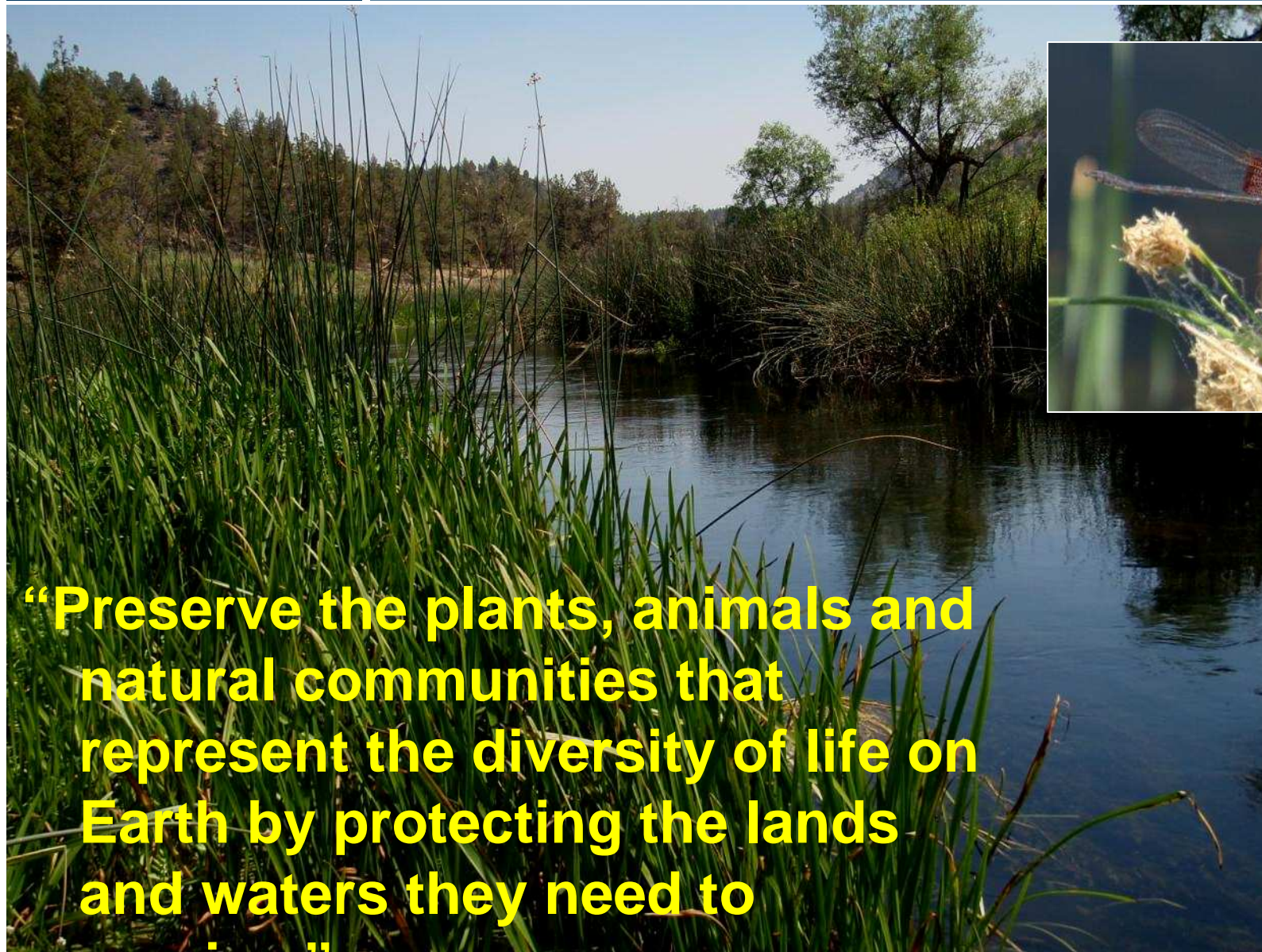






## The Nature Conservancy: Our Mission



**“Preserve the plants, animals and natural communities that represent the diversity of life on Earth by protecting the lands and waters they need to survive.”**



