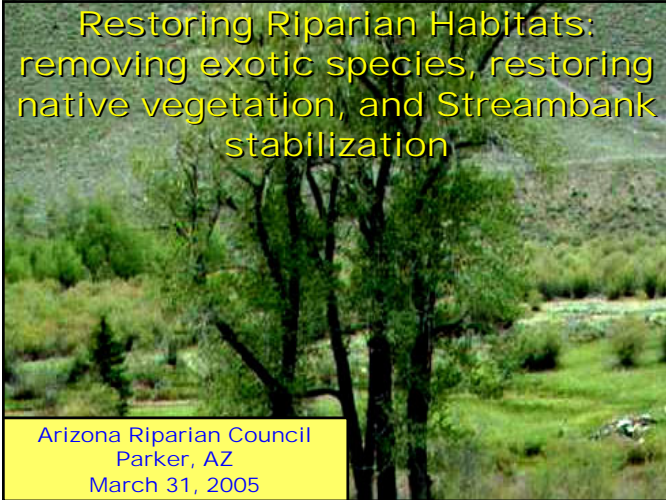


Restoring Riparian Habitats:
removing exotic species, restoring
native vegetation, and Streambank
stabilization



Arizona Riparian Council
Parker, AZ
March 31, 2005

Riparian Ecology and Restoration

- The information in this workshop was compiled from numerous requests from conservationists and professionals in the field.
- The emphasis of this workshop is riparian vegetation and bioengineering erosion control methods.

Riparian Ecology and Restoration

- The various introductory presentations are intended bring everyone up to the same level before we start talking about streambank bioengineering erosion control treatments.
- Some of you will be at a higher knowledge level on rivers than others, so please bear with us.
- Without a correct basic understanding of river dynamics and ecology, it will be very difficult to install streambank bioengineering treatments successfully.

Riparian Ecology and Restoration

- Our intent is to make you aware of various alternative techniques to hard structures.
- These techniques will NOT always replace hard structures.

Riparian Ecology and Restoration

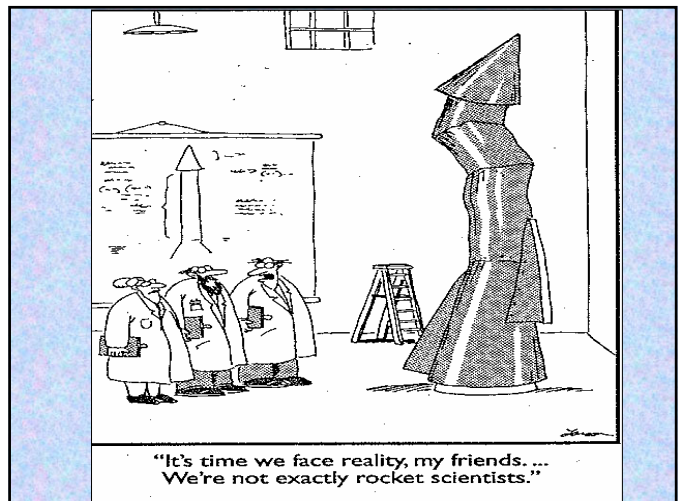
▪ **Required Disclaimers**

- **Additional information on how and where to apply these techniques can and should be obtained from engineers, hydrologists, soil scientists, and other professionals.**
- **This workshop does not address water quality monitoring, regulatory, and permit requirements.**

Riparian Ecology and Restoration

▪ **Required Disclaimers**

NOTE: Always obtain ALL required permits before beginning any construction.





What is a Riparian Zone?

- **Riparian zones are the areas between aquatic and upland habitats.**
- **Long linear areas along rivers and streams that are occasionally flooded by those bodies of water**

What is a Riparian Zone?

- **Maybe dry for portions of the growing season.**
- **Vegetation adjacent to aquatic habitats (lakes, reservoirs, basins, bogs, etc.) is considered riparian.**



Riparian zones can be identified by:

- **Vegetation that requires free and unbound water or conditions more moist than normal.**
- **Saturated Soil Conditions**

What is a Riparian Zone?

Simply, riparian areas are where water saturates the soil more than adjacent areas and water loving vegetation is concentrated.

Why are Riparian Zones Important?

- Provide erosion control by regulating sediment transport and distribution.
- Enhance water quality
- Produce organic matter for aquatic habitats.
- Provides wildlife habitat.

Why are Riparian Zones Important?

- Indicators of environmental change. (They are the Canaries of the coal mines)
- Sensitive to variations in the environment and the hydrologic cycle.
- Among the most diverse, dynamic, complex biological systems on earth.

Why are Riparian Zones Important?

- Comprise only a small proportion of the total landscape.
- Recognized as fully functioning, dynamic ecosystem only in the last 15-20 years.

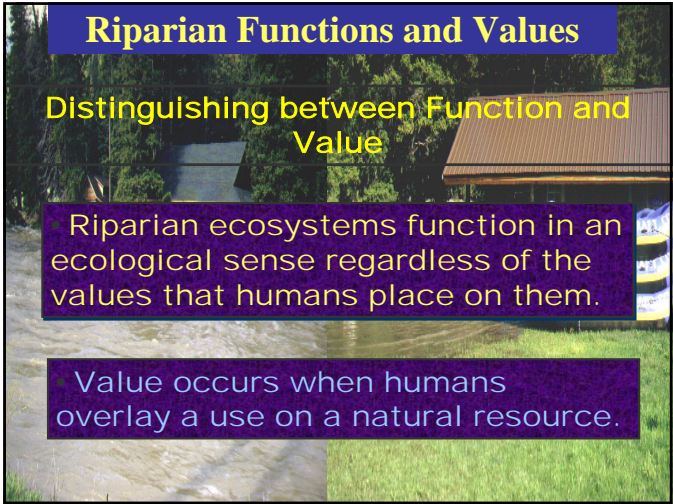
The most obvious controlling influence on the Composition, Structure, and Diversity of Riparian Plant Communities IS?

FLOODING

Magnitude,

Frequency,

and Duration



- Riparian Ecological Functions**
- Protect Banks from erosion**
 - Attenuate flood peaks**
 - Provide habitat for fish and wildlife**
 - Filter nutrients**
 - Maintain water quality for aquatic systems**
 - Sediment transport**
 - Sediment repositories**
 - Stabilize Stream channels**

- Riparian Human-Derived Values**
- Timber, pulpwood, and other products**
 - Flood Storage and Desynchronization**
 - Regulation of Sediment Transport**
 - Enhancement of Water Quality**
 - Aesthetic Beauty of the Area**
 - Recreational Sites**
 - Socioeconomic Benefits**
 - Agricultural Production**

Questions?



Senior Road Rage does not require a gun.
Just a beer and some patience.