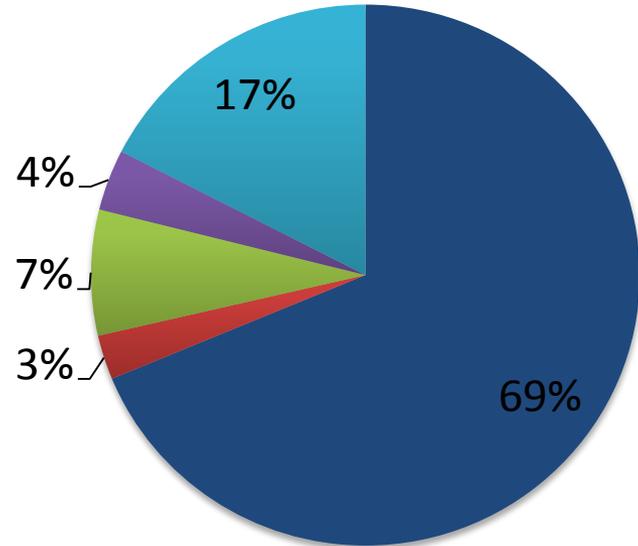
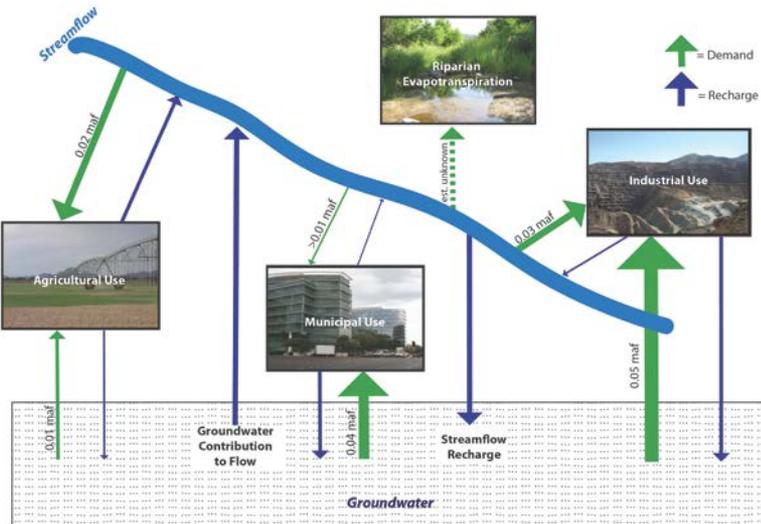




What is Water Demand?



Kelly Mott Lacroix
Candice Rupprecht

April 30, 2013



What are Water Demand and Water Use?

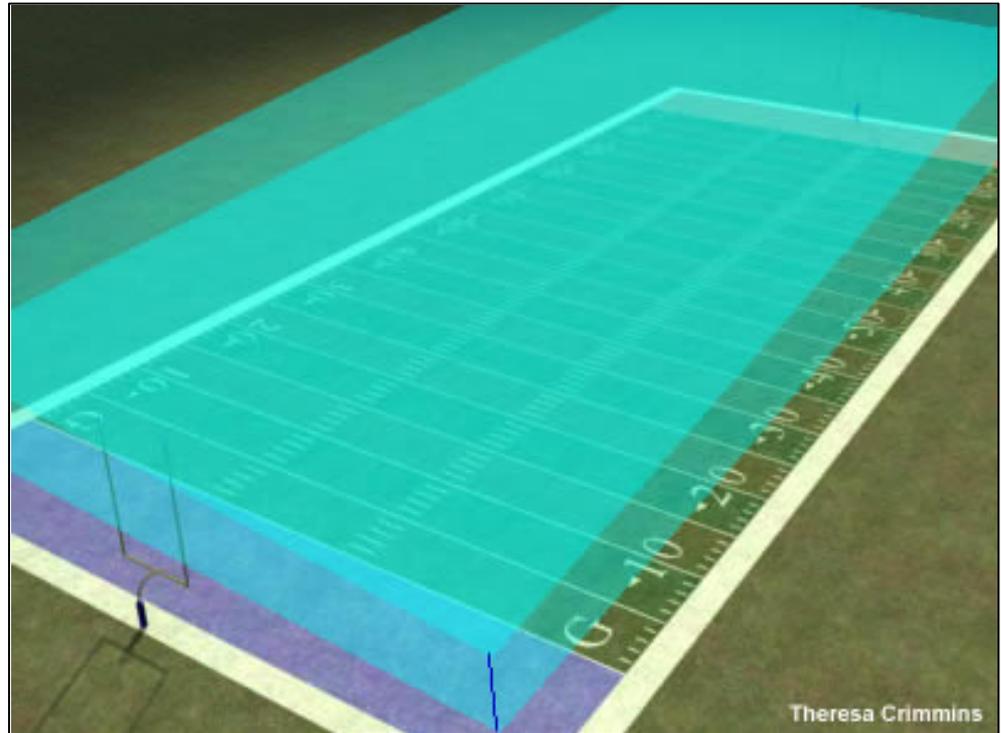
Demand = Amount of water pumped or diverted

Use = amount of water consumed and not returned to the system

Measured in acre-feet.

