

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



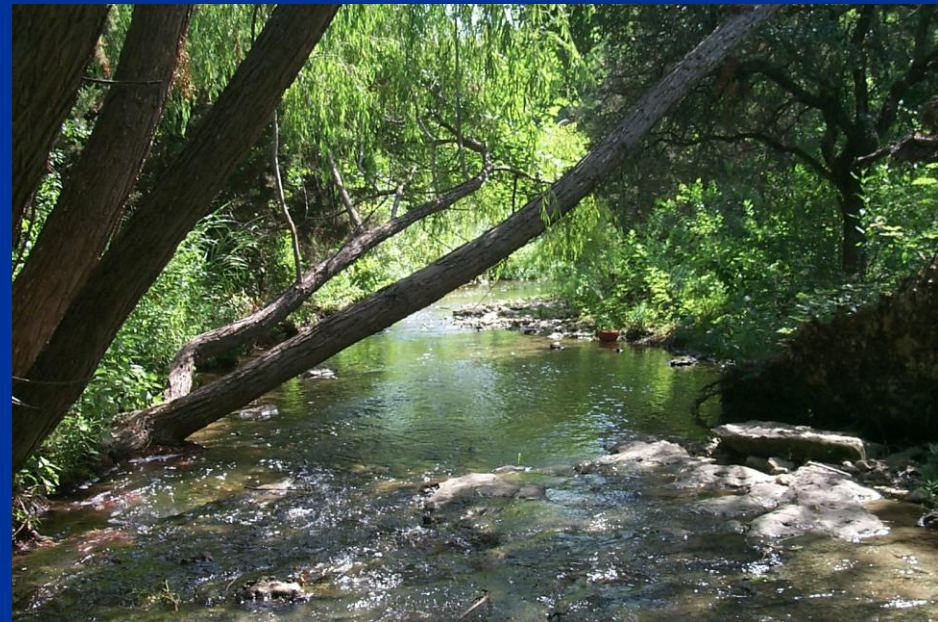
Characteristics of a Healthy Riparian Area:

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



Benefits of Healthy Riparian Areas:

- Provide important habitat for wildlife and fish
 - Food, shelter, shading, travel corridors
- 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:
 - Anglers
 - Hunters
 - Canoeists
 - Hikers
 - Birdwatchers



Types of Plants found in Riparian Areas

Woody Plants
(Trees &
Shrubs)