## Why Does TNC Care About Groundwater?

- Ecosystems and Groundwater are Connected
- Groundwater Conditions Affect:
  - Streams and Rivers
  - Riparian Areas
  - Wetlands





## Balancing Needs

- Reality of California:
  - People Need Water
  - Agriculture Needs Water
  - Water is Highly Managed





## Sustainable Water for People and Nature



Solutions for  
Ecosystems  
Must work for People



# Groundwater Affects Stream Flow



# Groundwater Affects Stream Flow

“Gaining Stream”

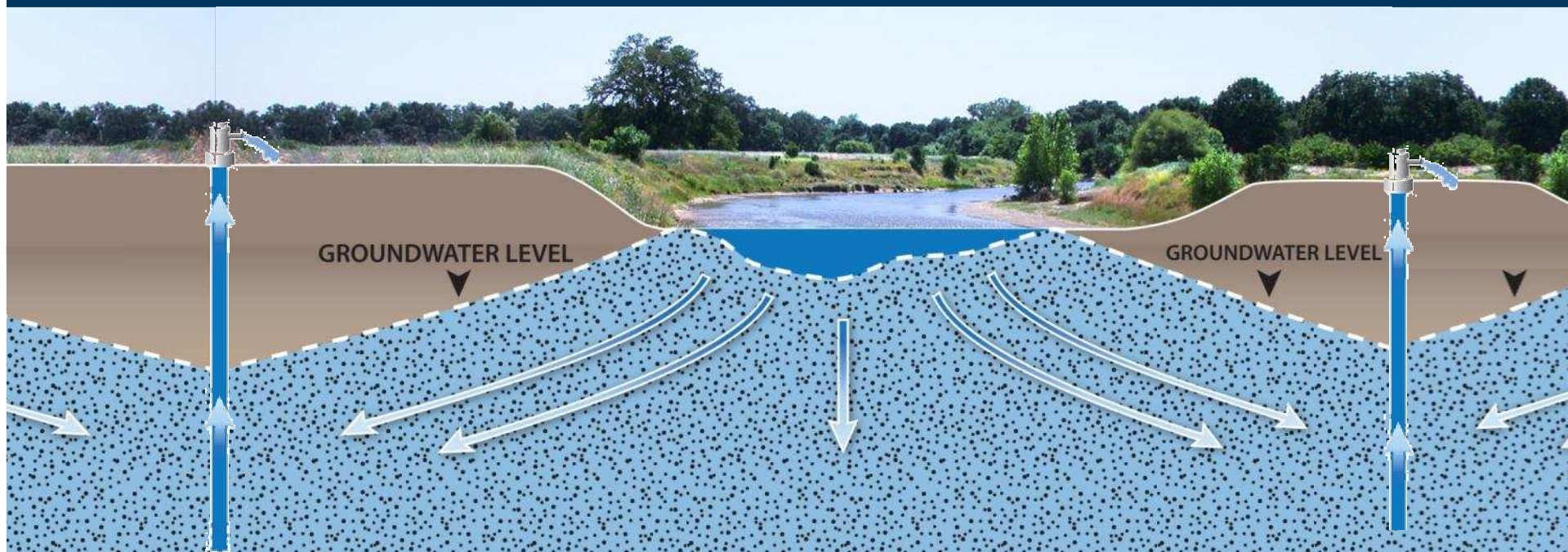


High Groundwater Levels  
Groundwater Maintains Stream Flow



# Groundwater Affects Stream Flow

“Losing Stream”