What is an acre-foot?

325,851 gallons or...



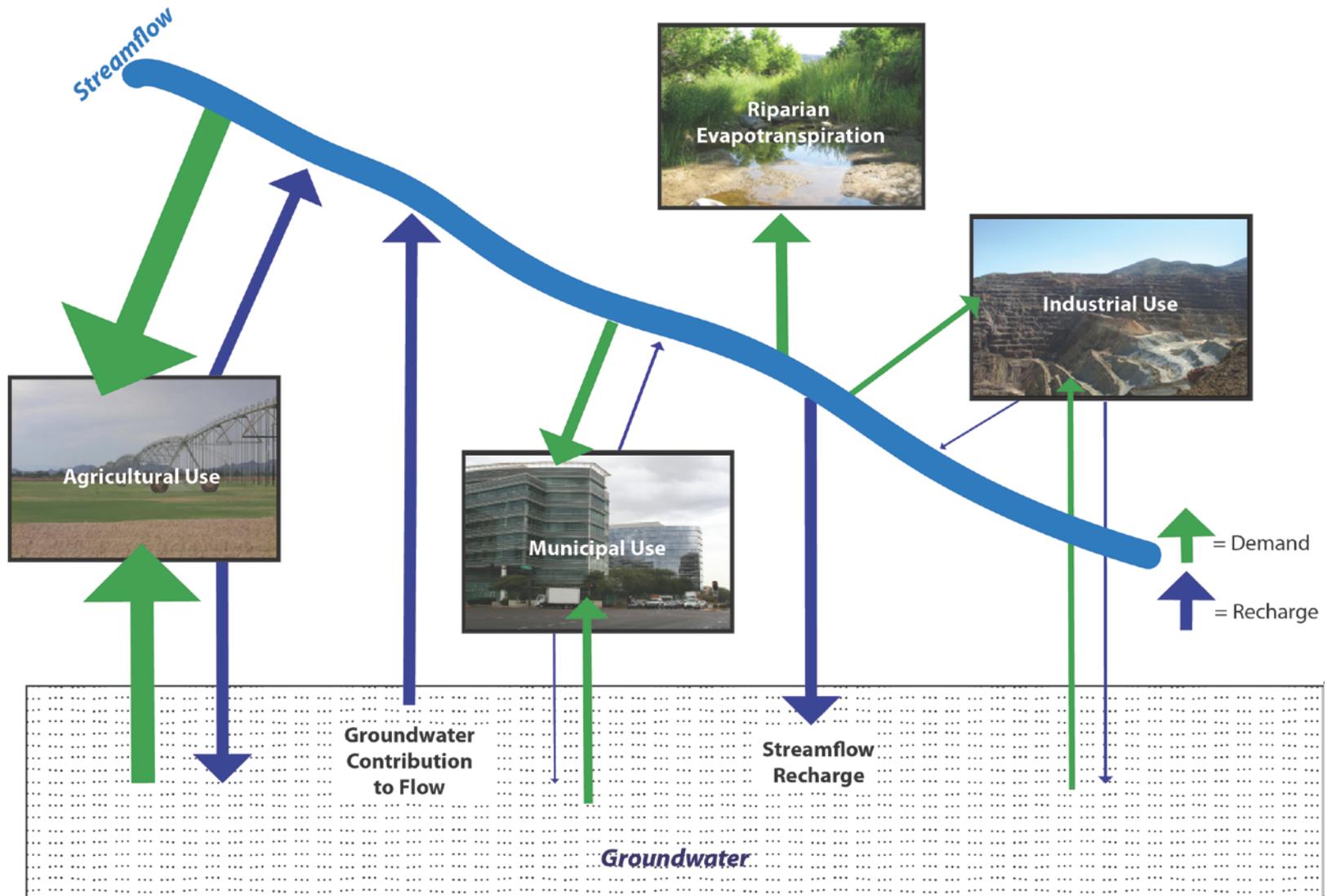


What is Water Demand?

