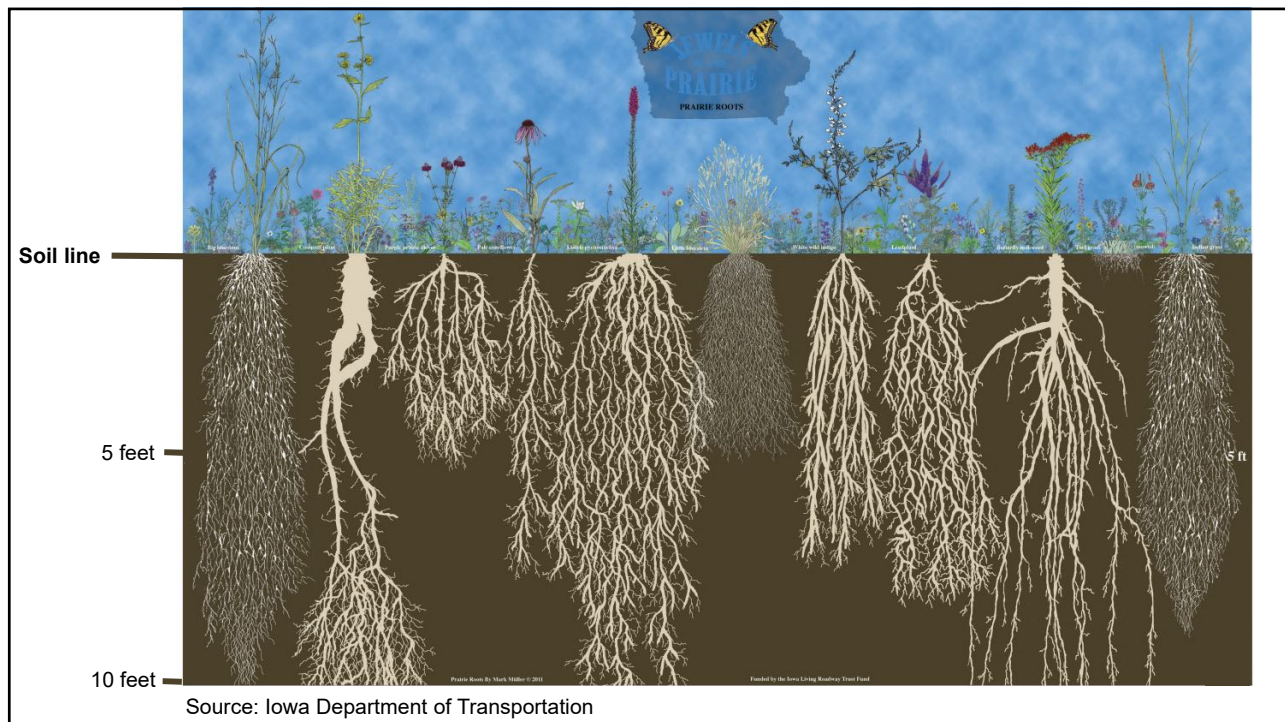
- What is a prairie?
- Biology and Ecology of Prairies
- Conservation and Restoration of Prairie Ecosystems



Prairie: grassland with few to no trees



Source: Anderson and Anderson 1975

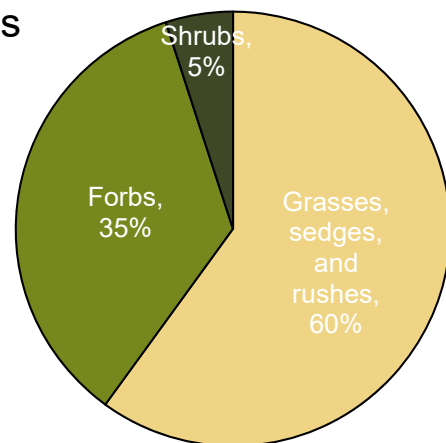


Plants of the Tallgrass Prairie

Prairie: grassland with few or no trees

Plant functional groups:

- Grasses
- Forbs
- Sedges and Rushes
- Shrubs

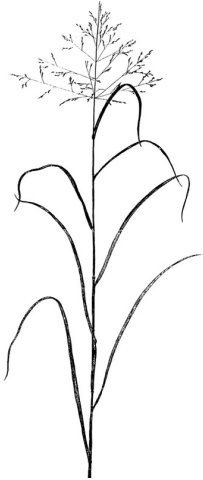


Typical plant composition

The Big Three Grasses



Big Bluestem



Switchgrass



Indiangrass

Photos from
Iowa Prairie
Plants

Forbs

- Think wildflowers!
- Herbaceous flowering plants
- Lack woody structure



Black-eyed Susan



Partridge Pea

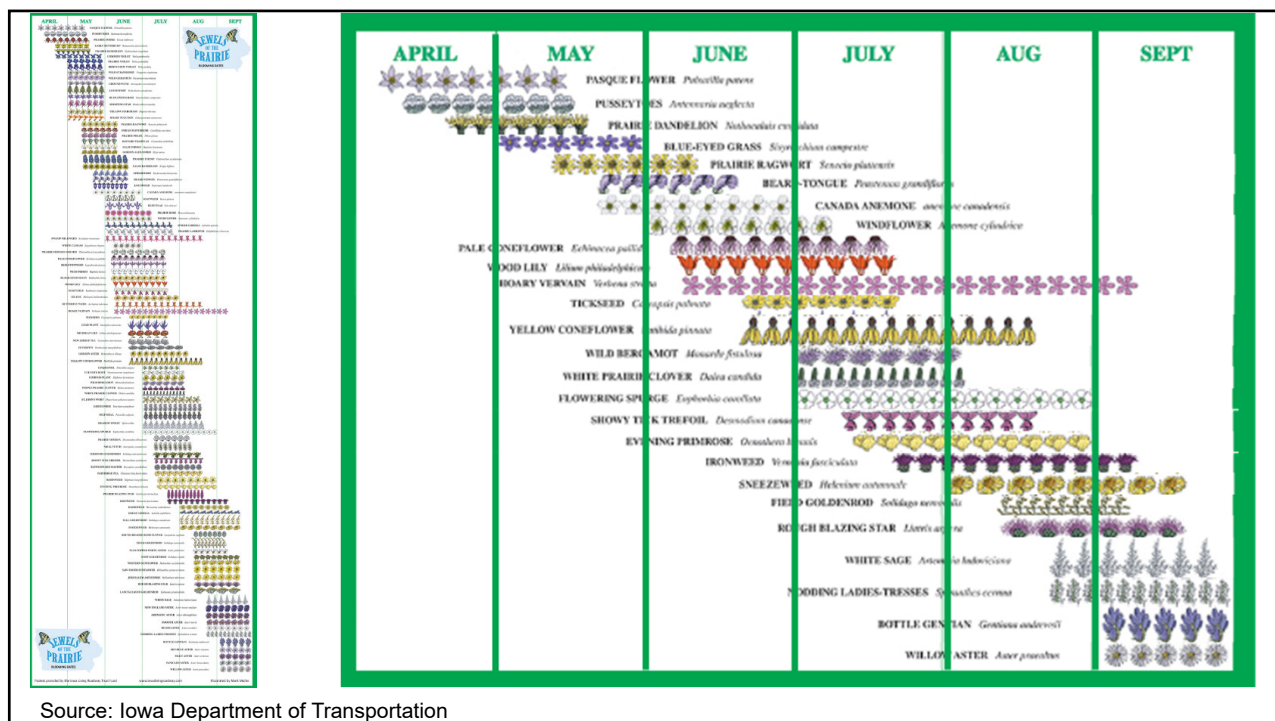


Pasque Flower



Compass Plant

Photos from
Iowa Prairie
Plants



Sedges and Rushes

- Grass-like, herbaceous plants
- Sedges have triangular stems
- Rushes have round stems
- Generally associated with wetter prairies

Photos from
Iowa Prairie
Plants



Shrubs

- Perennial
- Woody structure



Ground Plum



Prairie Rose



Lead Plant

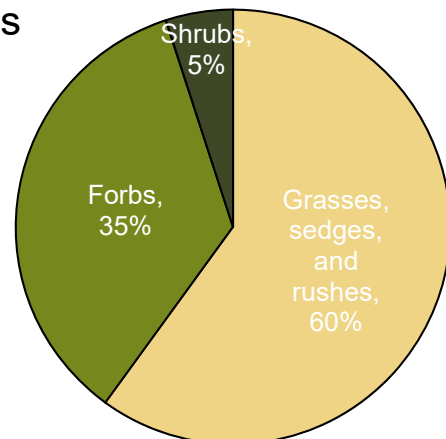
Photos from
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Plants of the Tallgrass Prairie

