

# Field-Riparian Corridor

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*Exploring stream corridors since 1978*

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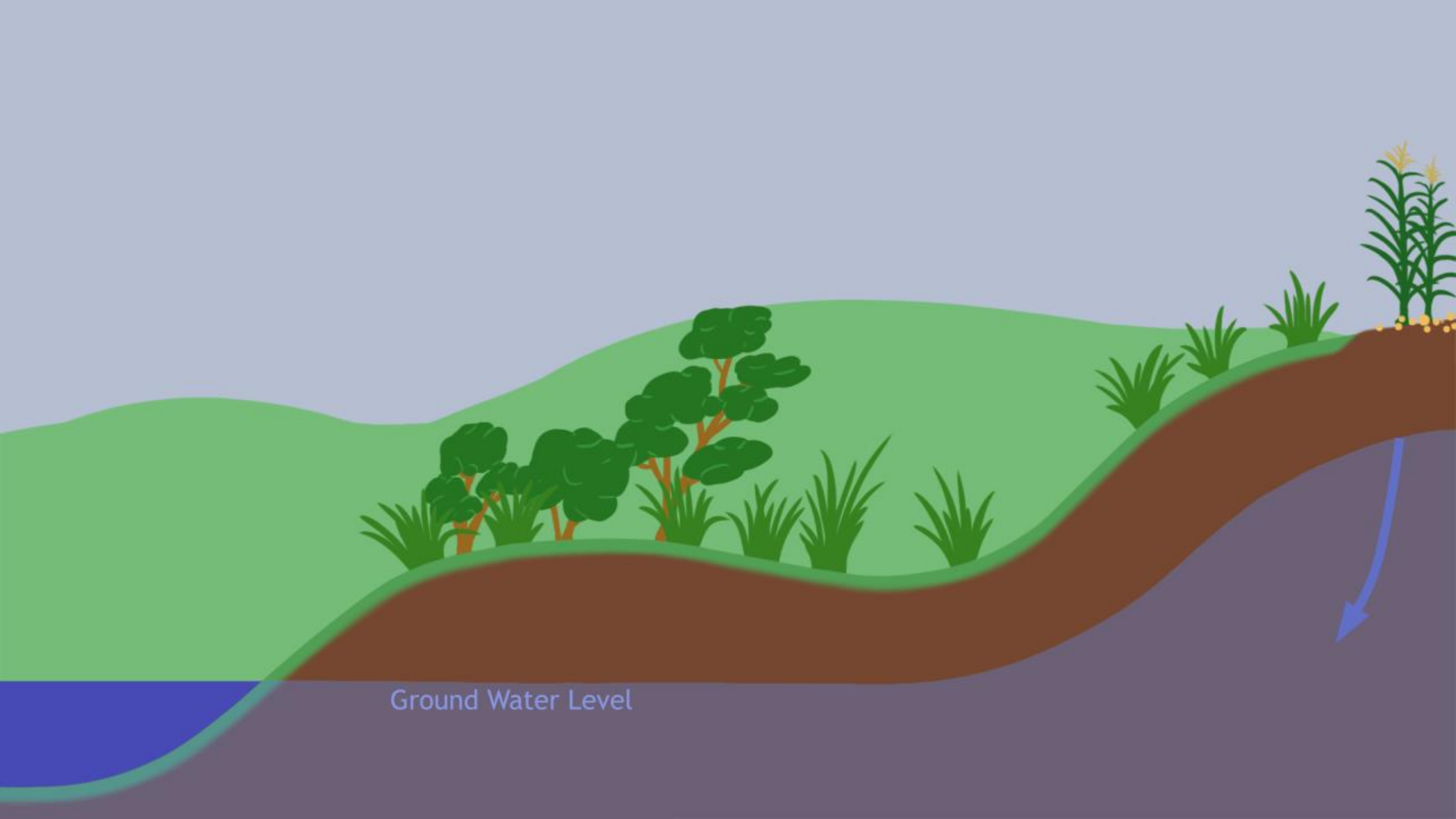
Direct Precipitation