Separated out into “sectors”:

- Agriculture
- Municipal
 - Commercial & Residential
- Industrial
- Environment
 - Wildlife, Rivers, Habitat, Recreation

Arizona Water Demand and Use





Is the “Environment” a Sector?

Current Quantified Flow

Flow that currently supports the environment and includes:

- Annual baseflow
- Groundwater underflow
- Riparian extent
- Average annual evapo-transpiration (ET)

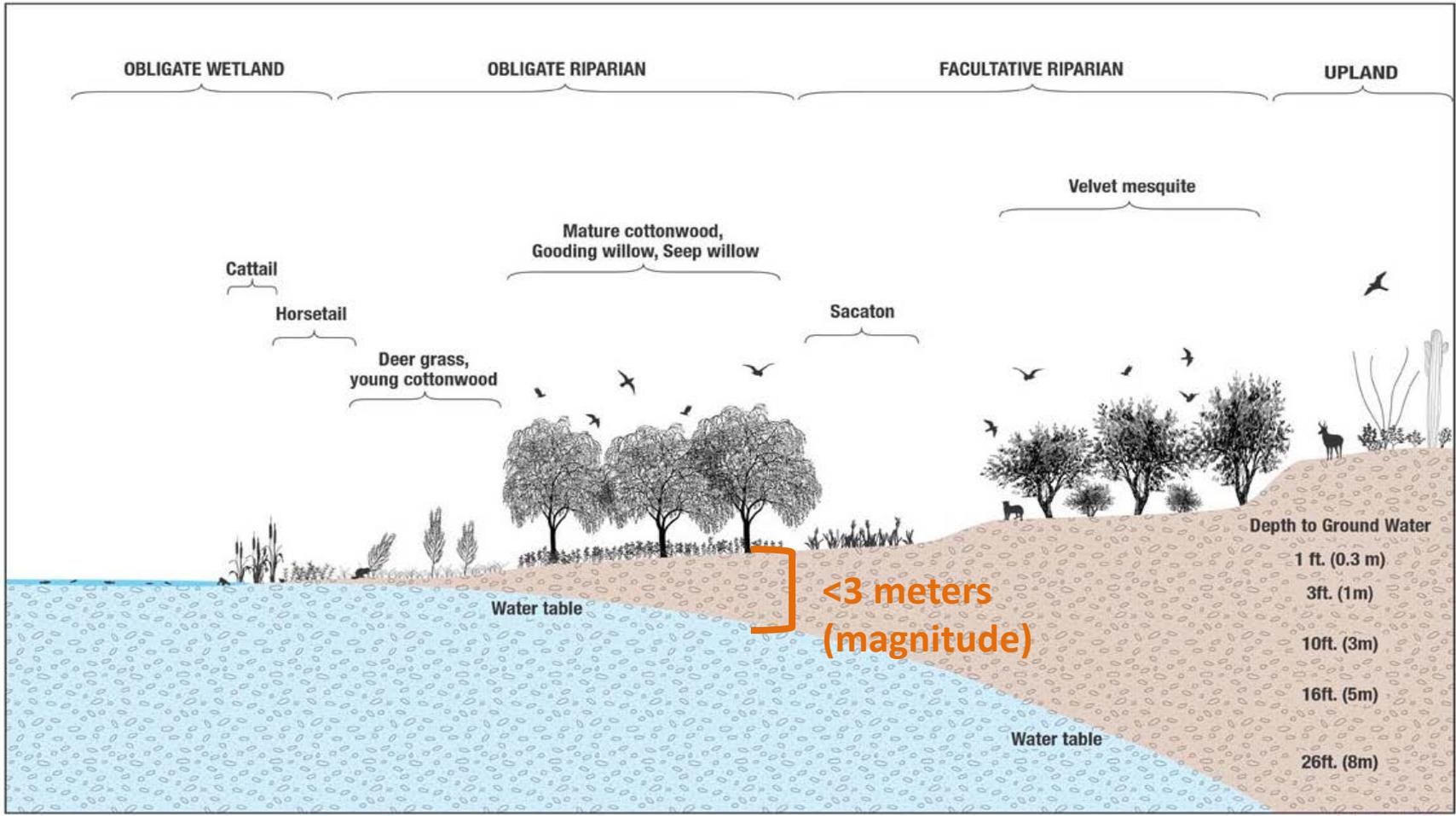
Environmental Demands

The amount of water needed in a watercourse to sustain a healthy ecosystem

- Magnitude (how much)
- Frequency (how often)
- Duration (how long)
- Timing (how predictable)
- Rate of Change (how variable)