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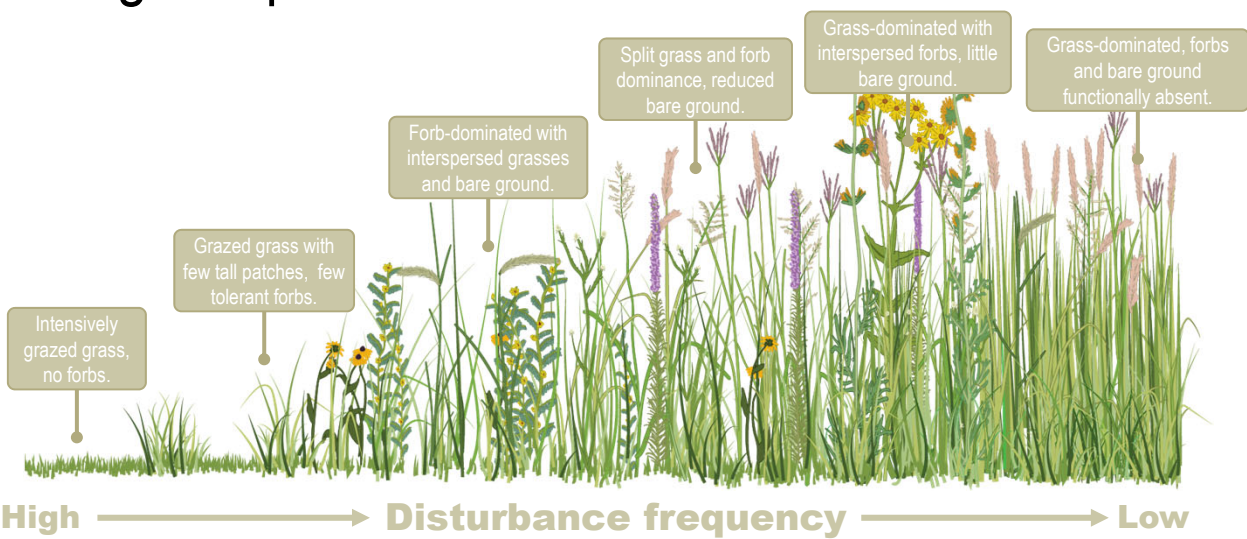
