

# TOWN OF PAYSON

## SECURING & CONSERVING MUNICIPAL WATER SUPPLIES

### *WATER RESOURCE DEVELOPMENT IN A WATER SCARCE AREA*

State Wide Water Resources Advisory Group  
June 2<sup>nd</sup>, 2006

# TOWN OF PAYSON

## WATER DEVELOPMENT CHALLENGES FOR THE TOWN OF PAYSON

- PAYSON WATER SUPPLY FROM 43 IN-TOWN AND 1 OUT OF TOWN GROUNDWATER WELLS
- FRACTURED GRANITE BEDROCK AQUIFER ALLOWS MOSTLY LOW YIELD WELLS
- NO NEARBY WATER PRODUCER TO PARTNER WITH FOR NEW/BACKUP WATER SUPPLY
- CONFLICT WITH DOWNSTREAM WATER RIGHT HOLDERS
- GROWTH PRESSURE ON LIMITED EXISTING WATER SUPPLY
- STATE LAWS NOT CONDUCIVE TO GROWTH MANAGEMENT VIS A VIS AVAILABLE WATER SUPPLY
- IF WE CAN'T MANAGE GROWTH WE MUST PRODUCE MORE WATER!
- PRODUCING MORE WATER OFTEN LEADS TO CONFLICT WITH NEIGHBORS

# TOWN OF PAYSON

## PAYSON GROUNDWATER MANAGEMENT

- 1998 *WATER RESOURCES MANAGEMENT PLAN* DEFINED LONG TERM VIABILITY OF IN-TOWN GROUNDWATER SUPPLY
- LONG TERM SAFE YIELD OF 2,253 A/F YEAR
- SUPPLY GOOD FOR 20,000 – 22,500 POPULATION
- PLAN ASSUMES 89 GPCPD, ACHIEVED 87 GPCPD – 2005
- 2006 POPULATION OF 15,000
- MASTER PLAN OF 36,000 – 44,000 POPULATION BY 2044
- PLAN RECOMMENDED:
  - ✓ MANDATORY CONSERVATION
  - ✓ MAXIMUM EFFLUENT REUSE
  - ✓ GROWTH CONTROL MEASURES
  - ✓ NEW WATER SUPPLY DEVELOPMENT

# TOWN OF PAYSON

## **IMPLEMENTATION OF MANAGEMENT PLAN – CONSERVATION RESOLUTION NO. 1742 –**

- NO NEW TURF**
- MANDATORY COMMERCIAL RESTROOM FIXTURE RETROFITS**
- WATERLESS URINALS ONLY**
- YEAR ROUND WATER CONSERVATION RATES**
- MANDATORY LOW WATER USE LANDSCAPING REQUIREMENTS**
- HOME, SCHOOL, PUBLIC BUILDINGS, NURSING HOME FREE TOILETS AND WATERLESS URINALS PROGRAM**
- POTABLE WATER USE PROHIBITED FOR GRADING AND DUST CONTROL PROJECTS**
- FREE LOW WATER USE FIXTURES FOR ALL RESIDENTIAL AND COMMERCIAL BUILDINGS ON TONTO APACHE RESERVATION**
- \$1.00 SURCHARGE ON ALL WATER BILLS FOR COMMERCIAL WATER CONSERVATION ASSISTANCE - \$85,000.00/YR**
- NO MISTERS, SPRAY IRRIGATION, OUTSIDE POOLS, MOTEL ROOM SPAS, FLUSH URINALS, R.O. WATER TREATMENT IN WATER VENDING MACHINES, WATER FOUNTAINS LARGER THAN 50 GALLONS, NO EVAP COOLING IN NEW BUILDINGS OVER 3,000 SQ FT, ETC.**