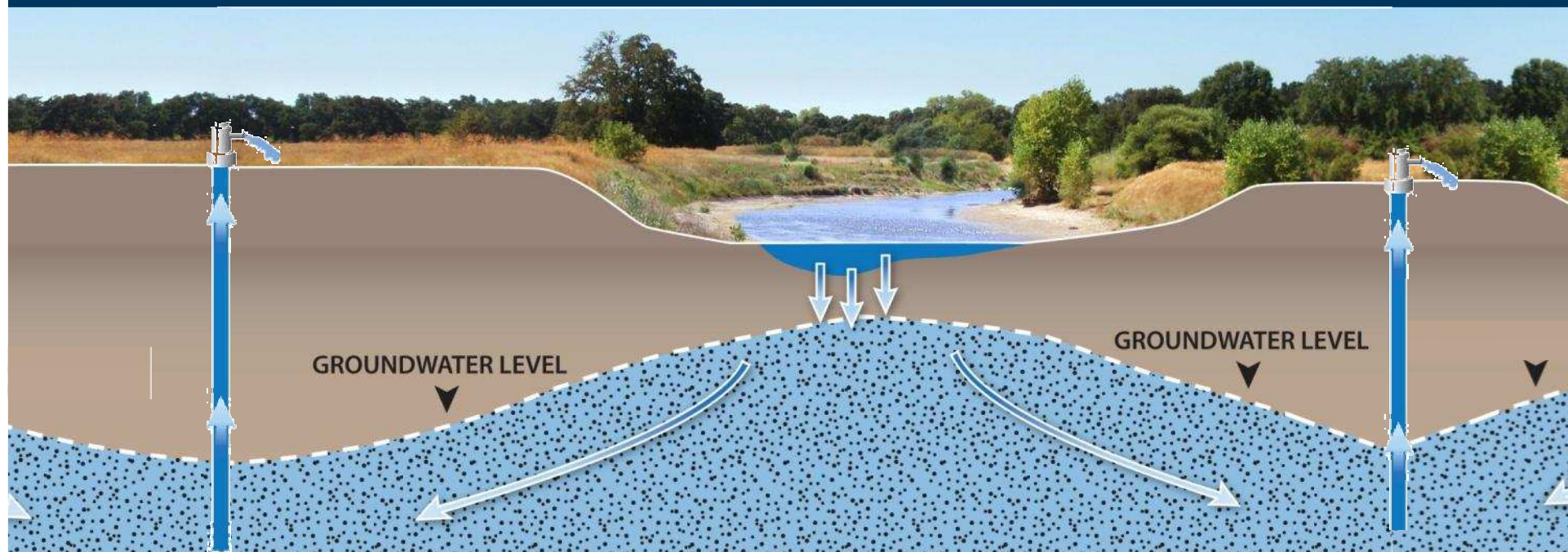
Pumping Lowers Groundwater Levels  
Stream Loses Flow to Groundwater



## Groundwater Affects Stream Flow

“Losing Stream”

Groundwater Levels Below Stream Channel



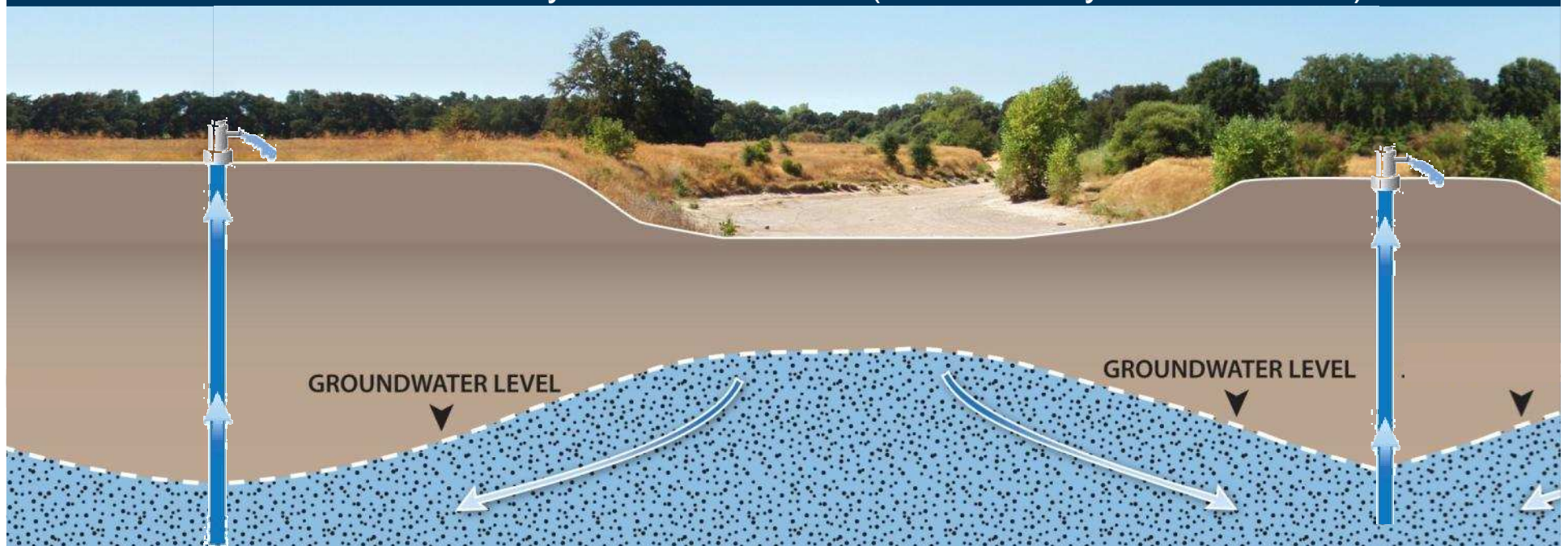
Pumping Lowers Groundwater Levels  
Stream Loses Flow to Groundwater