Sedges/Rushes

Grasses

Forbs



Functions/Roles of Riparian Vegetation

Erosion control



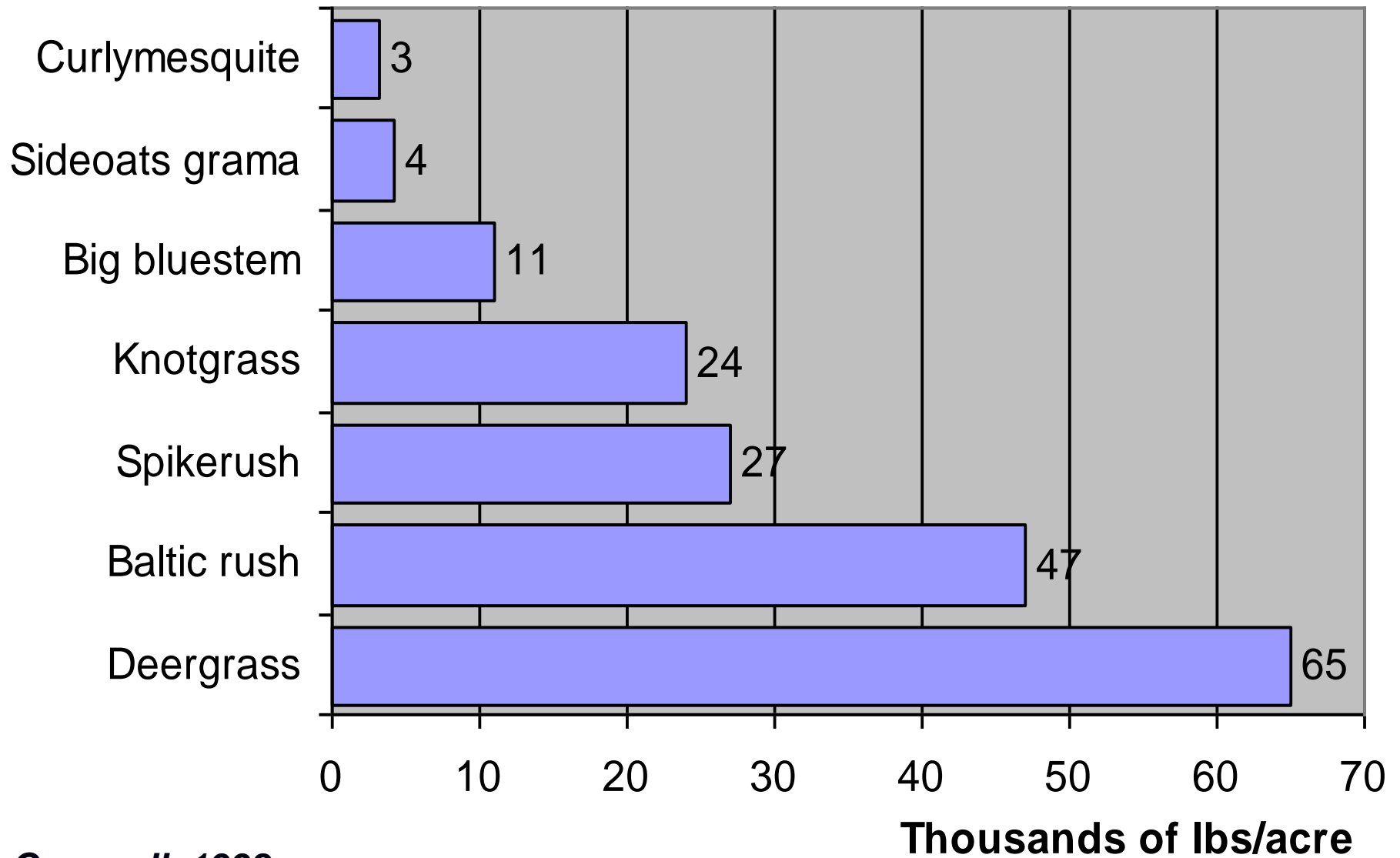
Sediment trap



Store water

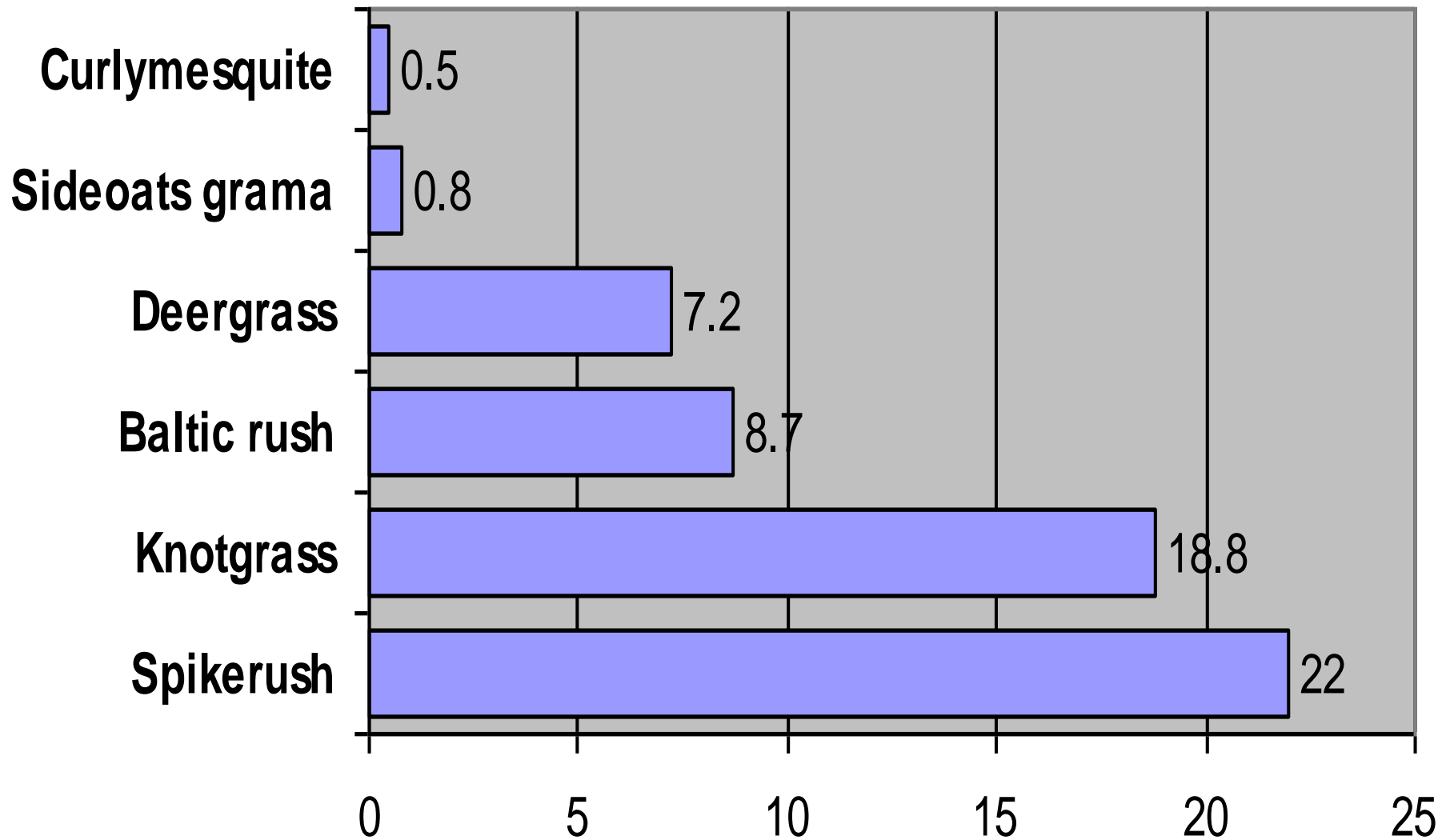


Rootmass; Pounds per Acre