# TOWN OF PAYSON

## MAXIMUM EFFLUENT REUSE

- **COMPLETED RUMSEY PARK EFFLUENT TO GROUNDWATER RECHARGE STUDY AND PILOT PROJECT.**
- **COMPLETED GREEN VALLEY LAKE PARK WATER RECLAMATION PROJECT – 3 LAKES, 17 ACRES TURF, PARK AMENITIES - \$6,000.000.00**
- **365 A/F YEAR RECHARGE OF HIGH QUALITY EFFLUENT THROUGH LAKE BOTTOMS TO SURROUNDING TOWN WELLS**
- **NO NEW TURF – FUTURE EFFLUENT SUPPLIES FOR GROUNDWATER RECHARGE USES**

# TOWN OF PAYSON

## GROWTH CONTROL MEASURES

- NEW SUBDIVISIONS LIMITED TO 20 LOTS
- NEW COMMERCIAL PROJECTS LIMITED TO 150,000 GALLONS PEAK MONTH WATER USE =
- 30 CONDOS/APTS, 44 ROOM MOTEL, 66 BED NURSING HOME, 100,000 SQ FT PROFESSIONAL OFFICE SPACE, 150,000 SQ FT RETAIL
- STANDARDS NEGOTIABLE FOR INNOVATION AND SPECIFIC PROJECT WATER PERFORMANCE OBJECTIVES
- PAYSON UTILIZES “SAFE YIELD” PRINCIPAL
- PAYSON CORPORATE STRATEGIC PLAN STATES THAT WE WILL NOT GROW BEYOND PROVEN WATER SUPPLY
- TOWN COUNCIL HAS CONSIDERED LOWERING SUBDIVISION APPROVALS TO 5 – 10 LOTS
- TOWN COUNCIL HAS CONSIDERED GROWTH MORATORIUM

# TOWN OF PAYSON

## NEW WATER SUPPLY DEVELOPMENT

- DEEPEN EXISTING IN-TOWN WELLS
- DEVELOPERS CONSTRUCTED NEW WELLS THAT DIDN'T INFLUENCE EXISTING TOWN WELLS (5 WELLS). NO FUTURE WELLS POSSIBLE AS ALL IN-TOWN GROUNDWATER IS UNDER INFLUENCE OF EXISTING TOWN WELLS
- EXPLORATORY WELL PROJECTS ON PUBLIC LANDS WEST AND NORTHEAST OF PAYSON NOT SUCCESSFUL
- EXPLORATORY WELL PROJECTS ON PRIVATE LANDS WEST AND SOUTH OF PAYSON NOT SUCCESSFUL
- EXPLORATORY WELL PROGRAM NORTHEAST OF PAYSON AWAITING USFS DECISION (7 YEAR PERMIT PROCESS TO DATE)
- EFFLUENT TO GROUNDWATER RECHARGE PROGRAM AWAITING SUFFICIENT VOLUME OF EFFLUENT (CURRENT EFFLUENT OVER COMMITTED)
- DEVELOPER SUPPLIED GROUNDWATER PENDING FROM COUNTY AREA EAST OF PAYSON
- ADDITIONAL GROUNDWATER DEVELOPMENT SUBJECT TO CHALLENGE FROM DOWNSTREAM WATER RIGHT HOLDERS

# TOWN OF PAYSON

## KEY TO LONG TERM WATER SUPPLY

- COLLOBORATIVE EFFORTS WITH DOWNSTREAM WATER RIGHT HOLDERS
- DEMONSTRATE RESPONSIBLE GROWTH MANAGEMENT EFFORTS VIS A VIS AVAILABLE WATER SUPPLY
- DEMONSTRATE LEGAL AND POLITICAL ASTUTENESS
- DEVELOP COMPREHENSIVE WATER MANAGEMENT POLICY – ALL TYPES OF WATER – GOOD OR BAD
- ATTITUDE ADJUSTMENT - “I’D RATHER *SWITCH* THAN *FIGHT*”
- ALL ARIZONA COMMUNITIES ARE AFFECTED BY ONE WATER SUPPLIER’S DECISIONS – ZERO SUM GAME
- “GET PROFESSIONAL” – LEGAL, TECHNICAL, STAFF DEVELOPMENT, PUBLIC RELATIONS, ETC.
- PROFESSIONAL WATER RESOURCE MANAGERS RECOMMENDED
- PUBLIC LANDS NOT BEST, SECURE SOURCE OF PUBLIC WATER SUPPLY