## Groundwater Affects Stream Flow

### Dry Stream

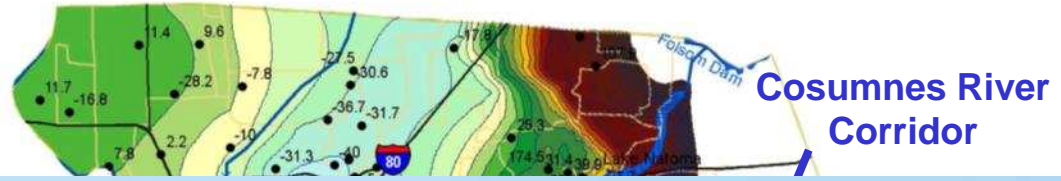
Seepage to Groundwater Exceeds Stream Flow  
Dry Stream Channel (Intermittently or Year-round)



Pumping Lowers Groundwater Levels  
Stream Loses Flow to Groundwater

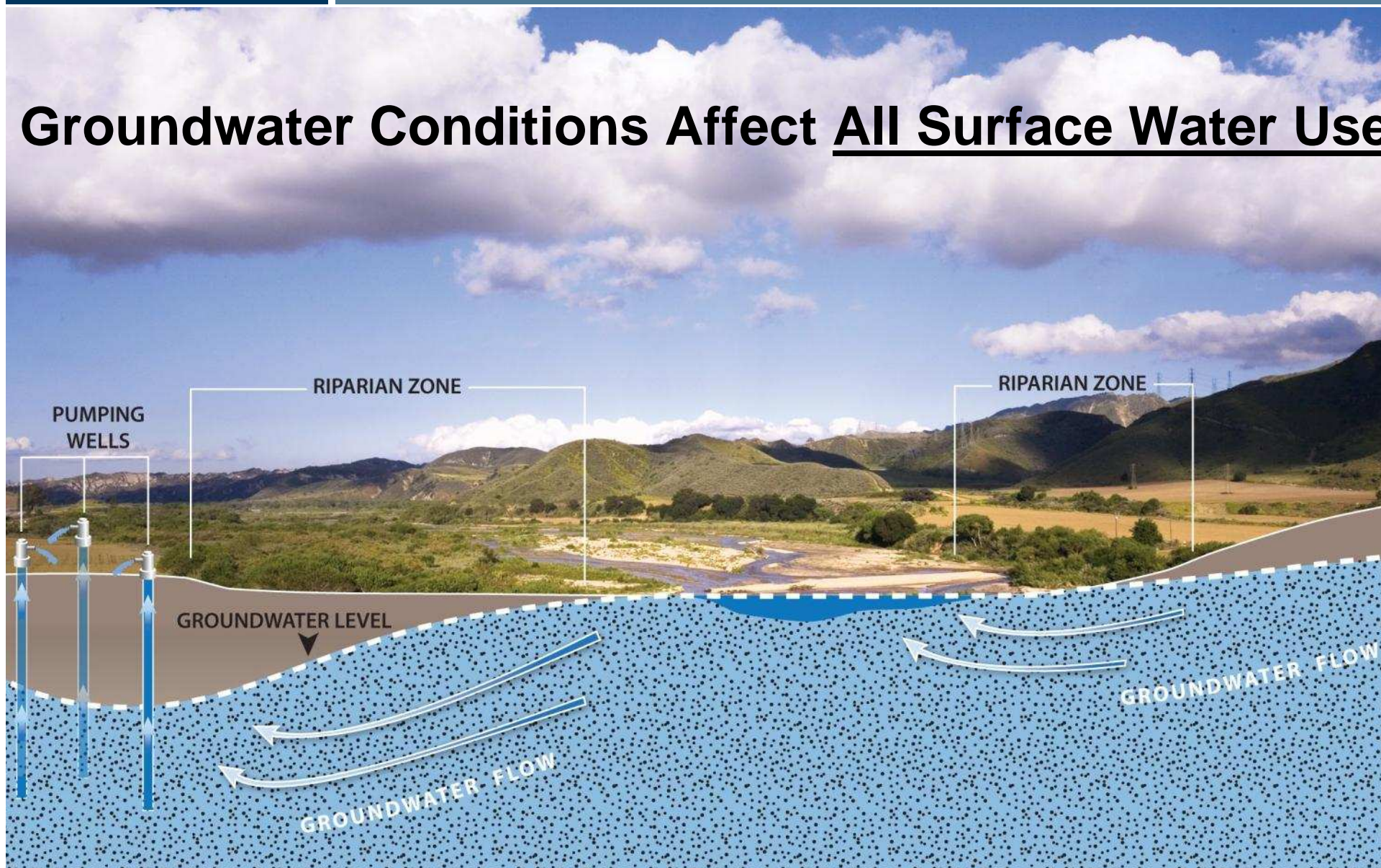


### Groundwater Affects Stream Flow



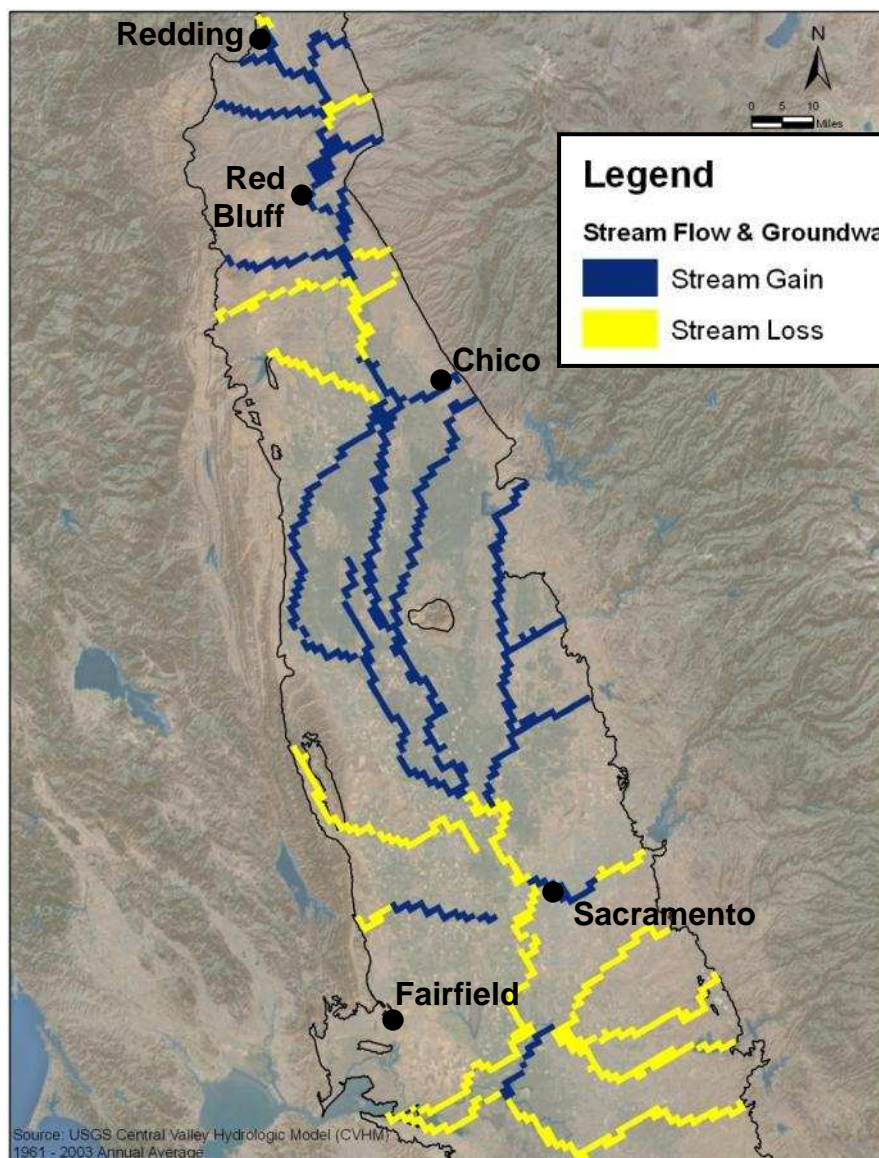


