

Water in Rural Arizona



Fundamentals



- Arizona has an adequate but limited supply of water.
- Everyone seems to want more.
- No one wants to pay too much.
- People who have water protect it with a passion.
- People who don't have enough water think the people who do:
 - Use too much.
 - Should share.
 - Should sell to them.

Arizona Water Rights Categories



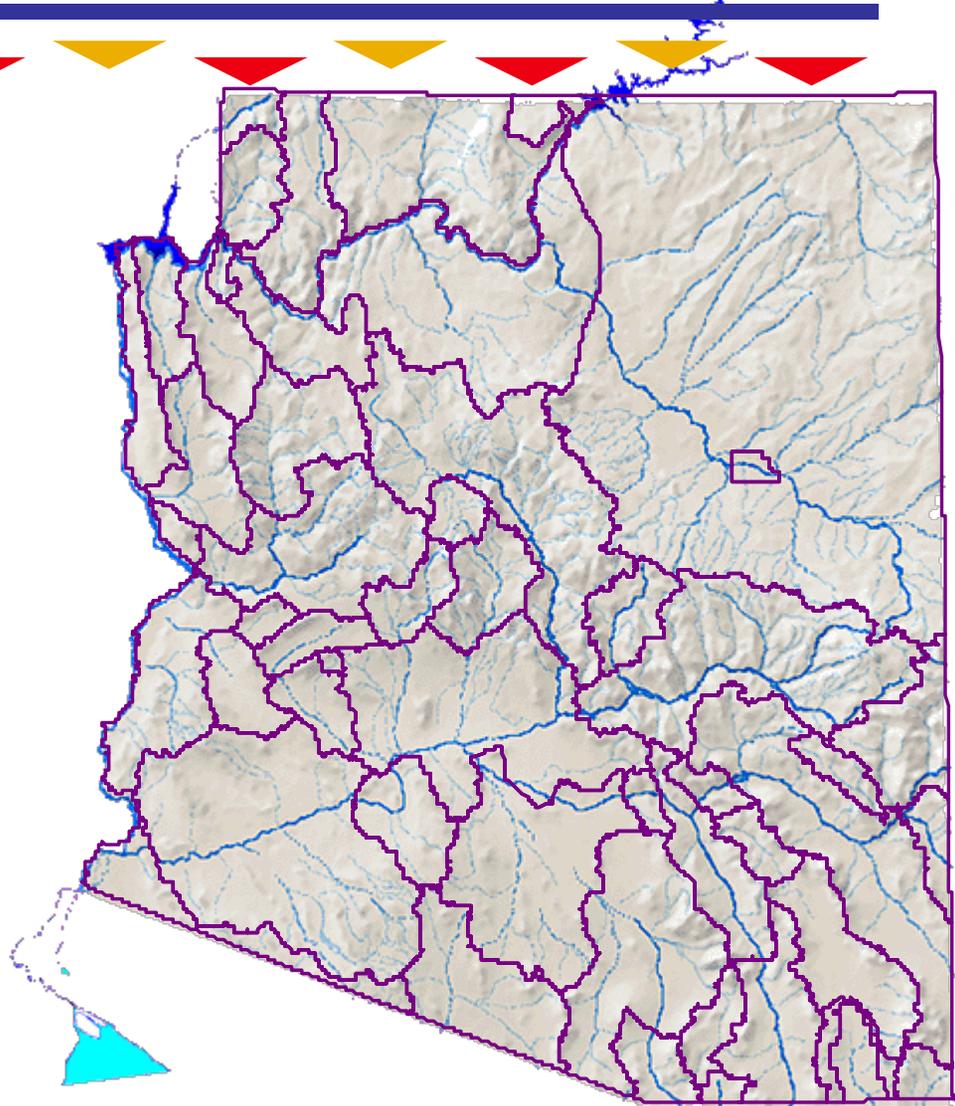
- Groundwater
- Surface water
- Colorado River water
- Effluent
- Federal reserved rights

Groundwater

- Arizona's most abundant water resource, but often not found where it is needed.
- Many of the state's groundwater aquifers are being overdrafted (mined).
- Strict regulatory controls in Active Management Areas -- but not in the other basins.
- Outside of AMAs no ground water rights are directly established. Landowners can drill wells to put the water to beneficial use.
- State law regulates and limits inter-basin transfers.