# TOWN OF PAYSON

## PAYSON LONG TERM PARTNERSHIPS

- **“MAKE THE BEST OF WHAT YOU HAVE”**
- **DOWNSTREAM WATER RIGHT HOLDERS HAVE INCENTIVE TO ASSIST RURAL AREAS**
- **SALT RIVER PROJECT/CONGRESSIONAL DELEGATION/TOWN OF PAYSON SECURE DISTANT BLUE RIDGE RESERVOIR SURFACE WATER SOURCE FOR PAYSON VIA ARIZONA WATER RIGHTS SETTLEMENT ACT**
- **BUREAU OF RECLAMATION INSTRUMENTAL IN LOCAL REGIONAL WATER SUPPLY PLANNING EFFORTS**
- **RESPONSIBLE WATER PLANNING AND GROWTH MANAGEMENT WORTH THE “PRICE OF ADMISSION”**
- **3,000 AF/YR BLUE RIDGE SURFACE WATER + 2,253 LOCAL GROUNDWATER + 1,000 AF/YR EFFLUENT REUSE = 6,253 AF/YR = PAYSON BUILDOUT OF 44,000 POPULATION WATER BUDGET OF 6,000 AF/YR**

# Mogollon Rim

## Water Resources Management Study



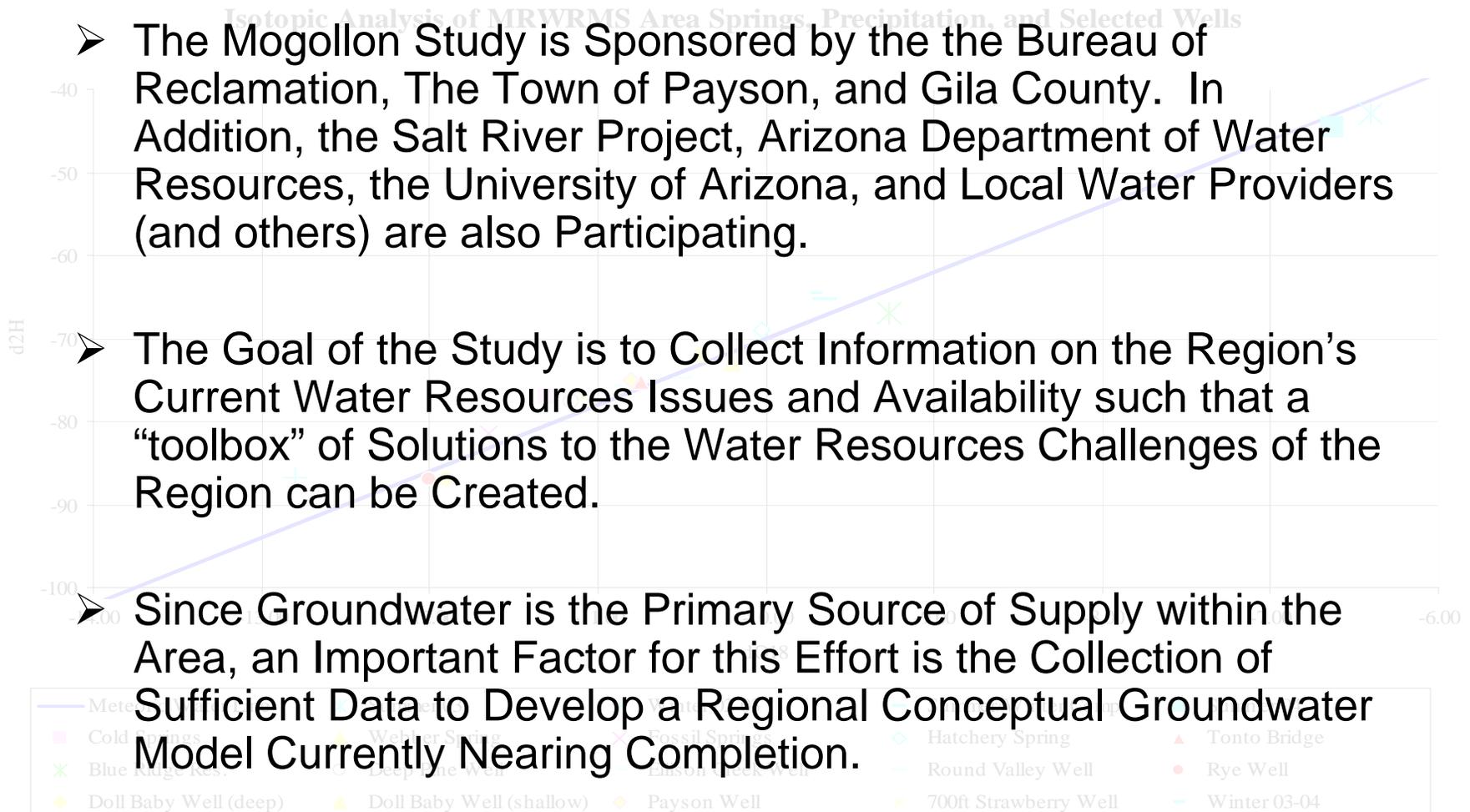
# Mogollon Rim Water Resources Management Study

