



CITIZENS WATER ADVOCACY GROUP

CWAG:WATER FOR THE FUTURE:

Presented by Ed Wolfe, Ph.D.

First Annual Northern Arizona
Environmental Conference

Organized by
Save Our Ancient Red Rocks
January 2019
Prescott, Arizona

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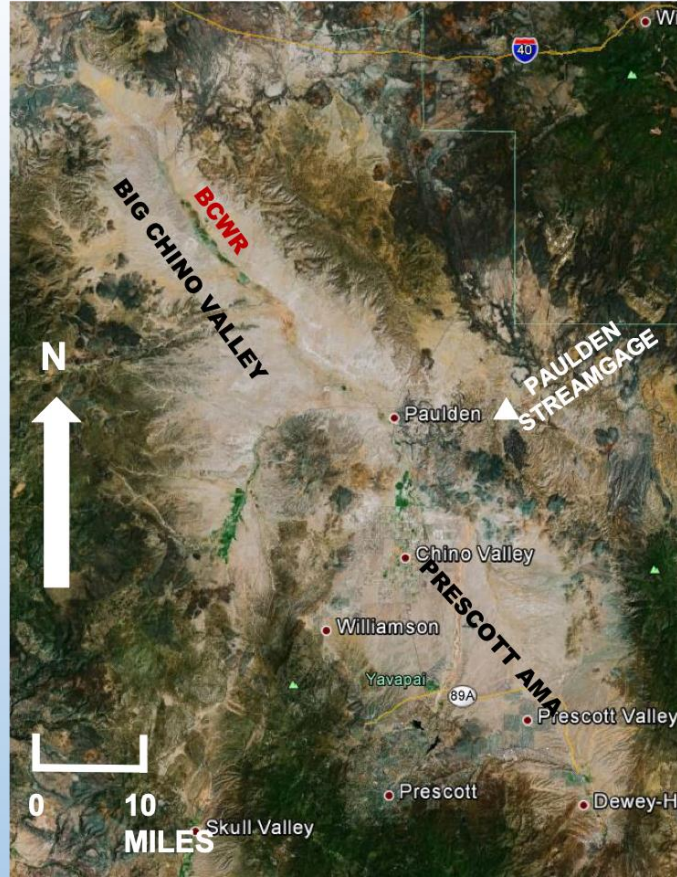
CITIZENS WATER ADVOCACY GROUP

- **Founded 2002 in Prescott**
- **Approximately 200 members**
- **Promotes a sustainable water future in the Upper Verde River Basin and the Prescott Active Management Area by educating the public, encouraging citizen action, and advocating responsible governmental decision-making**
- **Monthly public programs**
- **Programs to community groups**
- **Annual candidate forum**
- **Attend and monitor public meetings**

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PRESCOTT ACTIVE MANAGEMENT AREA