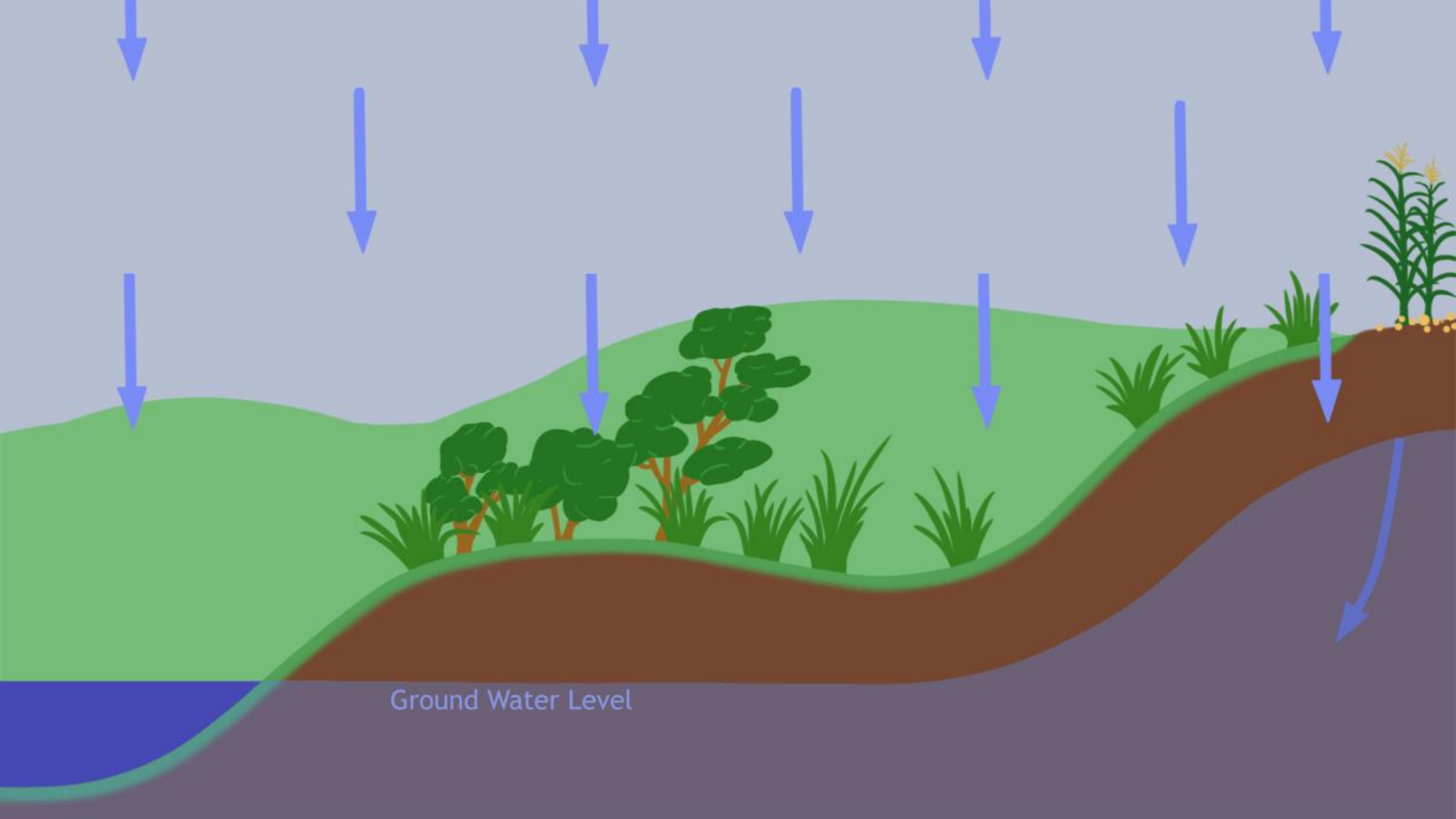
Field Runoff

# Scale of Water Movement

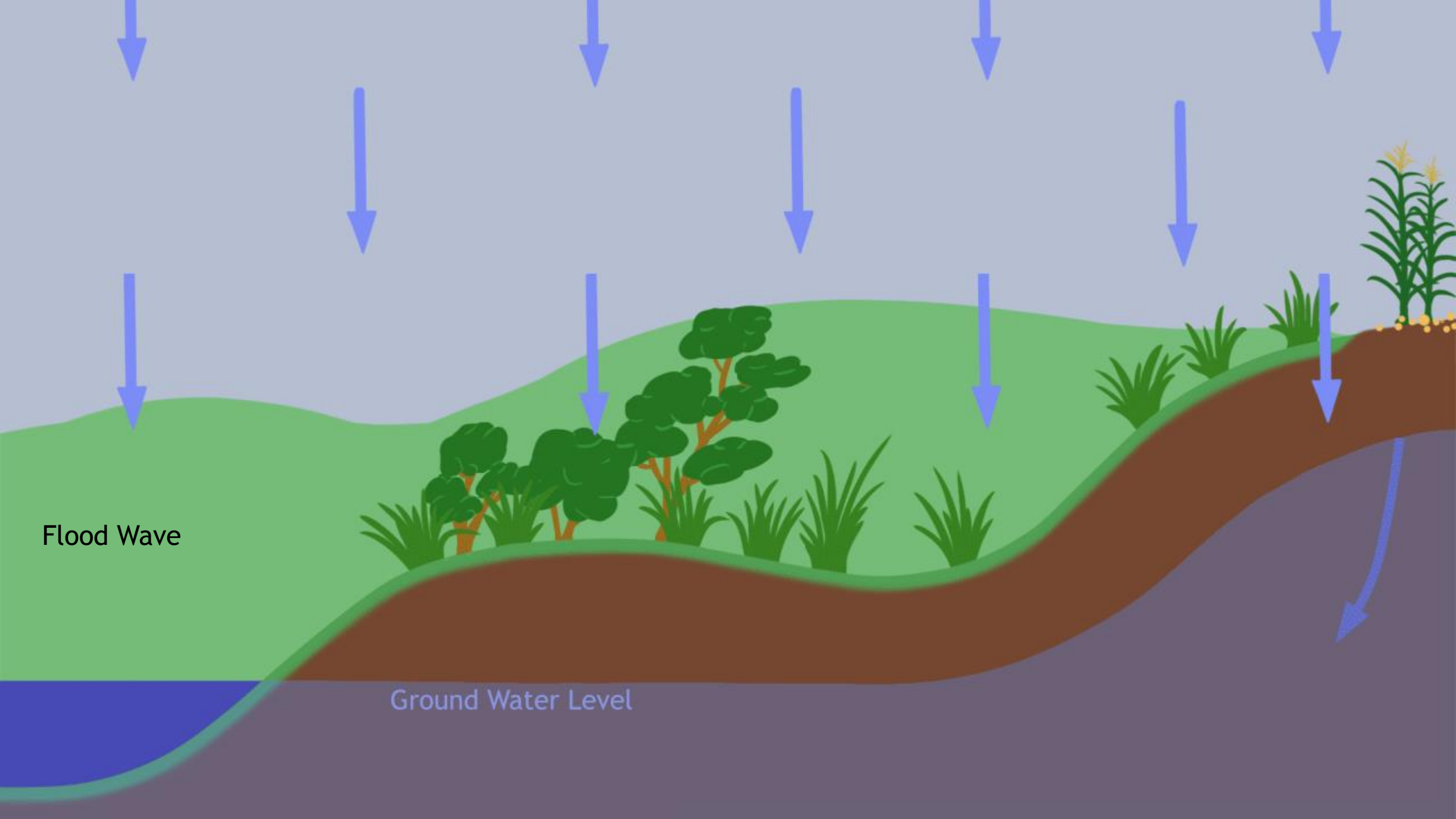
- ▶ Point scale: Rain drop - falls on the land
- ▶ Field scale: Typical farm field - runoff
- ▶ Small Watershed scale: Field connected to a ditch or headwater stream
- ▶ Watershed scale: Riparian corridor with a valley shape
- ▶ Basin scale: Minnesota River - draining many rivers - large/wide corridor