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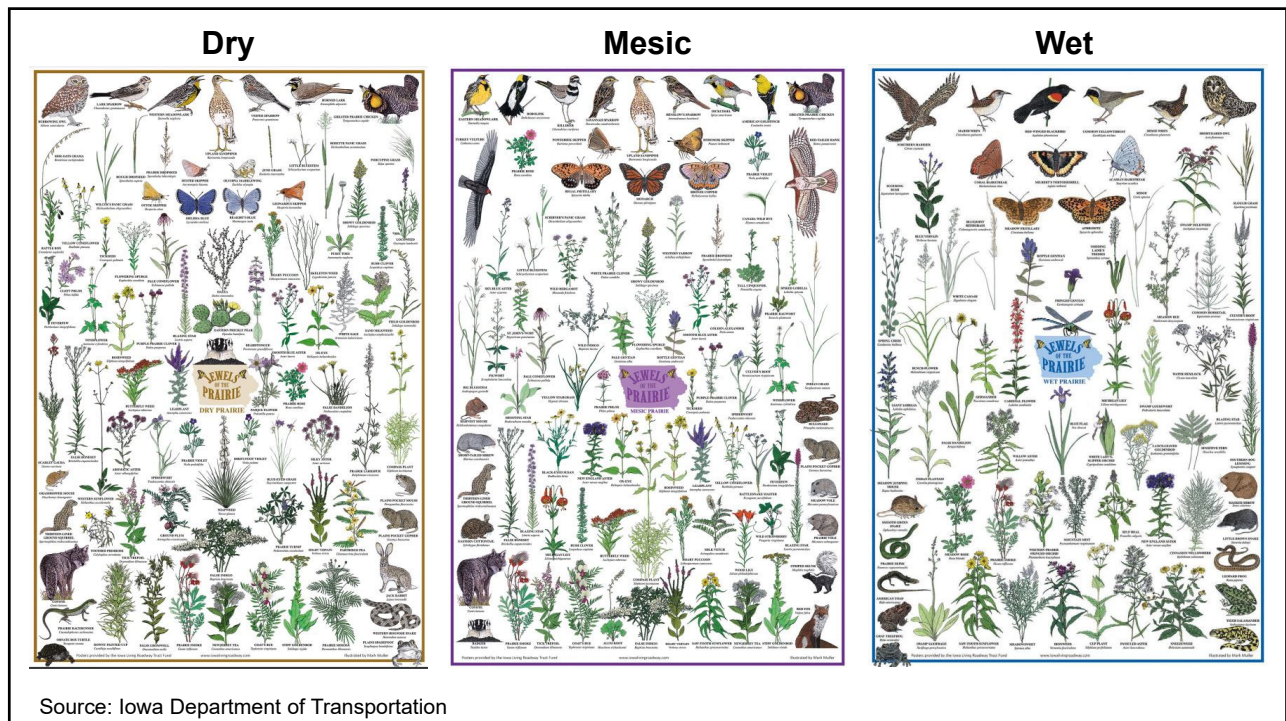
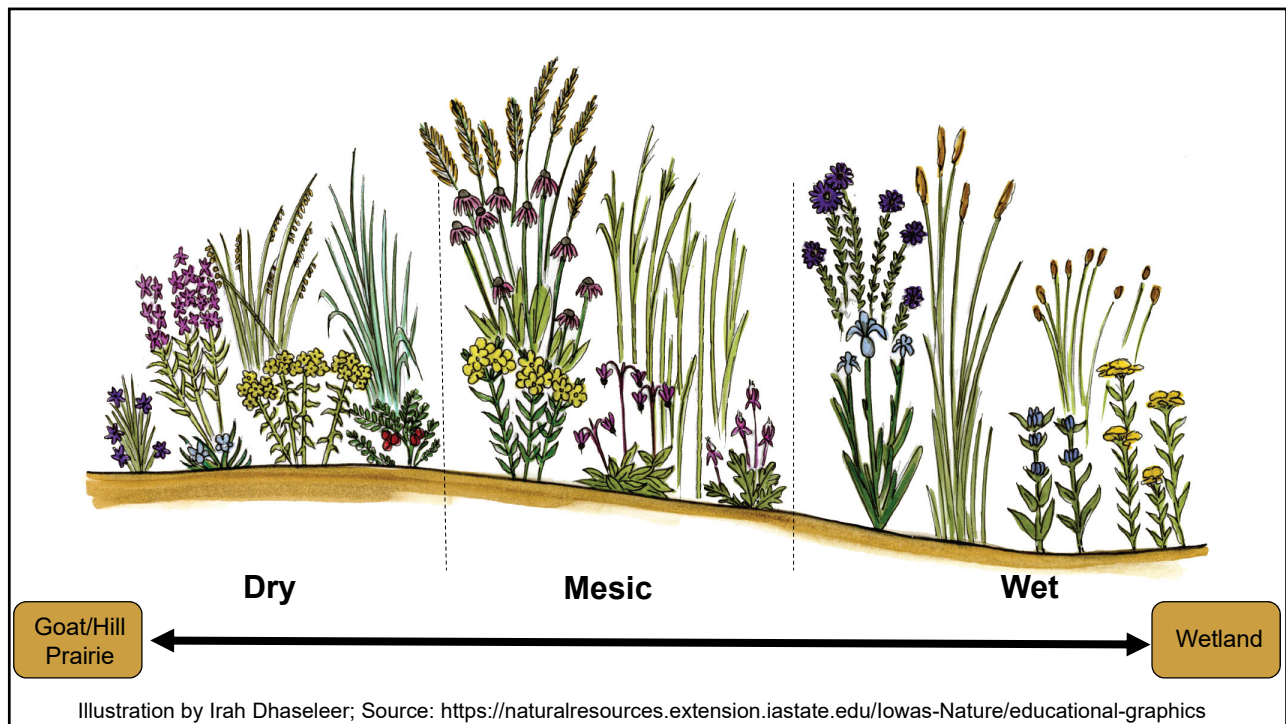