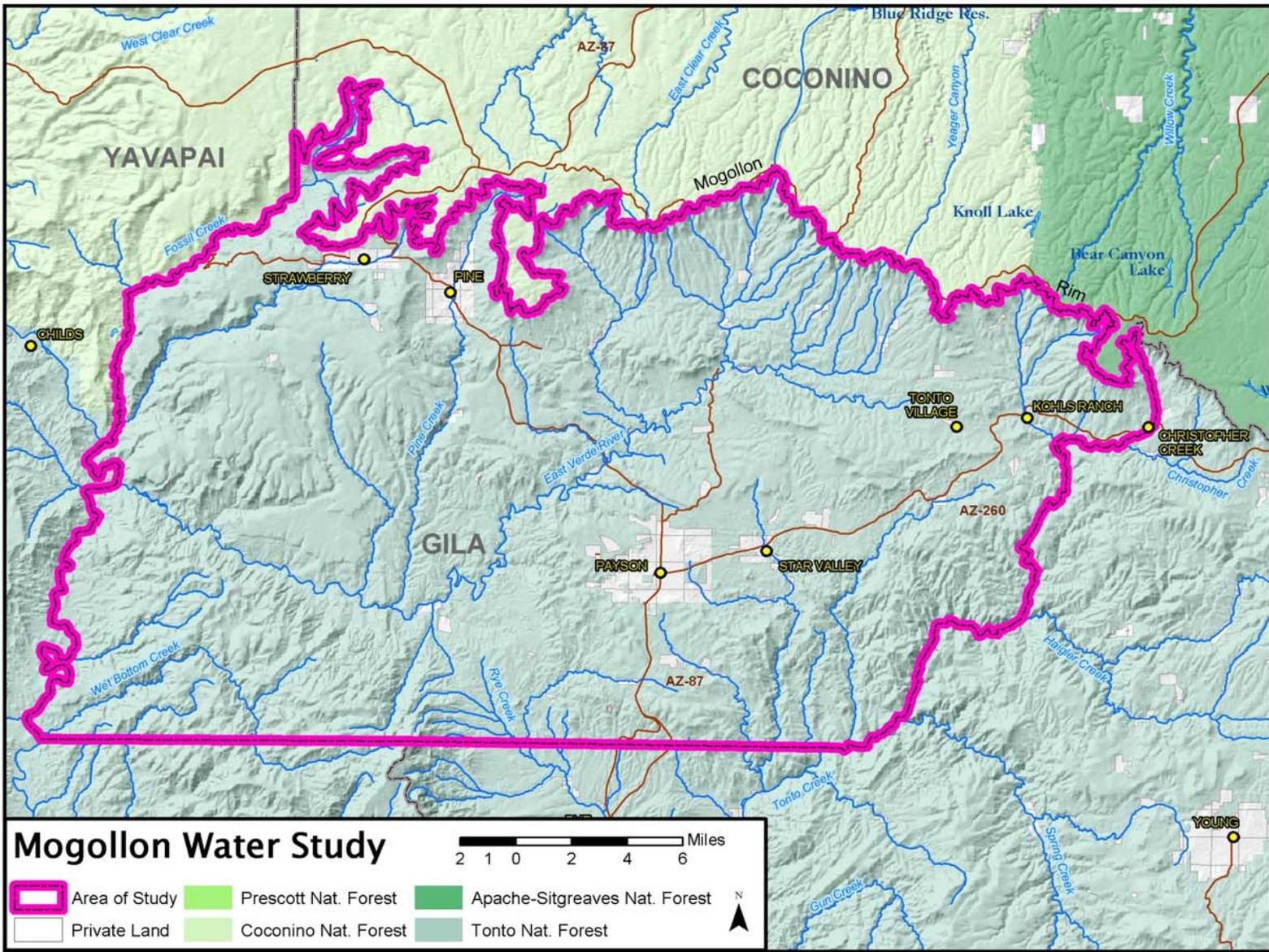
“MRWRMS” or “Mogollon Study”