Ground Water Level



Ground Water Level

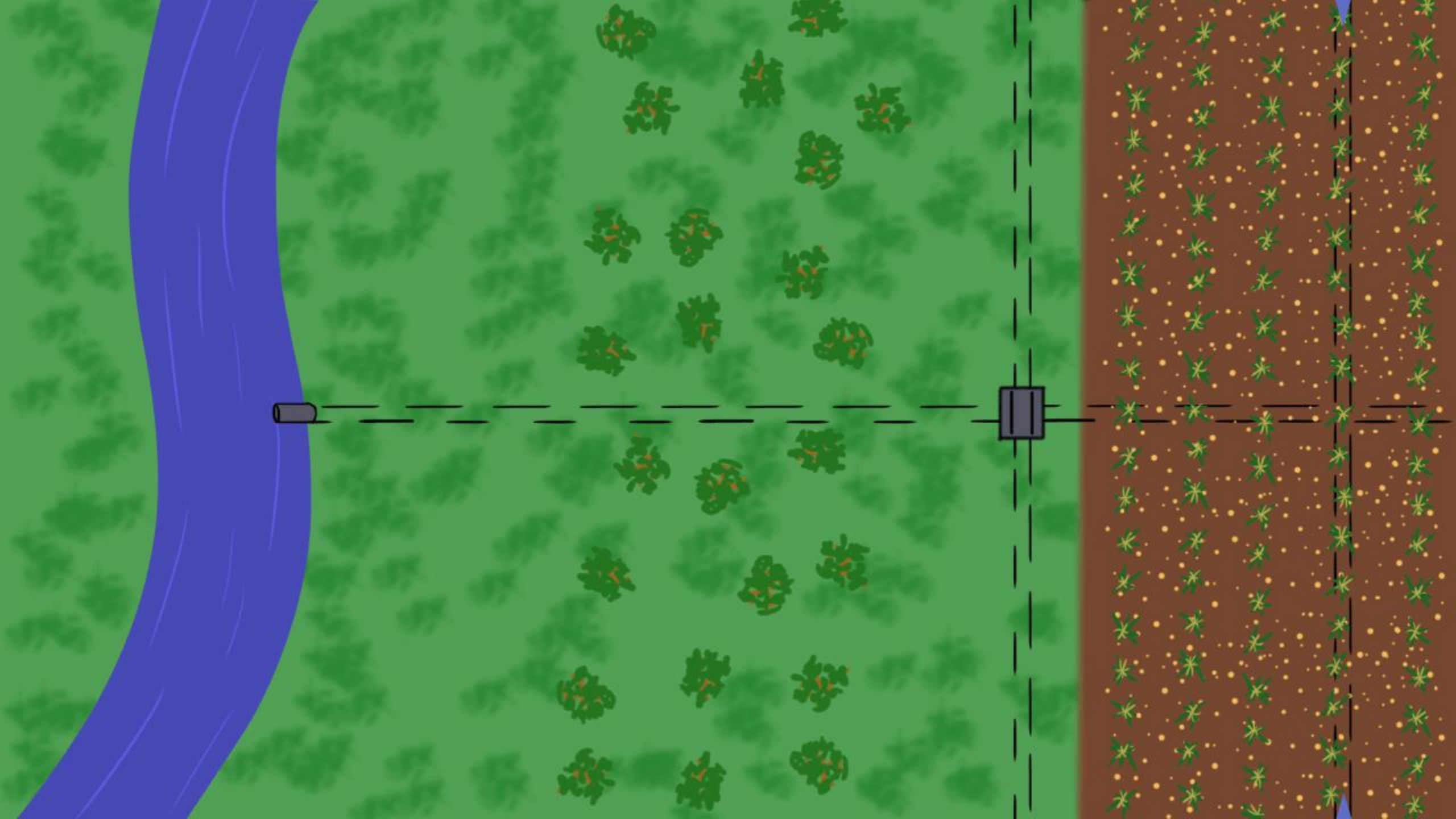


# My Research: Understanding connectivity between scales

- ▶ How can we better understand both quantity and quality
- ▶ There many field scale Best Management Practices
- ▶ My goal: develop new innovative BMPs between the field and flowing water; Examples:
  - ▶ 1) Riparian vegetative management,
  - ▶ 2) Natural and created oxbow storage,
  - ▶ 3) Surface/subsurface water exchange (nitrate reduction)









Trench with Woodchips

Ground Water Level





Oxbow with Woodchips

Underground Piping



Ground Water Level

Oxbow

# Research needs

- ▶ Evaluate performance of Buffer Law - offer improvements
- ▶ Examine “Effects of Cumulative Water”; downstream flood wave
- ▶ Improve decision support tools - (BWSR supported PTMApp), then
- ▶ Transfer knowledge and guidance to Local units of Government:  
“One Watershed - One Plan”

**Suggestion: Create a means for  
BWSR to fund:**

- 1) riparian BMP research and**
- 2) riparian BMP effectiveness over time**