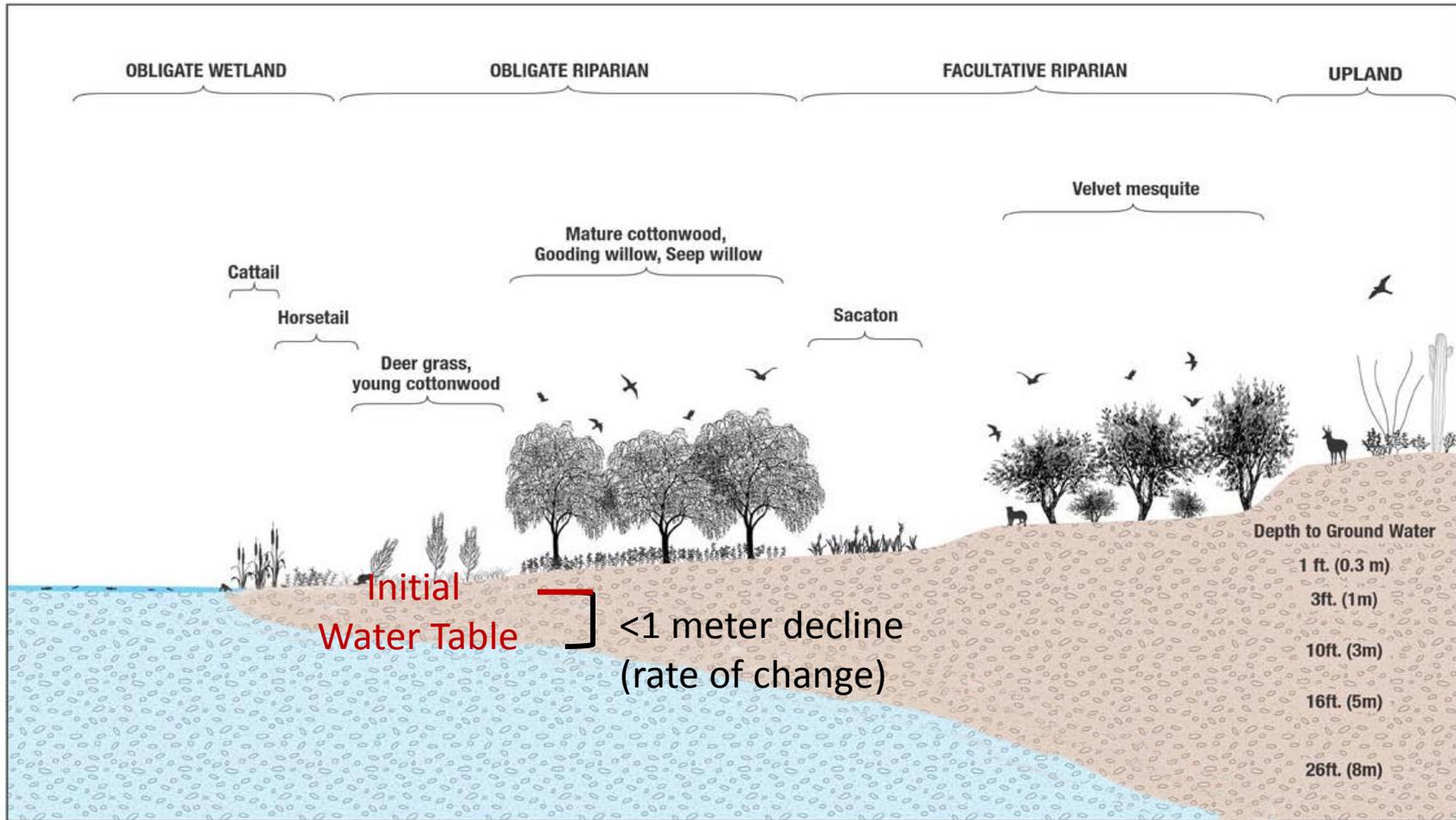


What does that mean?