Cornwall, 1998

Root Length; Miles per Cubic Foot



Cornwall, 1998



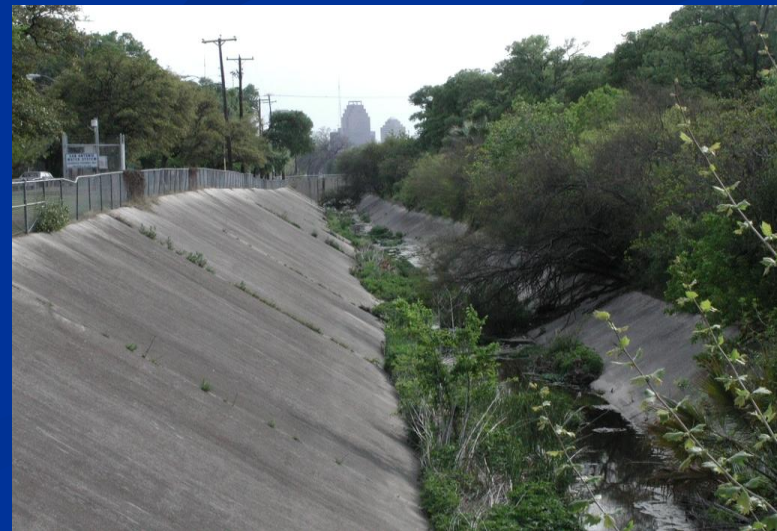
Recognizing an Impaired Riparian Area:

- 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 Area become Impaired?