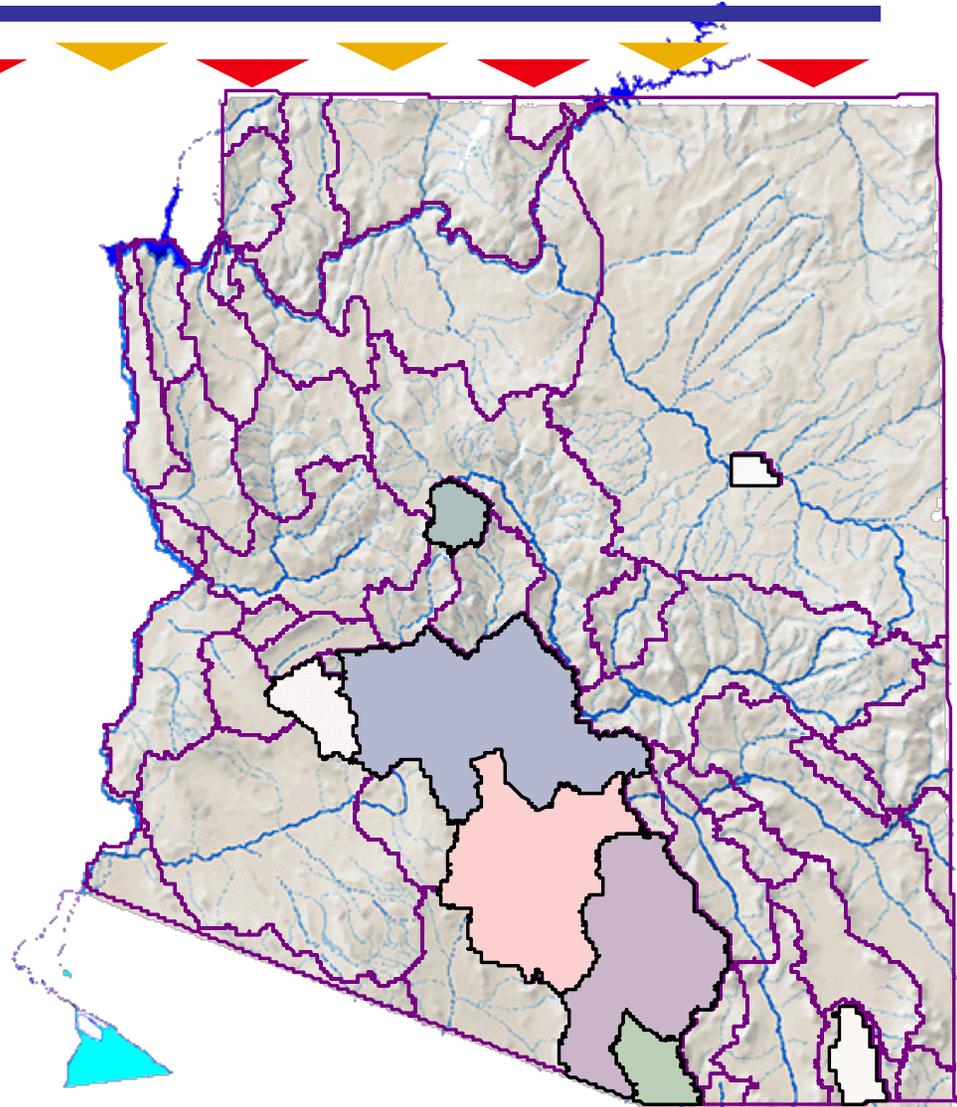
ARIZONA GROUNDWATER BASINS

◇ Arizona Encompasses 50
Groundwater Basins*



ARIZONA GROUNDWATER BASINS

- ◇ Arizona Encompasses 50 Groundwater Basins*
- ◇ 46 Groundwater Basins are outside of AMA's



Surface Water

- Arizona follows law of prior appropriation – “first in time, first in right.”
- Most of the state’s surface water was appropriated prior to statehood.
- Highly sensitive to drought
- Legal uncertainties associated with the adjudication and the definition of what is surface water and groundwater.