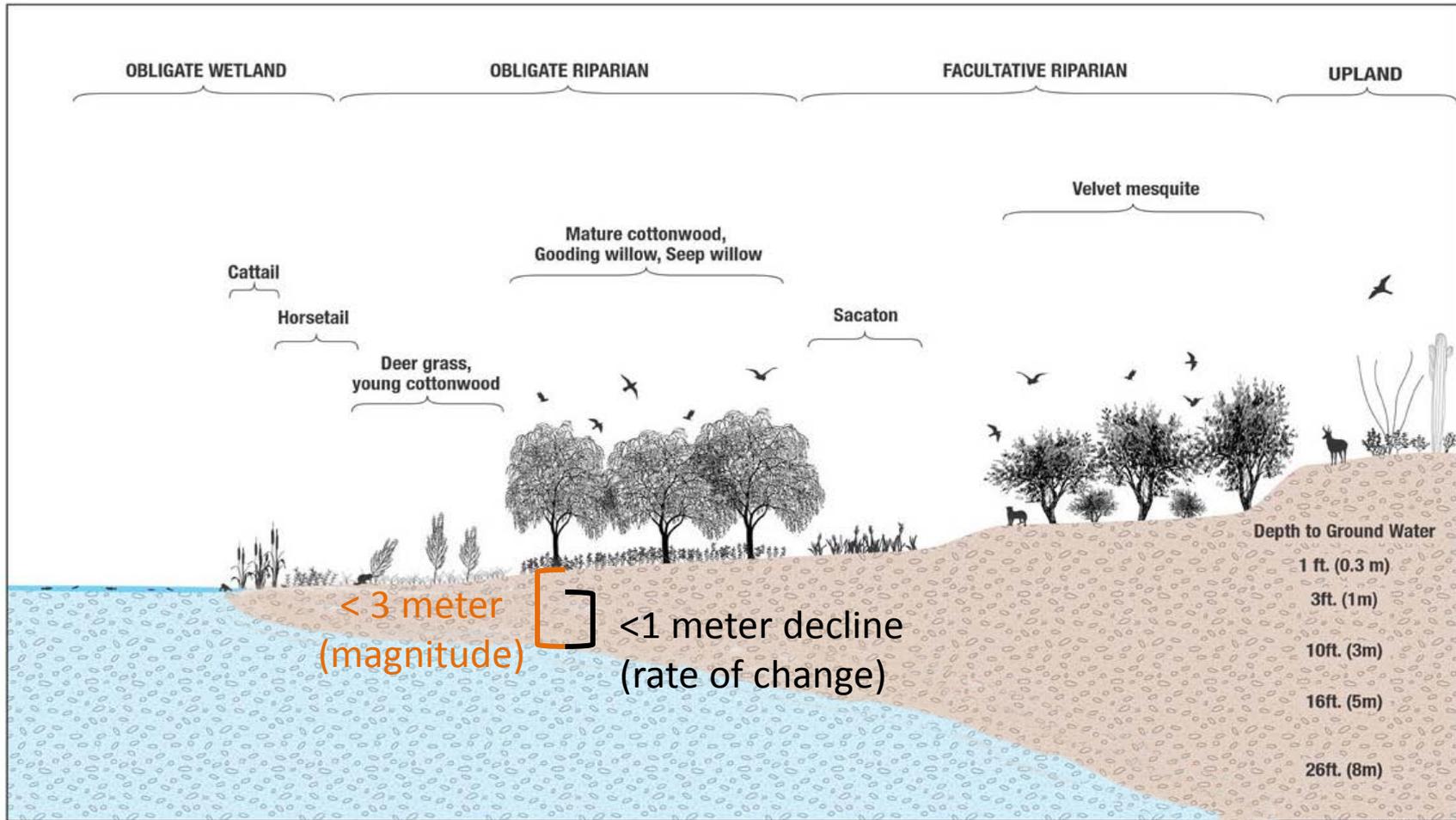


What does that mean?





What does that mean?





What does that mean?

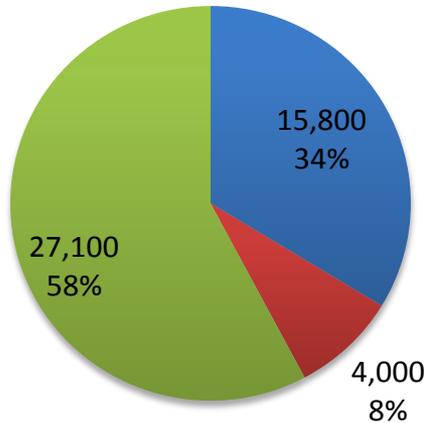
- Magnitude (how much = < 3 meters below land)
- Frequency (how often = not studied here)
- Duration (how long = year round)
- Timing (how predictable = flow needed $> 60\%$ of the year)
- Rate of Change (how variable = < 1 meter decline)





How is water used in the Verde River Basin?