- Altered stream flow
- Overgrazing or overbrowsing
- Construction along stream banks
- Removing vegetation
- Planting introduced species
- Channelization and dam construction



What Can Happen when a Riparian Area becomes Impaired?

- Stream bank stability problems
- Reduced wildlife habitat
- Degraded fish habitat
- Silt and pollutants can more readily enter the stream
- Diminished water quality
- Increase in flooding events due to decreased infiltration
- Reduced aesthetic value



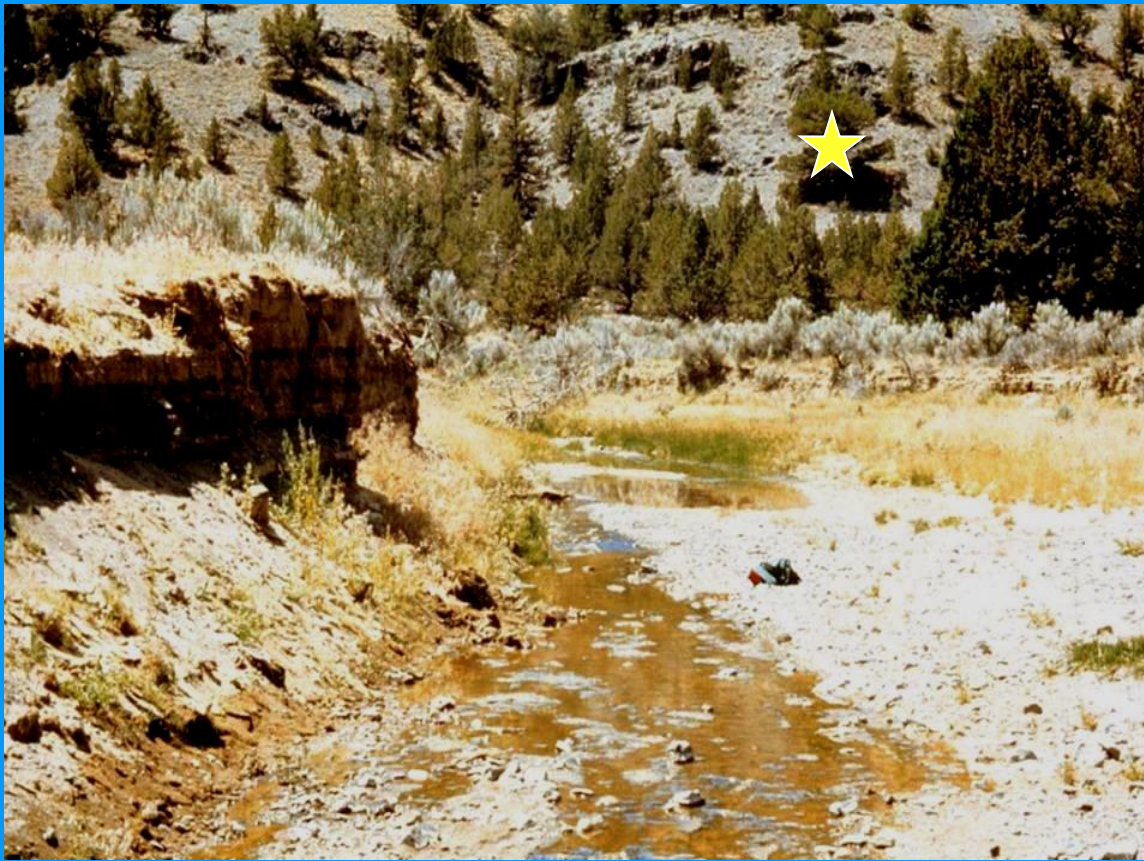
What can be done to improve or maintain riparian area health?

- **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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