Why are Planning and Studies Needed?

- Water is often not available when you need it.
 - Seasonal cycles
 - Drought and flood cycles
- Groundwater is underground and can't be seen directly.
- The quality of water can be highly variable, but it can be treated.
- Water is heavy
 - It takes a lot of energy to lift it from the ground or a river.
 - It takes expensive structures to store and transport.



Why are Planning and Studies Needed? ...cont.

■ GROWTH!!!

- With growth comes increasing demands on an already limited resource

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- **What is happening in Rural Arizona with water?**

What is happening in Rural Arizona?

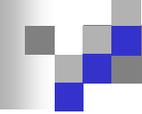


- An estimated 300,000+ lots are proposed to be developed in three groundwater basins in Mohave County.
- The Coconino Plateau is projected to experience an unmet water demand of more than 25,000 acre-feet annually by the year 2050.
- Ft. Huachuca is in jeopardy of not being reauthorized unless the Sierra Vista Subwatershed can reach sustainability by 2011

What is happening in Rural Arizona?

- continued -

- An estimated 35-40,000+ lots are proposed to be developed in the Benson Subwatershed of the San Pedro groundwater basin.
- **An estimated 10,000 lots are proposed to be developed in the Upper Gila Groundwater basin**
- **Payson** is projected to experience an unmet water demand of about 3,000 ac-ft annually by the year 2044
- **Groundwater mining in the Willcox basin has been occurring since 1953 and peaked at about 280,000 acre-feet in 1974. Mining has been occurring for the past 10 years at an average rate of around 90,000 acre-feet.**

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- **What is the State doing to assist Rural Arizona with water issues?**
 - **What has been result of the State's and Rural Arizona's efforts?**

What is the State doing to Assist Rural Arizona with Water Planning?

- ◇ Throughout the 1990's ADWR encouraged the establishment of watershed partnerships around the state for the purpose of developing regional water resource management plans
- ◇ In 1999 the Rural Watershed Initiative was established to assist Rural Arizona in funding water related studies and \$1.2 Million were allocated in FY2000

What is the State doing to Assist Rural Arizona with Water Planning? Cont.

- ◇ From FY2000 to FY2007 the State allocated more than \$5.9 million for groundwater studies and planning activities.
- ◇ More than \$17 million in matching funds have been generated as a result of the RWI for the same time period.
- ◇ In FY2008 the State allocated \$1.9 million for additional studies and planning activities

What is the State doing to Assist Rural Arizona with Water Planning? Cont.



- ◇ ADWR annually measures about 800 wells in Rural Arizona
- ◇ ADWR conducts intensive water level investigations in selected groundwater basins every year

What is the State doing to Assist Rural Arizona with Water Planning? Cont.

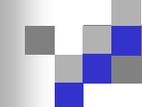


- ◇ ADWR has developed partnerships with the US Geological Survey, Bureau of Reclamation, Corp of Engineers and other Federal agencies to obtain technical and financial assistance.
- ◇ ADWR is developing a statewide rural water atlas, which is due to be complete in 2007

What is the State doing to Assist Rural Arizona with Water Planning? Cont.