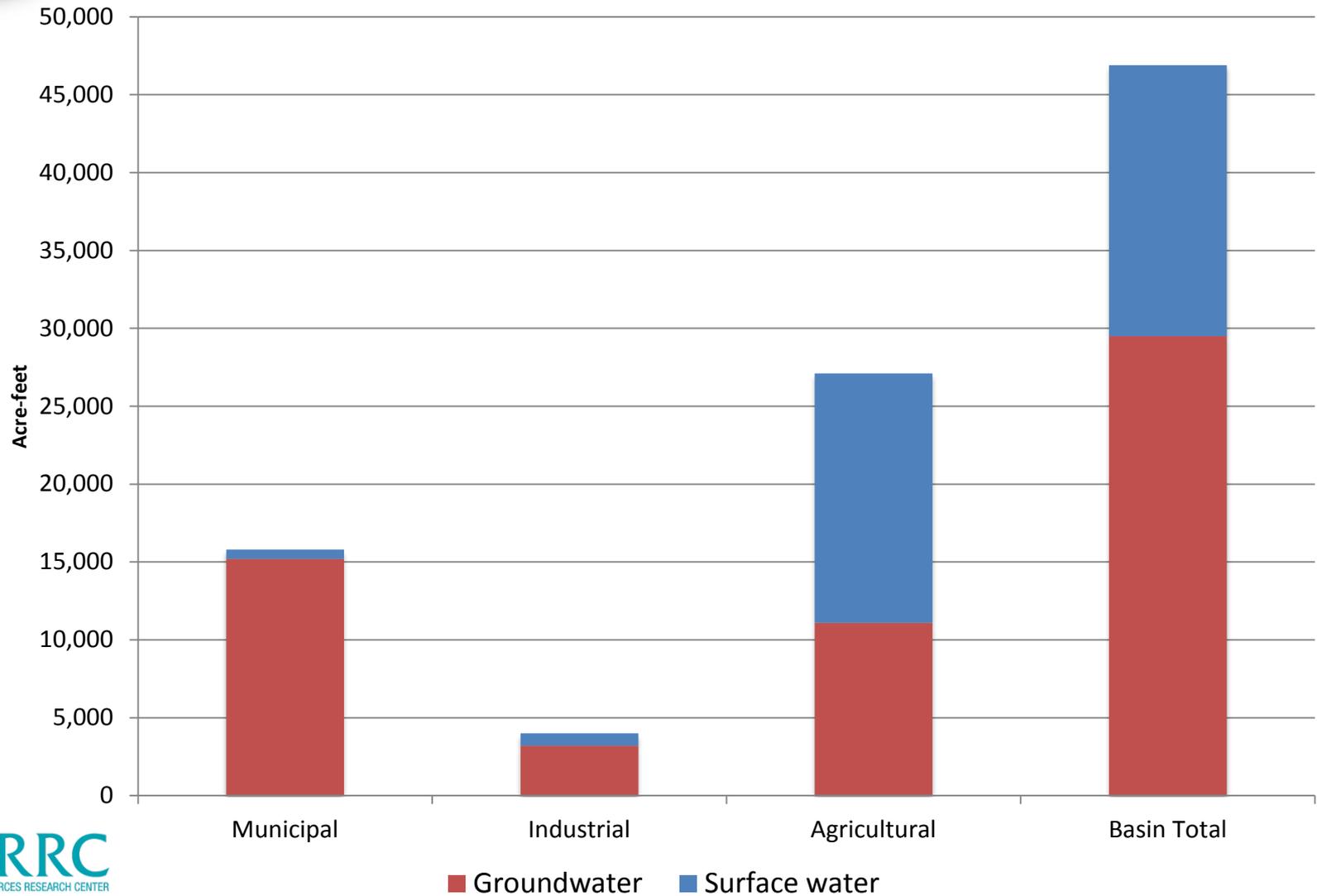
Verde River Basin Water Demand by Sector (in acre-feet)