➤ The Mogollon Study is Sponsored by the the Bureau of Reclamation, The Town of Payson, and Gila County. In Addition, the Salt River Project, Arizona Department of Water Resources, the University of Arizona, and Local Water Providers (and others) are also Participating.

➤ The Goal of the Study is to Collect Information on the Region’s Current Water Resources Issues and Availability such that a “toolbox” of Solutions to the Water Resources Challenges of the Region can be Created.

➤ Since Groundwater is the Primary Source of Supply within the Area, an Important Factor for this Effort is the Collection of Sufficient Data to Develop a Regional Conceptual Groundwater Model Currently Nearing Completion.





# Mogollon Water Study

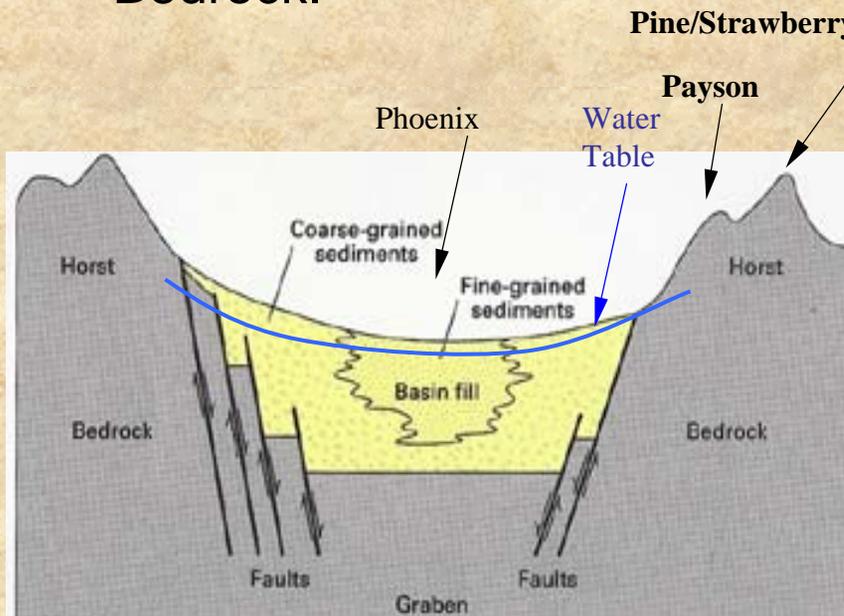


- |   |  |   |
|---|--|---|
|  Area of Study |  Prescott Nat. Forest |  Apache-Sitgreaves Nat. Forest |
|  Private Land  |  Coconino Nat. Forest |  Tonto Nat. Forest             |

