

# Healthy Soil in Riparian Systems

## How do we define it, how do we manage for it?

Charles Peacock, Soil Scientist, USDA-NRCS, Grand Junction, Colorado

**Soil Health - NRCS definition: The continued capacity of the soil to function as a vital living ecosystem that sustains plants, animals, and humans.**

### Primary differences in soils, riparian vs. upland/agland

- Flooding regime – a definitive characteristic
- Riparian soils are typically highly stratified
- Water Table usually within 2 m. of surface with associated vegetation and possibly hydric soils
  - Significant amnt. of agland may have same (exc. veg)
  - Western landscapes - more contrasted
- Landscape position? (in most cases), definitive
- Use & management, Aglands are intensively managed
  - Portions of riparian areas may be intensively used and managed (recreation)



### Characteristics of degraded riparian soil

- Desiccation/drying (lowered WT)
- Erosion, sloughing, undercut banks
- Decreased SOM
- Encroaching upland veg. or bare soil
- Lower infiltration?
- Compaction?



### NRCS 5 Healthy Soil Management Principles (aglands)

- Keep live roots in the ground as long as possible
- Diversify (cool/warm season, grass/broad leaf)
- Keep it covered (no bare soil)
- Reduce or eliminate tillage
- Integrate grazing animals if possible

"As to methods, there may be a million and then some, but principles are few. The [person] who grasps principles can successfully select his own methods. The [person] who tries methods, ignoring principles, is sure to have trouble."

Harrington Emerson

### Riparian Healthy Soil Management Principles... ?

- Practice SH principles on surrounding aglands
- Restore/maintain Water Table
- Manage for high diversity
- Restore as (new?) ecological context dictates
- If grazing – manage intensively (closely)
- **What would you change or add? →**