■ Municipal ■ Industrial ■ Agricultural



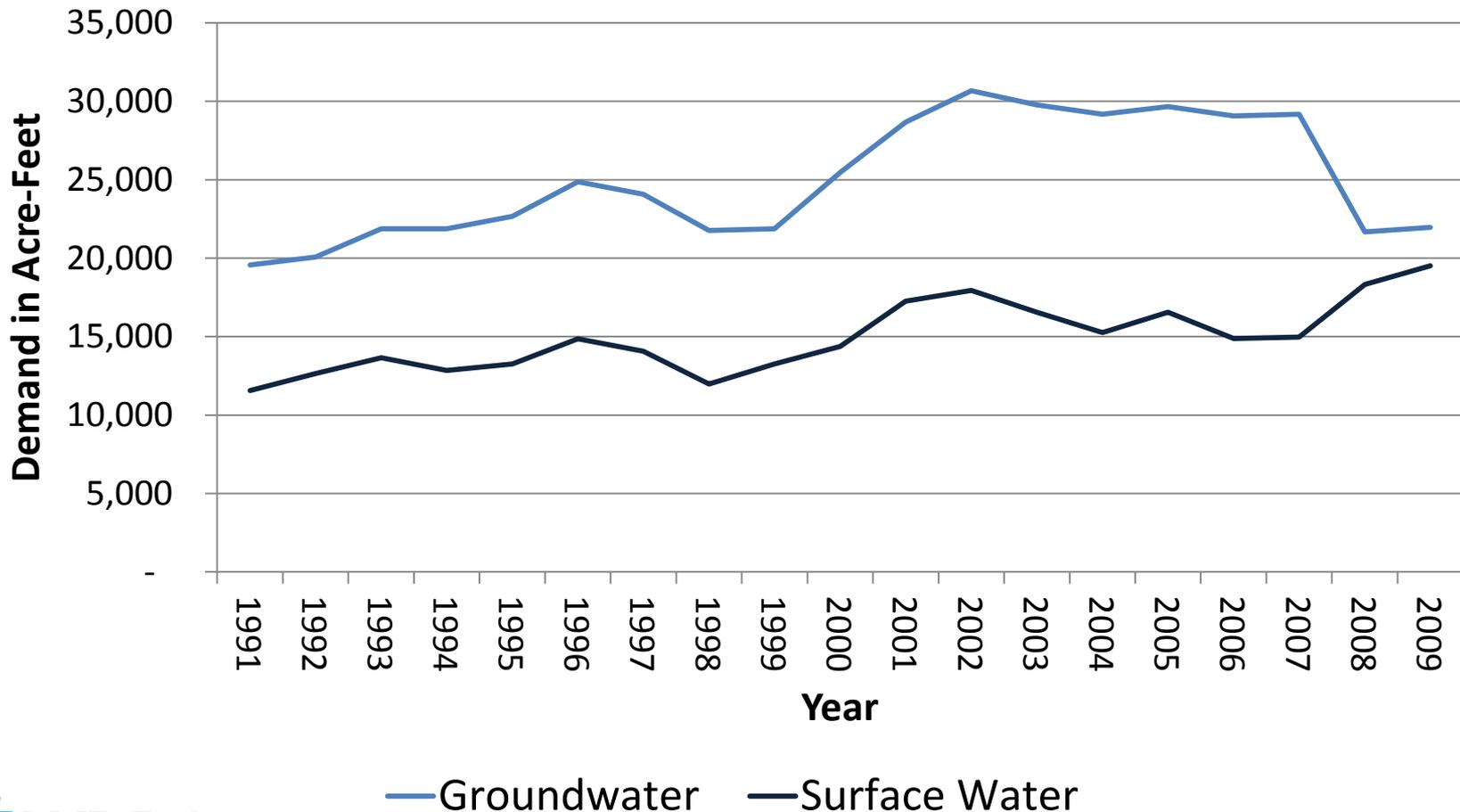
Verde River Water Demand Totals



Source: ADWR 2006



How is water used in the Verde River Basin?