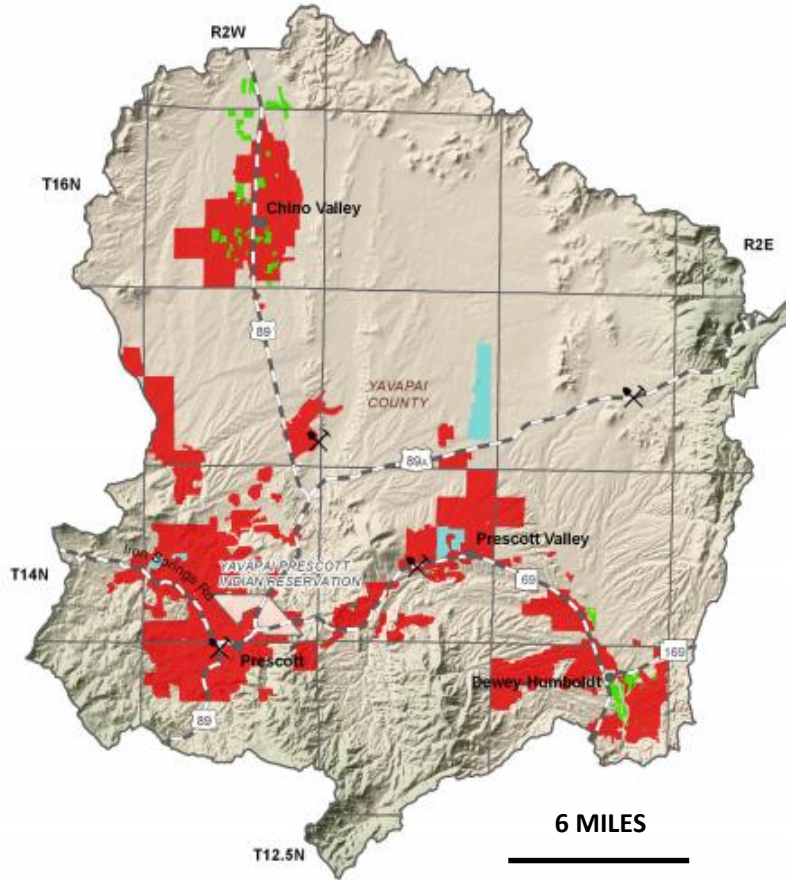
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PRESCOTT ACTIVE MANAGEMENT AREA (PrAMA)