Typical plant composition



Tallgrass prairie mosaic





Prairie Conservation in Iowa

Remnant Prairie



Source: Photo from Iowa Outdoors, 2009

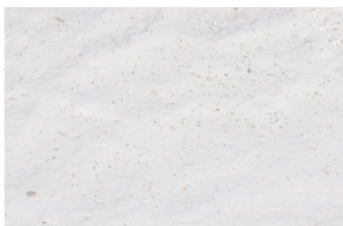
Reconstructed Prairie



Source: Photo by Richard C. Hager/USFWS

Elements of Prairie Reconstruction

- Site preparation
- Seed mix
- Planting
- Establishment



Elements of Prairie Reconstruction

- Site preparation

- Seed mix

- Planting

- Establishment

Timing	Temperature/Time Requirements	Advantages	Disadvantages
Dormant	Soil must be 40° F for minimum of five days	Mimics natural cycle Forbs respond well	Seed mixes with higher grass ratios may not respond as well
Spring	April-June depending on year	Favors cool-season species with early spring seeding Favors warm-season grasses if seeded in mid to late spring	Forbs requiring stratification may not germinate initially
Summer	Mid to late summer	Species that germinate quickly may thrive	Does not provide enough time between germination and winter Increased likelihood for drought related damage
Snow or Frost	Late winter where temperatures are above freezing in the day and below freezing at night	Freezing and thawing provides seed-to-soil contact Fewer opportunities for predators and pathogens to effect seeding	Unknown germination rates Narrow window of opportunity to seed

Source: NDSU Extension Service

Elements of Prairie Reconstruction

- Site preparation

- Seed mix

- Planting

- Establishment



Source: NRCS/SWCS photos by Lynn Betts.

Prairie Conservation in Iowa: Maintenance and Management

Maintenance

- Can apply to the protection and management of establish prairies as well as management of reconstructed prairies

Management Challenges:

- Lack of disturbance
- Invasive Species
- Land Use

Prairie Conservation in Iowa: Maintenance and Management

Management Challenges:

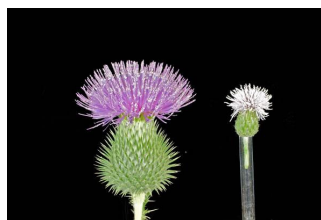
- Lack of disturbance
- Invasive Species
- Land Use



Prescribed Fire – Photo by Bill Schulte



Photo by Iowa Roadside Management



Canada Thistle – Photo from Iowa State University Integrated Crop Management

Prairie Conservation in Iowa

Remnant Prairie

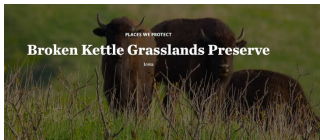
Reconstructed Prairie



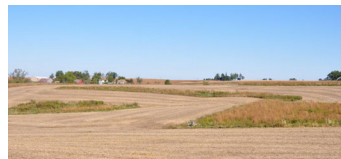
Source: Photo from Iowa
O



Photo by Iowa Roadside Management



Source: Photo from The
Nature Conservancy



Prairie Strips - Photo by Conservation Media Library



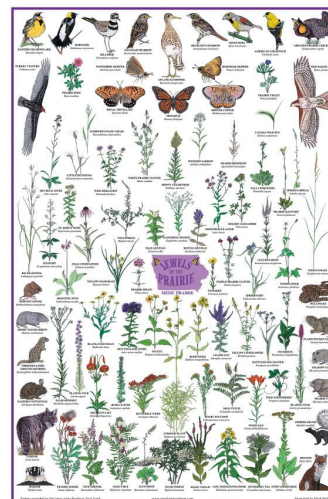
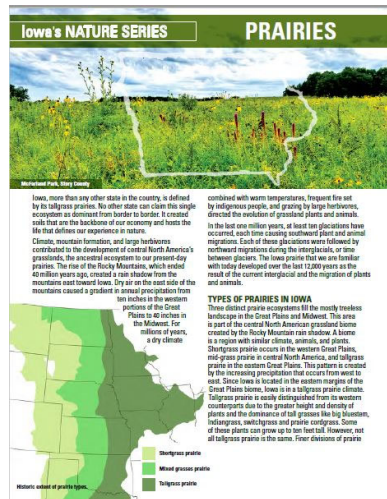
Source: WildOnes.org



Source: Photo by Richard C.
Hager/USFWS

EVERYWHERE

Learn more!



Special thanks to Dr. Lisa Schulte-Moore for help developing this lecture and material.