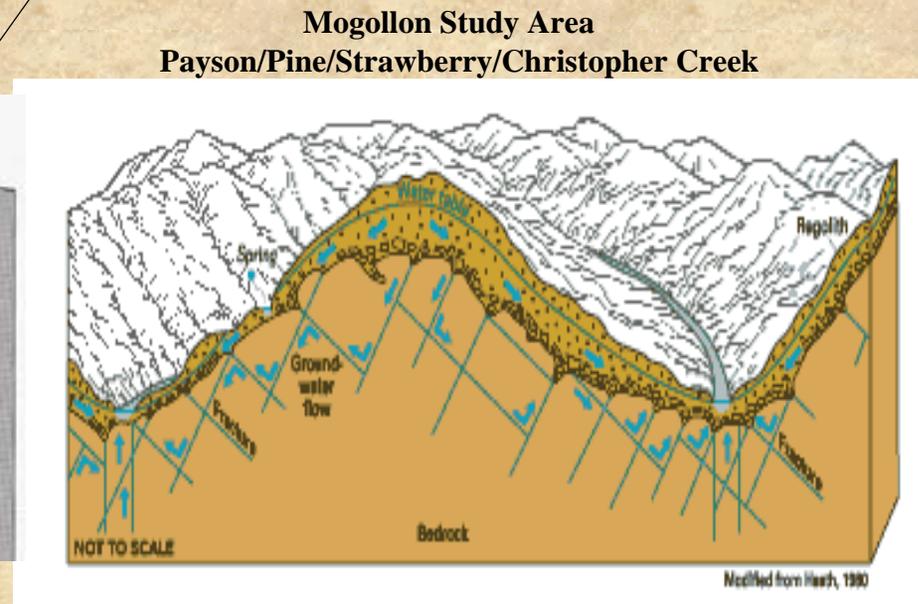


# Regional Groundwater Availability

- In the Phoenix Area, Groundwater is Pumped from Deep Sand and Gravel Basins.
- In the Mogollon Study Area, Groundwater is Pumped from Fractured Bedrock.



Basin Fill Aquifer -- Phoenix



Fractured Bedrock Aquifer – Payson Area

# Mogollon Study Area Regional Groundwater Systems

- Groundwater, in all but Shallow Alluvial Zones, is Fault and Fracture Controlled.
- The Movement and Occurrence of Groundwater is Related to Depth, Precipitation Source (Recharge Source), Geology, and Topography.
- Understanding the Region's Groundwater System is Complicated by Structural Features and Localized Mixing of Aquifer Systems and Sources.
- Because of the Importance of Both Structural Controls and Both Local and Distance Sources, Groundwater Sub-Basins Where Defined to Aid in Developing the Regional Hydrogeological Framework the MRWRMS is now Finalizing.

# MRWRMS “Toolbox” of Solutions

- Importation of Surface water via Blue Ridge Reservoir (Craigin Reservoir) is Extremely Important to Payson and Plays a Primary Role in Achieving Sustainability within the Region
- Limited Development of Unutilized Deep Regional Groundwater Supplies in Areas of Low Growth Potential and Limited Long-Term Demand
- Utilization of Reclaimed Sources via Recharge and/or Reuse wherever Possible and as they Become Available Into the Future
- The Conjunctive Utilization of Each Water Source in Concert with Conservation and Regional Partnerships are Key in Achieving and Maintaining Sustainability
- Restoring and Maintaining a Healthy Watershed is Vital (Vegetative Management)

