

# Riparian Areas- What are they Worth?

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# What is a Riparian Area?

- The band of vegetation that occurs adjacent to the stream bank
- Transitional zone between the wetlands and upland areas



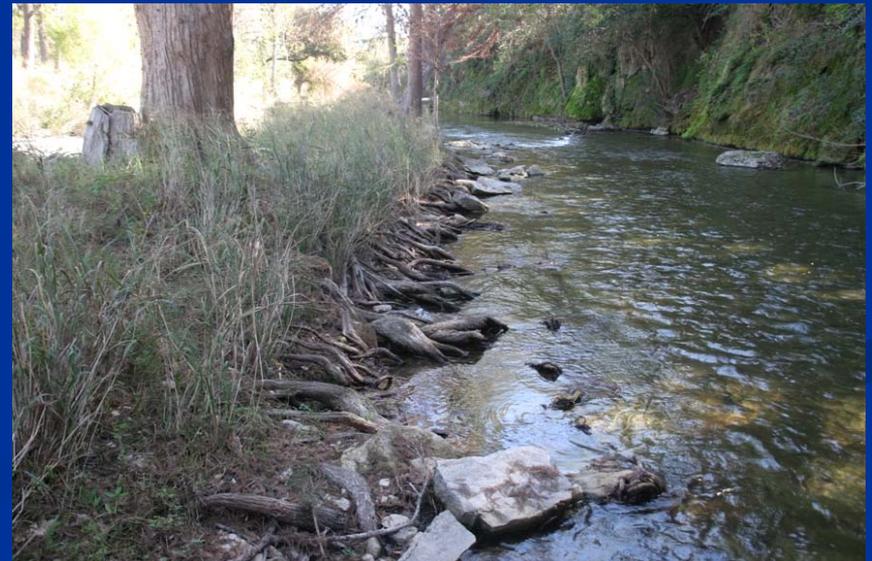
# Characteristics of a Healthy Riparian Zone:

- **Diverse collection of native vegetation that are normally found in close association with water. Many of these plants have deep roots that bind the soils of the streambank and protect against erosion**



# Benefits of Healthy Riparian Areas:

- Provide important habitat for wildlife and fish
  - Shade, food, cover
- Improve water quality
  - Filter & catch sediment
  - Assimilate pollutants
- Streambank stability
  - Reduce velocity of flood water
  - Armor banks



# Benefits of Healthy Riparian Areas:

- Sustained stream flows
  - Store water in banks and floodplain
  - Prolong base flow
  - Recharge aquifer



# Benefits of Healthy Riparian Areas:

- Important recreational resource for anglers, hunters, canoeists, etc.