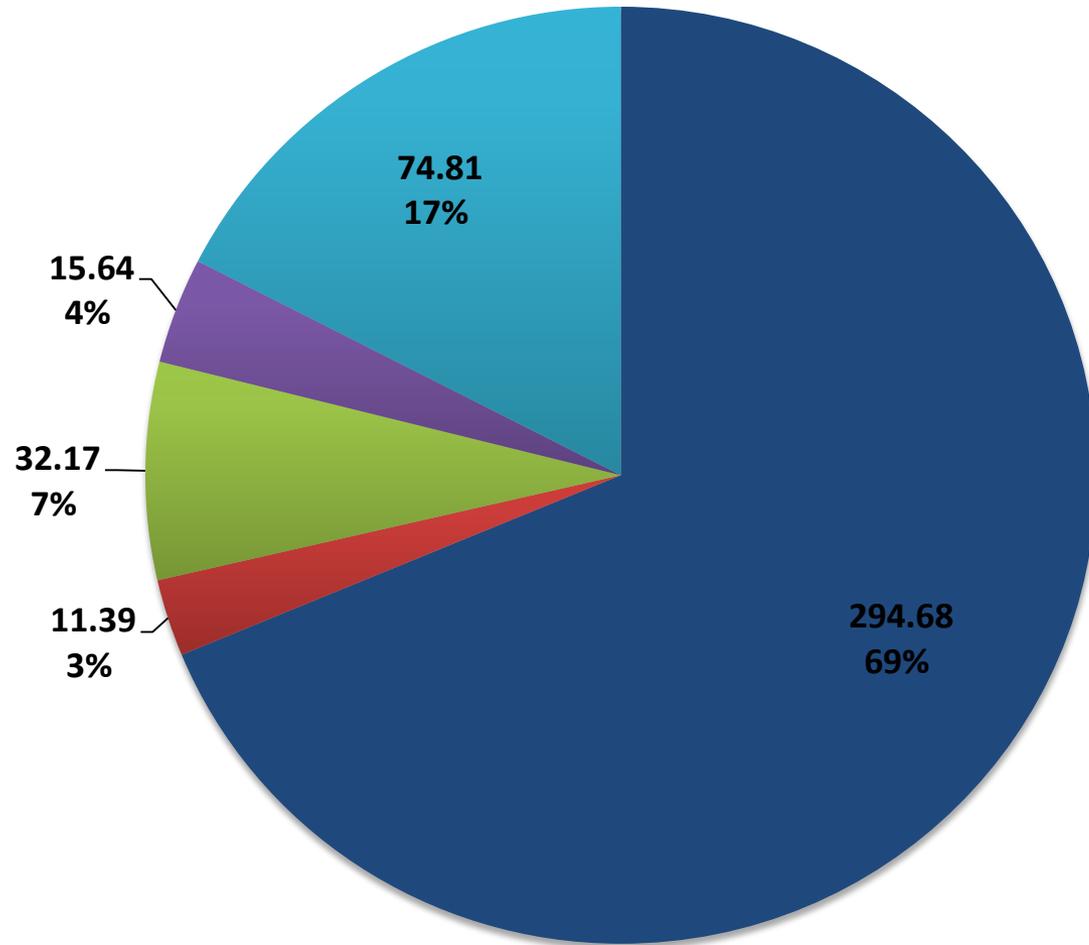
Source: ADWR 2010



2012 Clarkdale Water Use

All values in acre-feet

Total Use: 429 acre-feet



Source: Town of Clarkdale, ADWR 2000

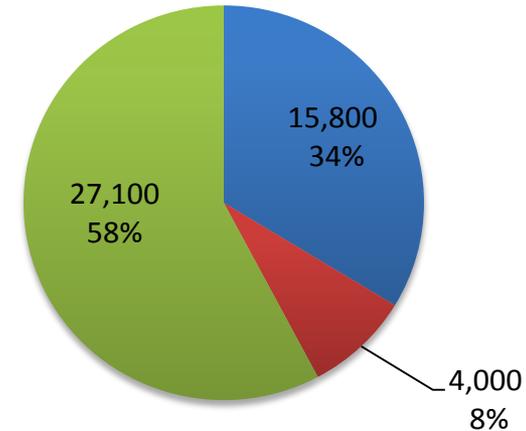


■ Residential ■ Commercial ■ Government ■ Other ■ Water Exports



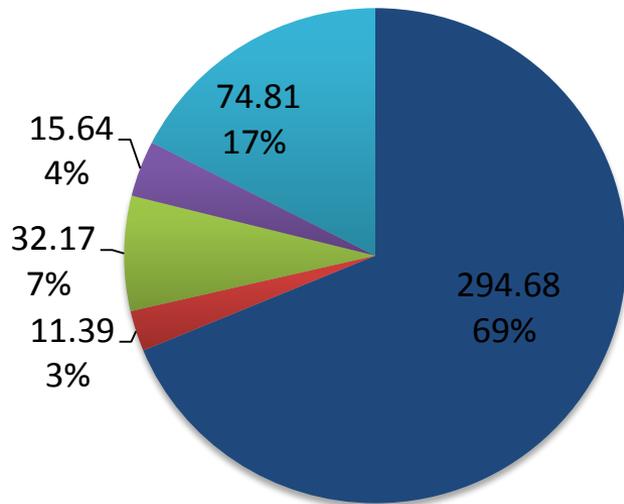
Where do I fit in this picture?

Verde River Basin Water Demand by Sector (in acre-feet)



■ Municipal ■ Industrial ■ Agricultural

2012 Clarkdale Water Use (in acre-feet)



■ Residential ■ Commercial ■ Government
 ■ Other ■ Water Exports

Total Basin Demand: 46,900 af
 Total Clarkdale Demand: 429 af
 Clarkdale residential gpcd: 66
 Clarkdale total gpcd: 78
 Verde Basin total gpcd: 140



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