# Groundwater Conditions Affect All Surface Water Use





## Connection Is Everywhere



## Gaining and Losing Reaches of Rivers and Channels of the Sacramento Valley

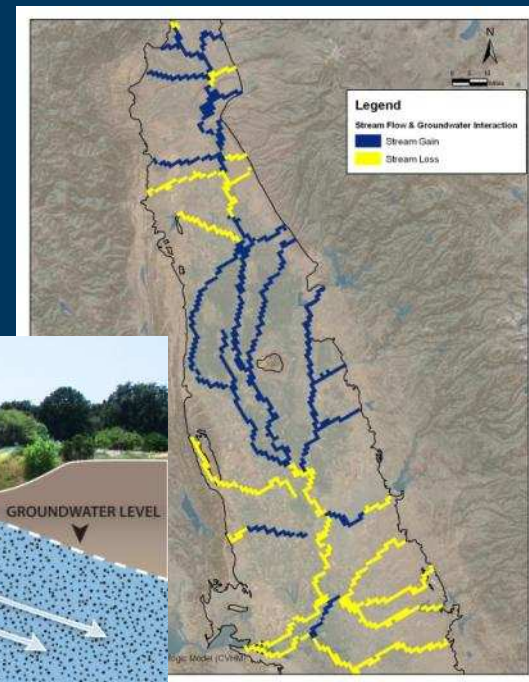
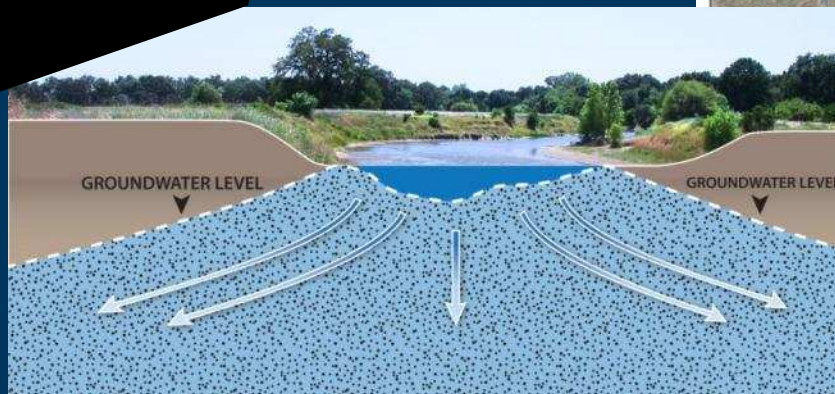
Source: USGS Central Valley Hydrologic Model (CVHM)  
Values are Average Annual Volumes for 1961 - 2003  
Units in Acre feet per year



- Surface Water
  - Quantified Allocations
  - Reporting of Use
- Groundwater
  - No Quantified Allocations
  - No Reporting of Use

## Physical Reality:

- Groundwater and Surface Water are Inseparable





## Successful Groundwater Management Does Happen

- 22 Adjudicated Basins
- Locally Managed Basins



- Response to Conflict or Crisis
- Unique Opportunity
- After Surface Flows and Ecosystems Already Degraded