c. 2004





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PrAMA MONITORED WELLS

SHOWING

WATER-LEVEL CHANGE, FT

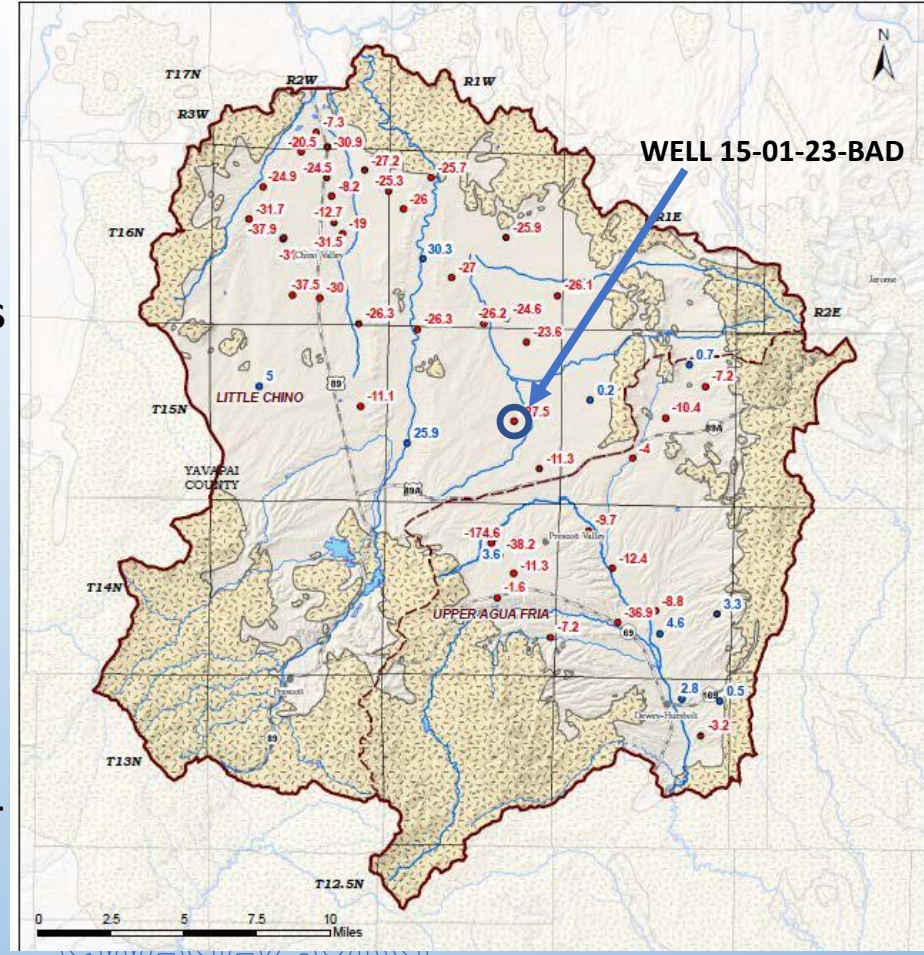
1994-2010

WATER-LEVEL CHANGE

IN MONITORED WELLS

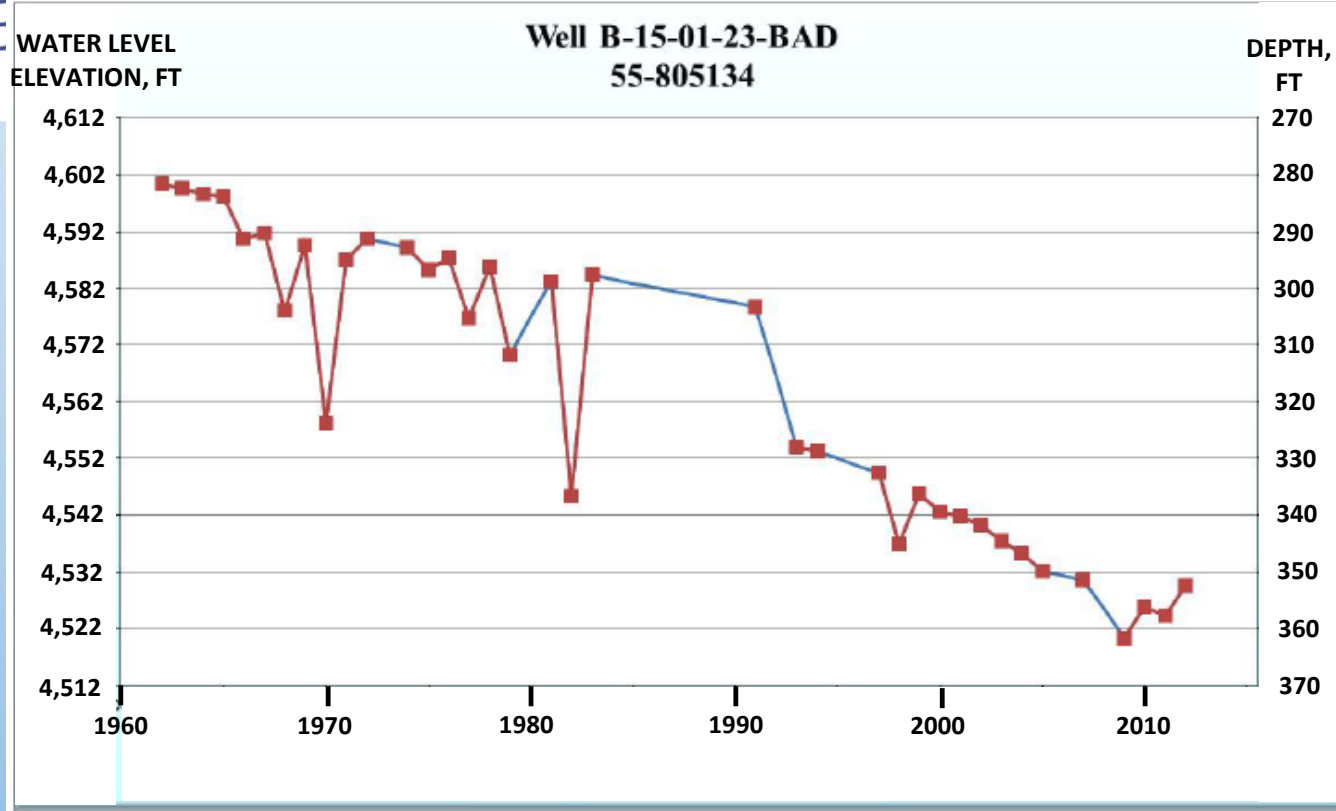
1939 TO PRESENT

MOSTLY -50 OR MORE FEET





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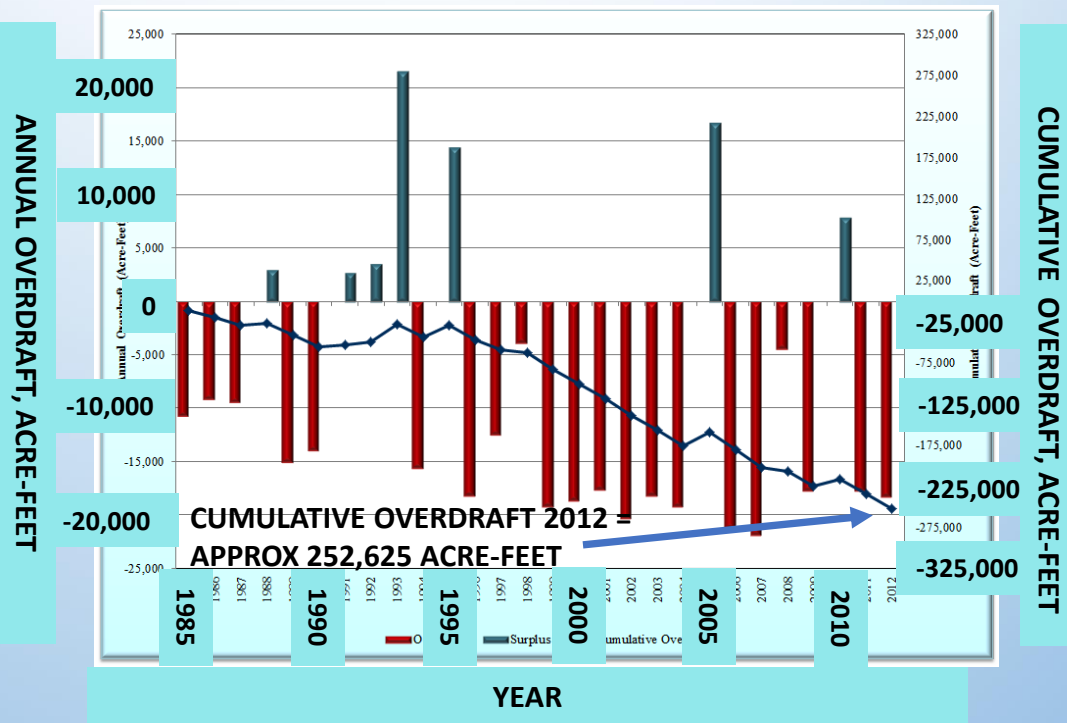


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PRAMA OVERDRAFT 1985-THROUGH 2012 AND 2019



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CUMULATIVE OVERDRAFT (MOSTLY 1995 THROUGH 2012): 252,625 ACRE-FEET; 4.9 – 8.4% OF AQUIFER STORAGE

THROUGH 2017 (ESTIMATED): 331,663 ACRE-FEET 6.4 – 11.1% OF AQUIFER STORAGE

YET

MANY THOUSANDS OF NEW HOMES ARE "ON THE BOOKS"