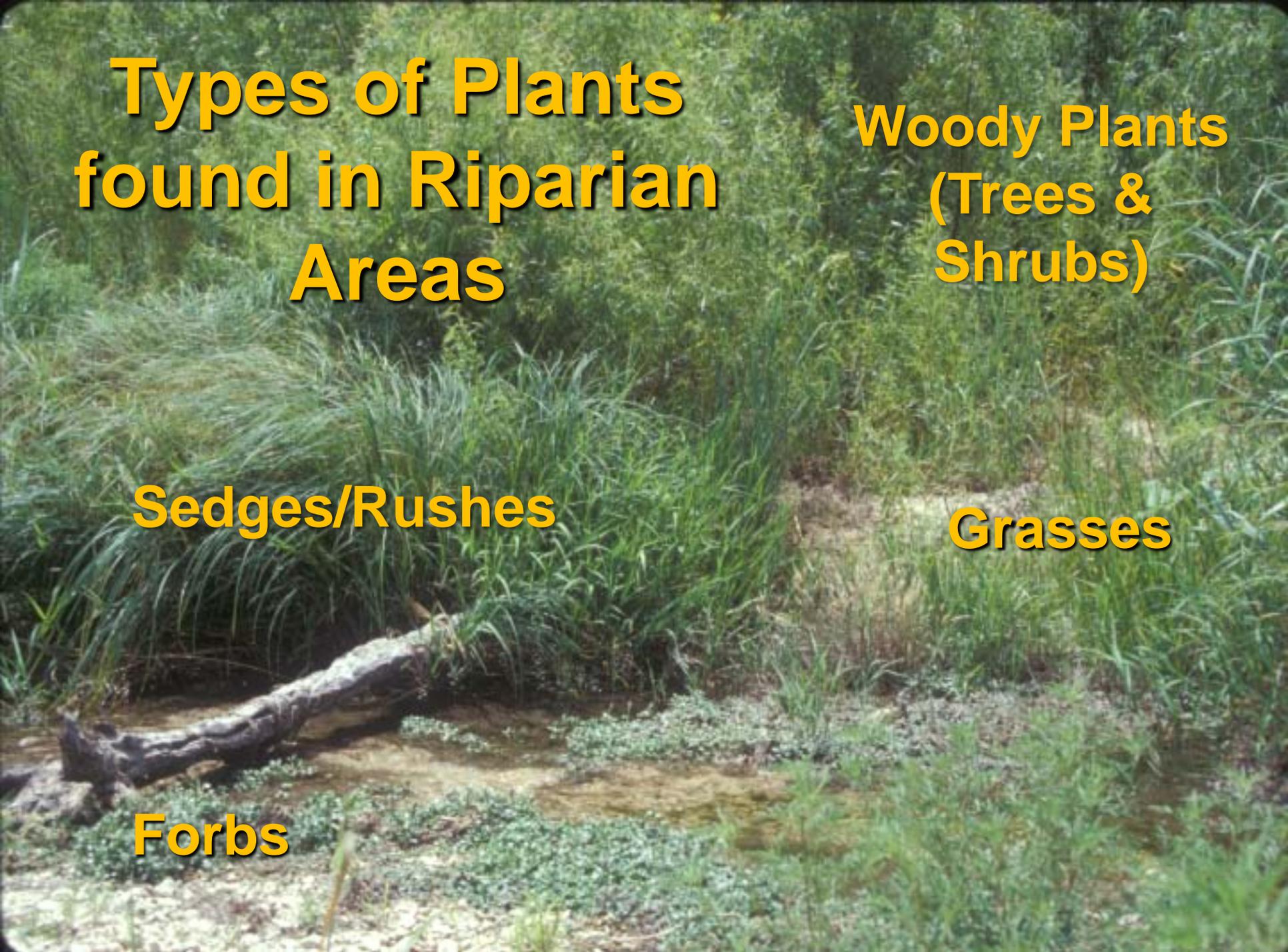
# Types of Plants found in Riparian Areas

Woody Plants  
(Trees &  
Shrubs)