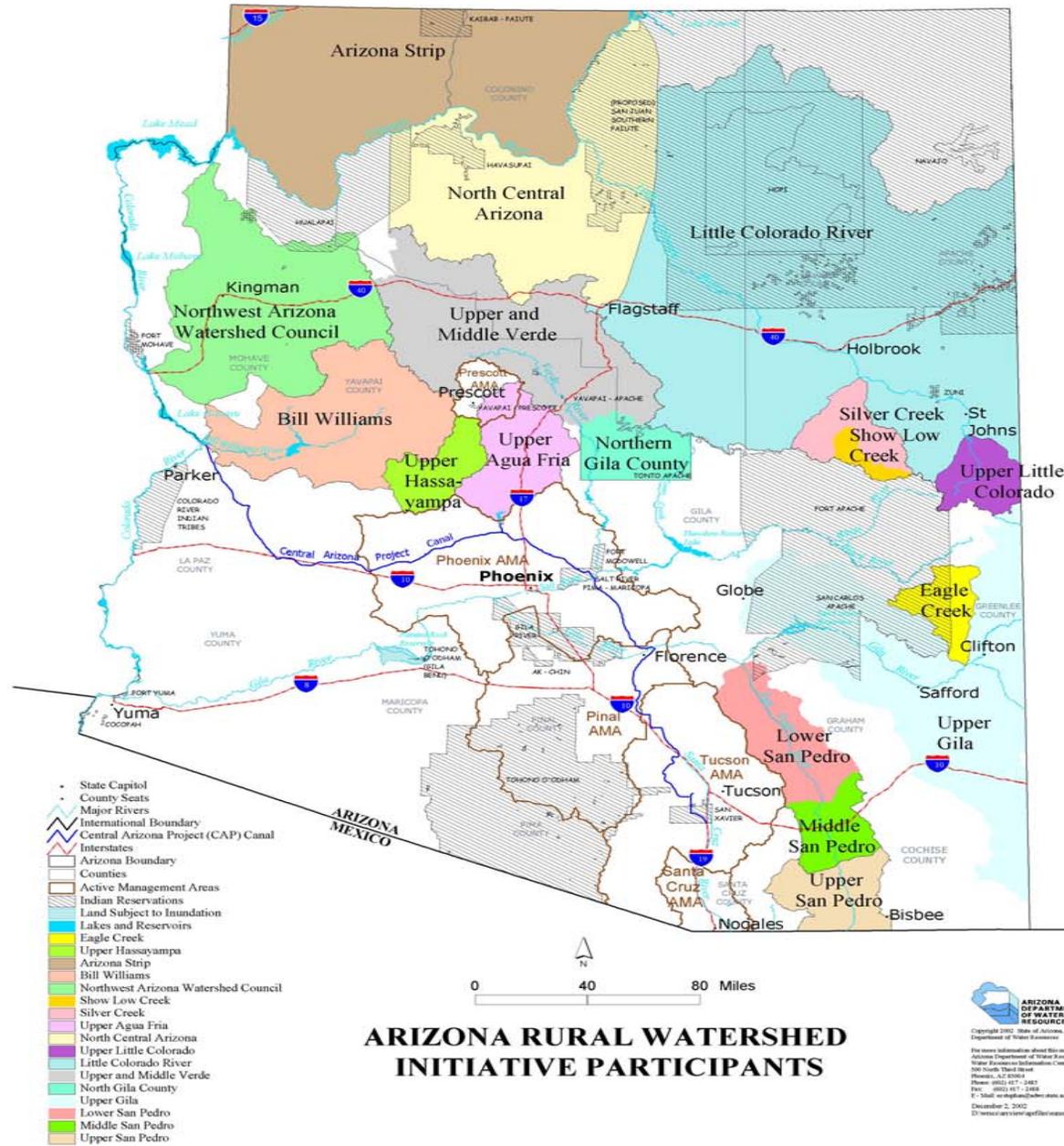
- ◇ ADWR and the Governor's office have established the Statewide Water Advisory Group.



What has been the result of the State's and Rural Arizona's efforts?



- ◇ The Department is currently working with 14 Watershed Partnerships around the State to develop water resource management plans and develop solutions to identified problems



- State Capital
- County Seats
- Major Rivers
- International Boundary
- Central Arizona Project (CAP) Canal
- Interstates
- Arizona Boundary
- Counties
- Active Management Areas
- Indian Reservations
- Land Subject to Inundation
- Lakes and Reservoirs
- Eagle Creek
- Upper Hassayampa
- Arizona Strip
- Bill Williams
- Northwest Arizona Watershed Council
- Show Low Creek
- Silver Creek
- Upper Agua Fria
- North Central Arizona
- Upper Little Colorado
- Little Colorado River
- Upper and Middle Verde
- North Gila County
- Upper Gila
- Lower San Pedro
- Middle San Pedro
- Upper San Pedro



ARIZONA RURAL WATERSHED INITIATIVE PARTICIPANTS


ARIZONA DEPARTMENT OF WATER RESOURCES
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 December 2, 2002
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What has been the result of the State's and Rural Arizona's efforts...cont?