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UPPER VERDE RIVER

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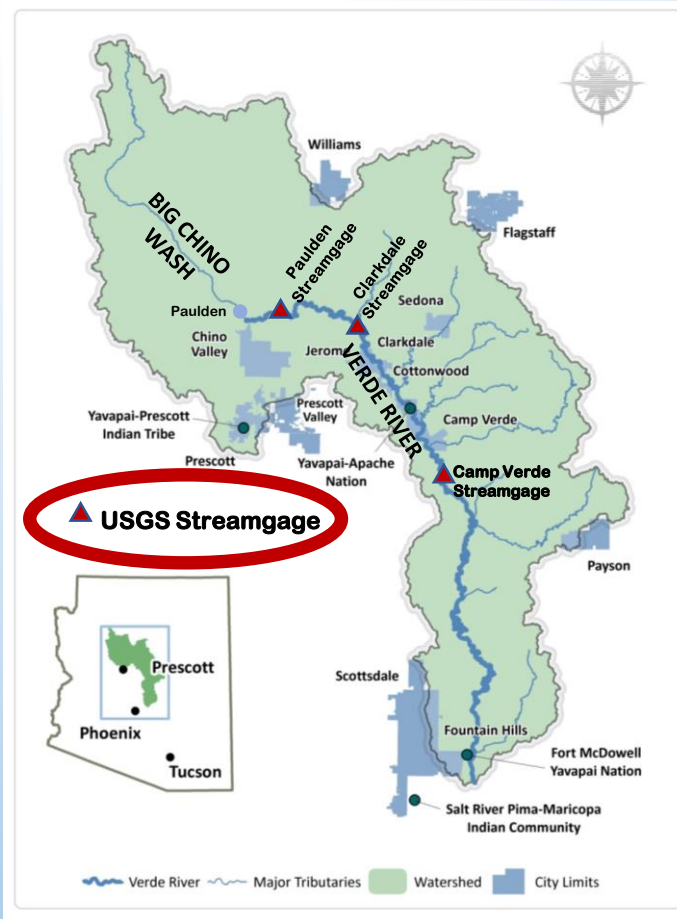


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VERDE RIVER BASIN

VERDE RIVER:

- ONE OF ARIZONA'S FEW REMAINING PERENNIAL RIVERS
- FLOWS ESSENTIALLY FREELY FROM ITS HEADWATER SPRINGS FOR APPROXIMATELY 137 MILES TO HORSESHOE RESERVOIR
- THEN ANOTHER 51 MILES TO ITS CONFLUENCE WITH THE SALT RIVER NEAR FOUNTAIN HILLS



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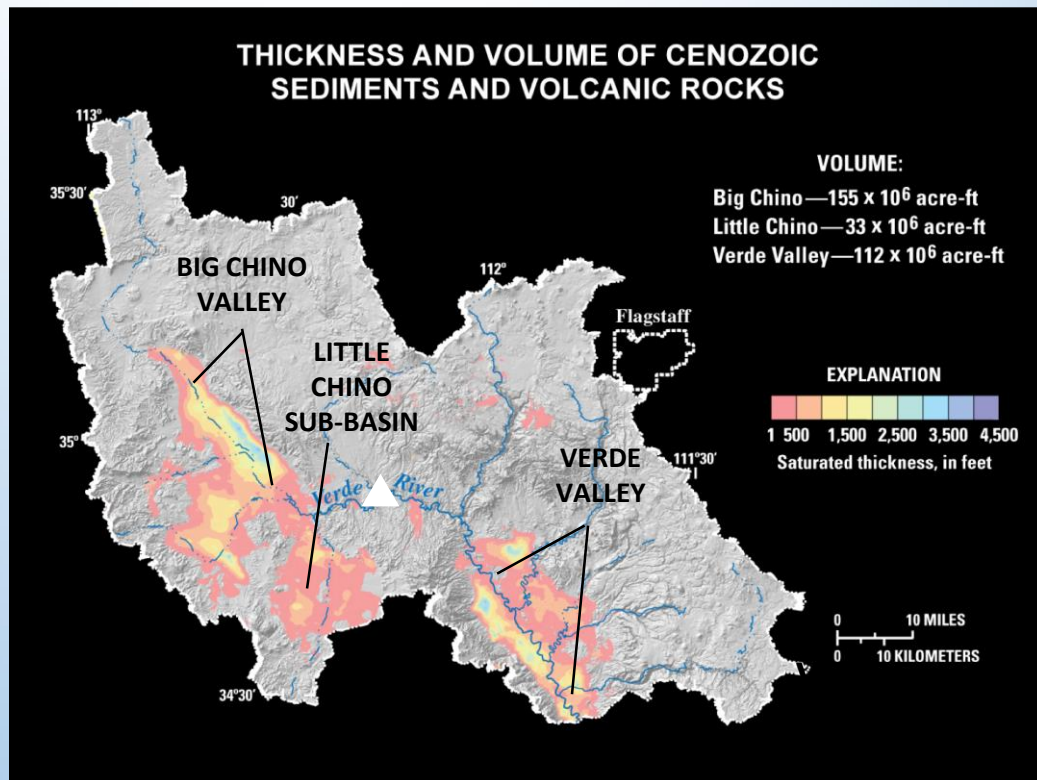