Sedges/Rushes

Grasses

Forbs



# Functions/Roles of Riparian Vegetation

Erosion control



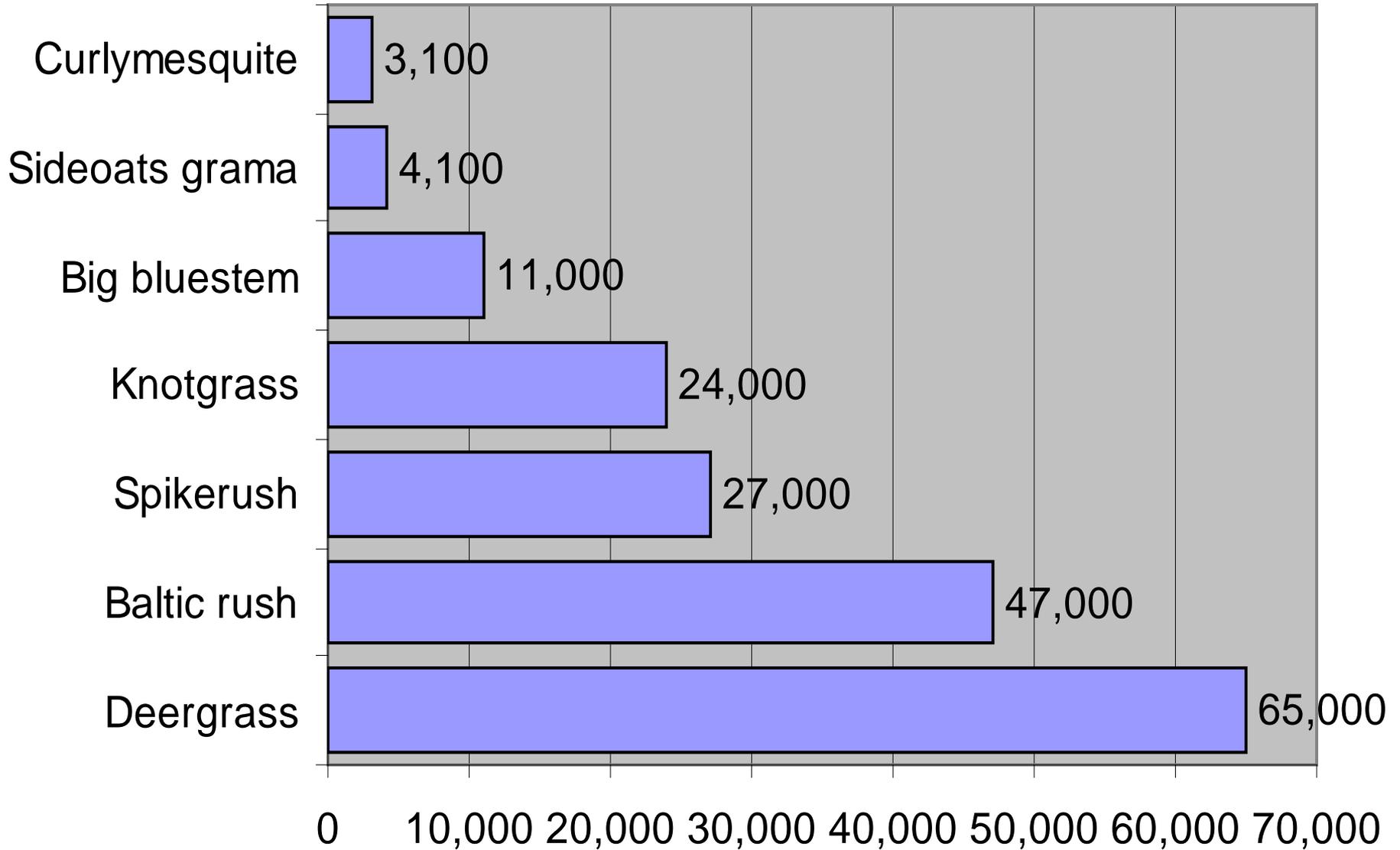
Sediment trap



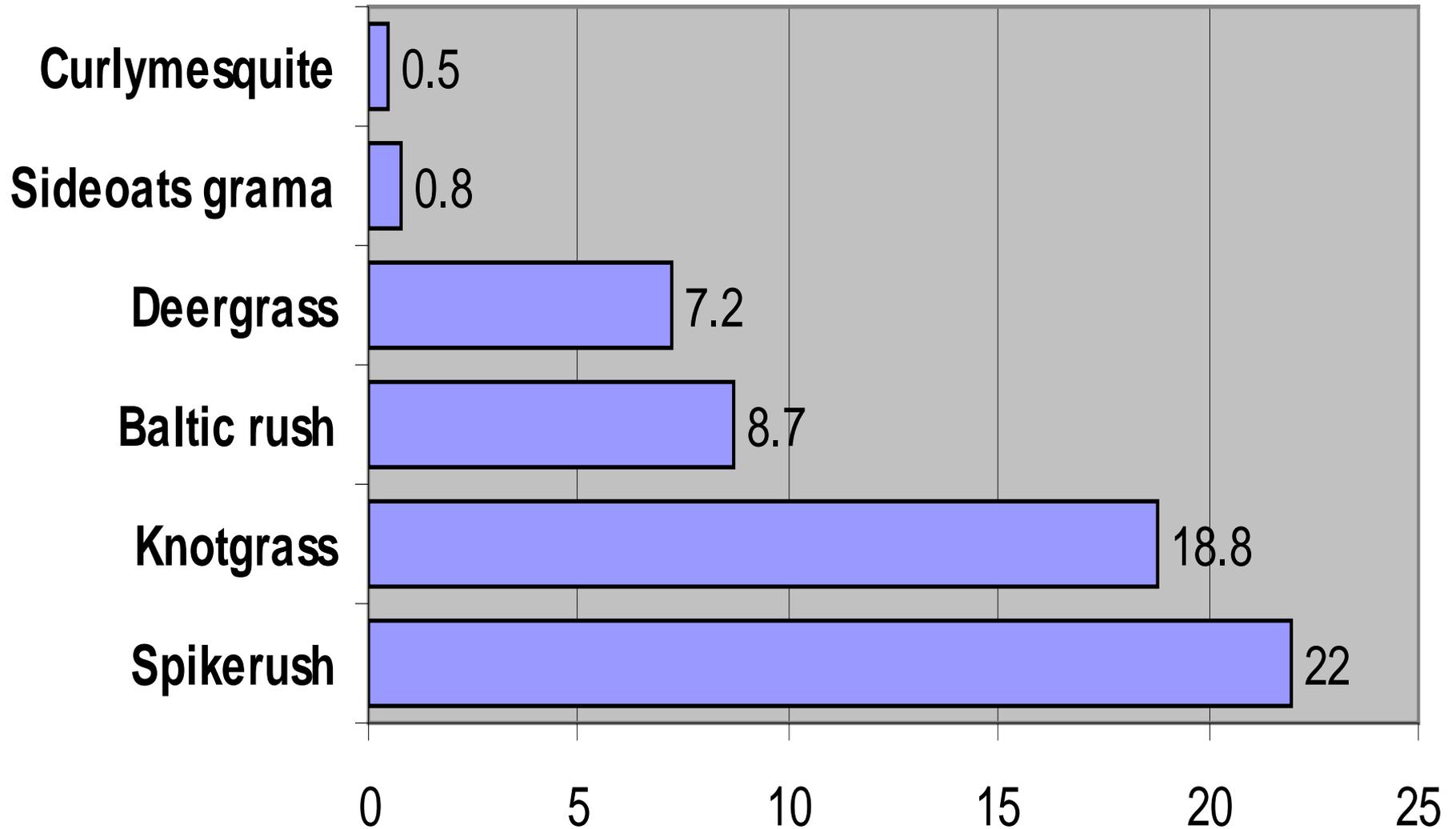
Store water



## Rootmass; Pounds per Acre



# Root Length; Miles per Cubic Foot





# Recognizing an Impaired Riparian Zone:

- Lack of vegetation, exposed soil, and eroding banks
- Presence of vegetation more typical of upland sites
- Sites dominated by exotic or introduced species
- Park-like settings or ones that have been continuously grazed



# How Does a Riparian Zone become Impaired?

- Altered stream flow
- Overgrazing or overbrowsing
- Construction along stream banks
- Removing vegetation
- Planting introduced species



# What Can Happen when a Riparian Zone becomes Impaired?

- Stream bank stability problems
- Reduced wildlife habitat
- Degraded fish habitat
- Silt and pollutants can more readily enter the stream



# What can be done to improve or maintain riparian zone health?

- **Maintain or restore appropriate native vegetation**
  - Rotational grazing
  - Smaller recreational footprint
  - Replant with a mixture of native trees, grasses, and shrubs



# Bear Creek Riparian Restoration

Central Oregon  
3500', 12" Rainfall



**Intermittent flow – No fish**

**Accelerated erosion - Sediment loss**

**Wet riparian area (sponge) = 4 acres / mile**

**Water storage = 1.5 ac ft / mile**



**1977**

# **A Change in Grazing Management**

- 1977 – 1984:** No grazing / Reduced grazing to jump-start recovery
- 1985 – Present:** Rotational grazing during late winter to maintain adequate riparian vegetation



1983



1986



June 1987



Aug 1987



1988

- Perennial flow; prime aquatic habitat
- Riparian “Sponge” = 12 Ac/Mile (was 4 acres)
- Water Storage = 2,100,000 Gal/Mile  
(net gain of 4.9 ac ft of  
storage/mile – was 1.5 ac ft)
- 10x Increase in livestock forage

**1988**



# Riparian Chain Reaction

## **Adequate Vegetation:**

**Protects banks from excess erosion**

**Dissipates energy and slows the velocity of floodwater**

**Sediment dropped**

**Sediment trapped and stabilized**

**Floodplain / riparian sponge is enlarged**

**Increased groundwater recharge**

**Base-flow is sustained over time**



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