- ◇ Comprehensive groundwater studies have been completed in the Upper San Pedro, Verde, Coconino Plateau and Mogollon Highlands watersheds.
- ◇ Comprehensive groundwater studies are currently underway in the Benson, Willcox, Douglas, and Mohave County areas.
- ◇ One numeric groundwater model has been completed and another regional numeric groundwater model is due to be complete in 2007

What has been the result of the State's and Rural Arizona's efforts...cont?



- ◊ Water Supply Appraisal Studies have been completed in the Upper San Pedro and Coconino Plateau areas and one is very nearly complete for the Mogollon Highlands areas.
- ◊ Regional solutions have been identified and are being evaluated to meet projected water demands in the Upper San Pedro, Coconino Plateau, and Mogollon Highlands watersheds.

What has been the result of the State's and Rural Arizona's efforts...cont?



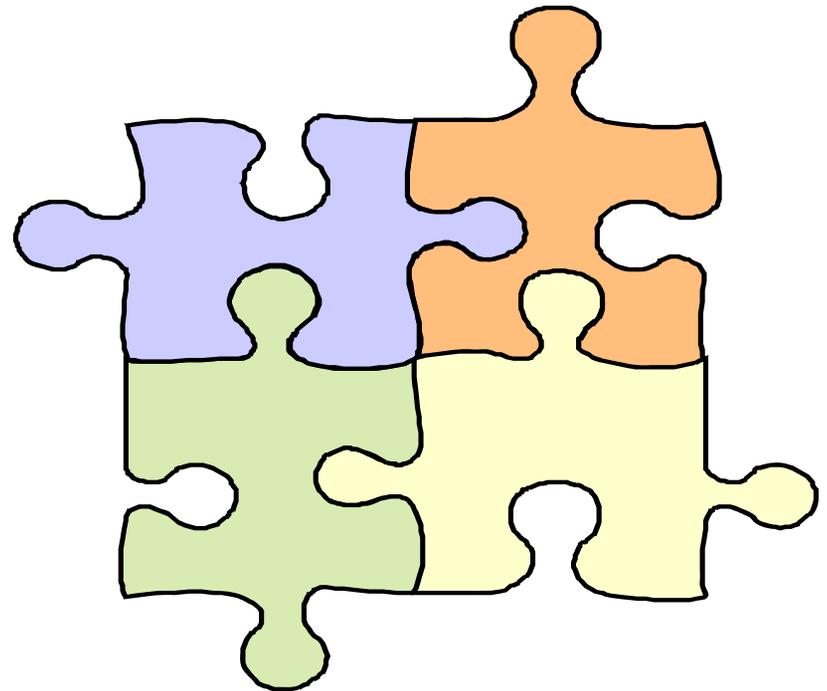
- ◊ The Yavapai Water Advisory Committee is exploring the idea of having a Water Supply Appraisal Study conducted for the Verde Watershed.
- ◊ Water Budgets have been or are being completed in the Upper San Pedro, Verde, Coconino, Mogollon Highlands, Upper Little Colorado, Upper Bill Williams, and Upper Agua Fria watersheds

So what have we learned?

- There is no better time to begin water resource planning than yesterday!
- Water resource planning should begin even if there is little or no technical data available
- Planning is essential for ensuring the availability of an adequate water supply for the future

Summary

- Physical supply of water is a primary concern in Rural Arizona
- Planning and Studies are Critical!!!
- The STATE is Committed to assisting and supporting the efforts and activities of Rural Arizona in Planning, Managing and ensuring the sustainability of their Water Resources!!!





THANK YOU