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**SATURATED THICKNESS OF
YOUNG SEDIMENTS AND
VOLCANIC ROCKS**



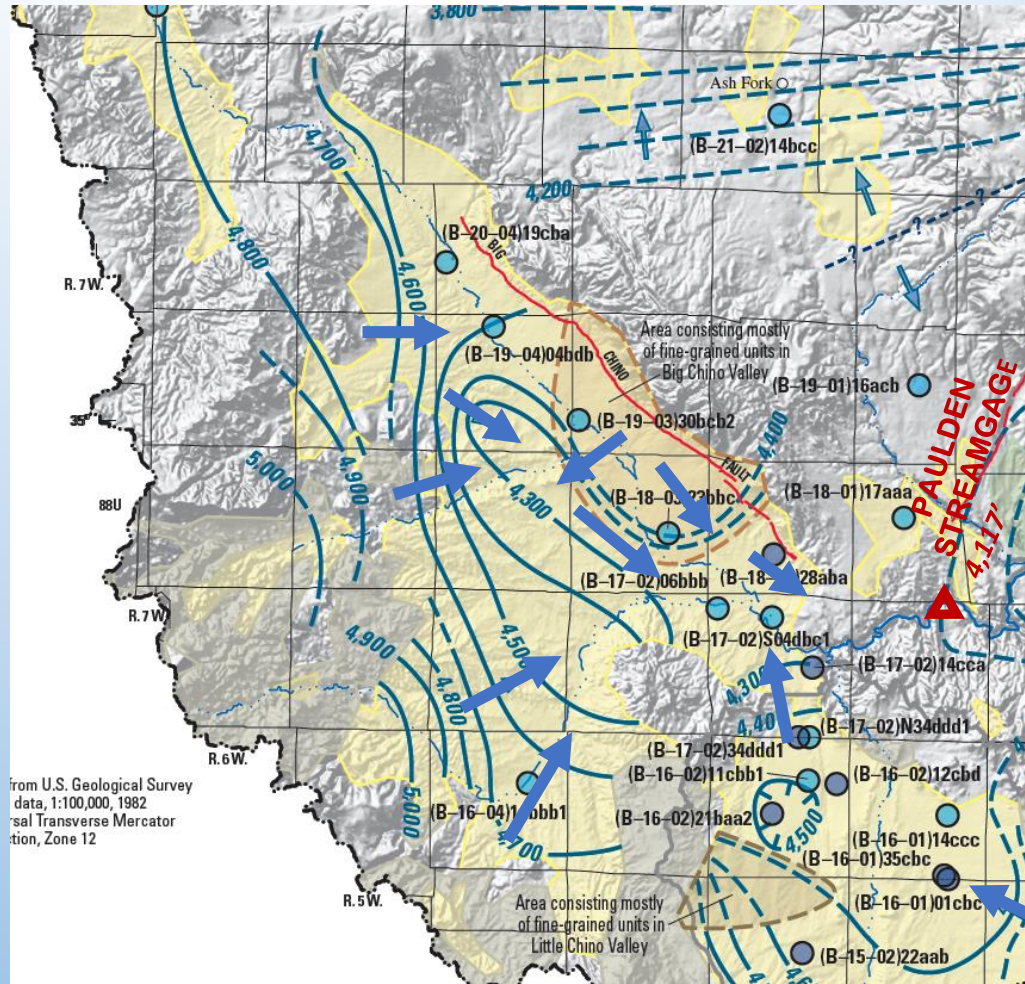
**PAULDEN
STREAMGAGE**



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GROUNDWATER FLOW DIRECTION





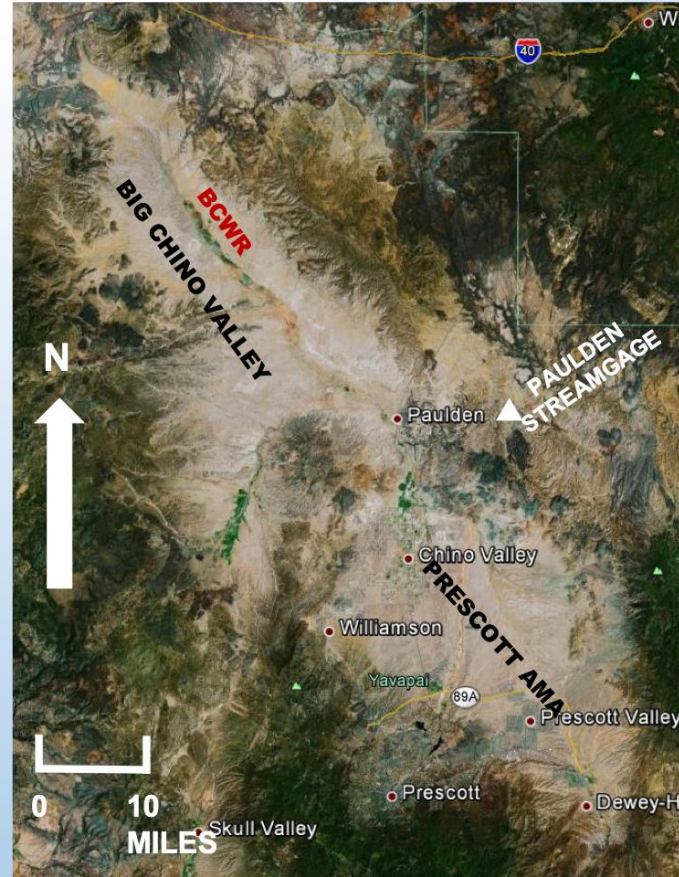
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BIG CHINO VALLEY

4 THREATS TO THE UPPER VERDE RIVER

- **BIG CHINO WATER RANCH**
8,000 AF/Y = 11 cfs
- **BIG CHINO VALLEY PUMPED STORAGE PROJECT**
INITIAL FILL 27,000 AF/Y = 15 CFS
ANNUAL 1,200 AF/Y = 1.7 CFS
- **POTENTIAL HOMES @ 4 HOMES/AF**
75,000 HOMES 18,750 AF/Y = 26 CFS
- **NEW "BIG" AG** ____?
- VS

ANNUAL "LOW FLOW" AT PAULDEN GAGE
13,000 AF/Y = 18 CS 2010 THRU 2017;
11,000 AF/Y = 15 CFS IN 2018



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POTENTIAL MITIGATING STRATEGIES

- **Drought-tolerant landscaping;**
- **Residential, commercial-area, and public-land rainwater harvesting for landscape irrigation, non-potable indoor use, groundwater recharge;**
- **Minimizing groundwater exploitation by land-use management;**
- **Purchase of development rights (conservation easements) on yet-undeveloped tracts;**
- **Storm-water management that supports aquifer recharge;**
- **Regulation of groundwater pumping;**
- **Formation of a Big Chino water-management district with authority to manage groundwater in the Big Chino Valley so as to protect domestic wells and the base flow of the Verde River**