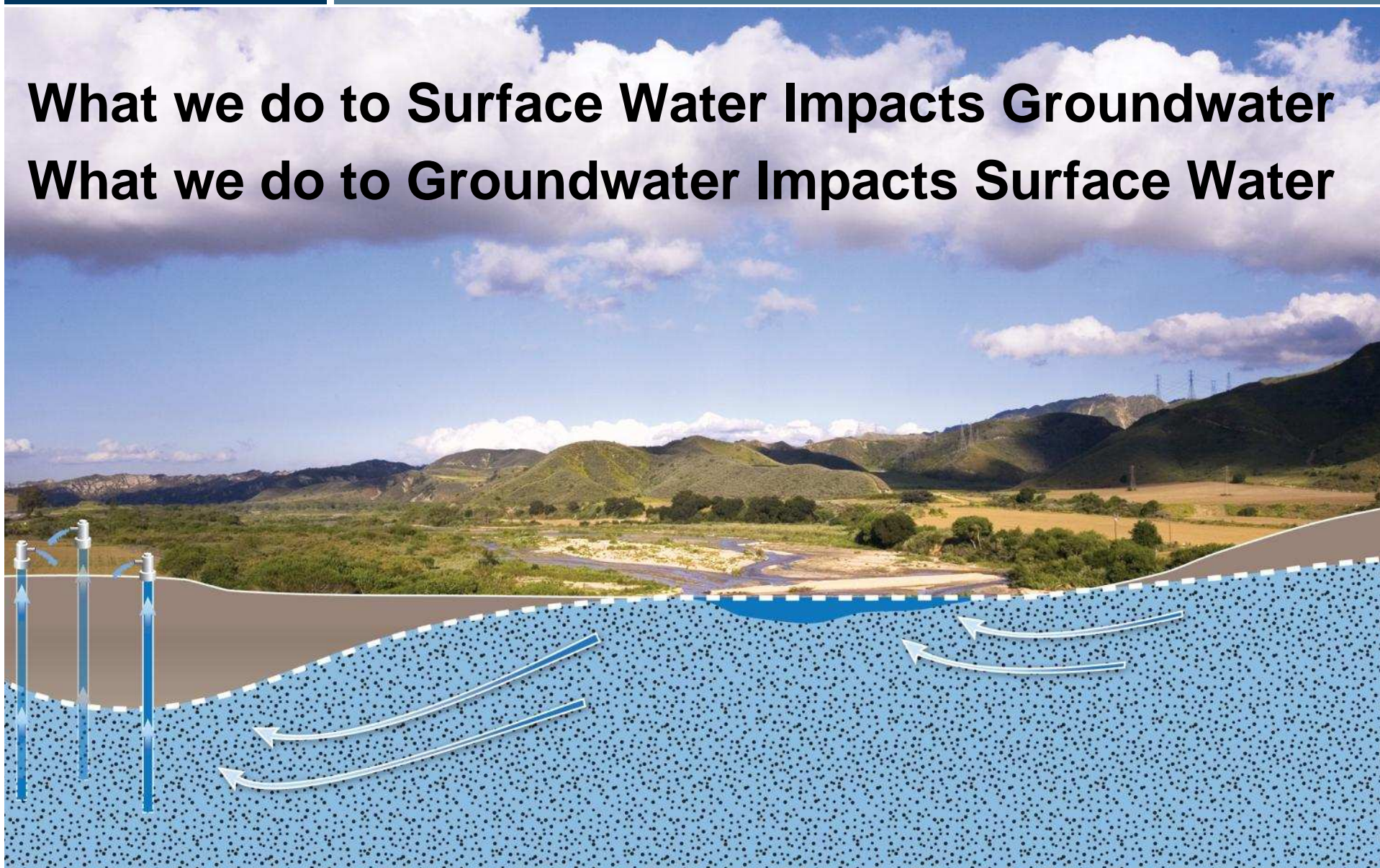
**We Can't Wait for Crisis**





# Codependent

**What we do to Surface Water Impacts Groundwater**  
**What we do to Groundwater Impacts Surface Water**





# ONE Water Supply

**We Need Water Policy that Recognizes Reality**





