

Western Plateau Planning Area

Background

The Western Plateau Planning Area is located in the northwest portion of the State and is comprised of the Peach Springs Groundwater Basin in the west and portions of the Coconino Plateau Groundwater Basin in the east. The majority of the Planning Area lies within Coconino County, with portions of Yavapai County in the south and Mohave County in the west. Communities in the Planning Area include Grand Canyon West, Peach Springs, Truxton, Frazier Wells, and Audley in the Peach Springs Basin. The communities of Supai Village and Rose Well are in the Coconino Plateau Basin portion of the Planning Area.



A large portion (45 percent) of the land in this Planning Area is federally reserved for tribal communities concentrated in the northern boundary of the Planning Area along the Grand Canyon and Colorado River (see Figure P.A. 22-1). The largest reservation is the Hualapai Reservation, straddling the Peach Springs and Coconino Plateau basins. The Havasupai Reservation is in the Coconino Plateau Basin. Federal agencies including the National Park Service (NPS) and US Bureau of Land Management (BLM) own five percent each of the land in the Planning Area, which includes portions of the Grand Canyon National Park. Less than five percent is managed by the USDA Forest Service (Forest Service), the Kaibab National Forest, in the far eastern portion of the Planning Area. In the Peach Springs Basin, State Trust Land holdings are assembled in a checker board pattern with private lands in the eastern portion of the Basin, each holding 20 percent of the land within the Planning Area. In the Coconino Plateau Basin, there is a large concentration of State Trust Land holdings in the central part of the Basin, with a large concentration of private lands adjacent to the south, with a checkerboard pattern of private and State Trust lands along the southern boundary of the Planning Area.

Water Supply Conditions

Groundwater

The Western Plateau Planning Area is located in the Colorado Plateau Physiographic Province. The main productive aquifers in this province are large regional aquifers consisting of sandstone and limestone. Some formations produce relatively little, while some fracture zones are highly productive.

While some shallow perched aquifers are present in the Planning Area, the regional aquifers are deep and production can be highly variable depending upon location. The shallowest well of record in the Peach Springs Basin is near Truxton at 60 feet below land surface. Deep regional aquifers in the Peach Springs Basin are as deep as 1,341 feet below land surface. Groundwater in storage in the Peach Springs Basin is estimated to be 4.0 MAF. Groundwater levels in this portion of the Planning Area have been rising at 0.4 feet per year based on water level surveys conducted in the 1990s through the mid to late 2000s (see Figure P.A. 22-2).

In the Coconino Plateau Basin, shallow wells near Rose Well were measured at 25 feet below land surface. Production wells near Williams (just outside of the Planning Area to the south) are 2,700 feet in depth. Groundwater in storage in the Coconino Plateau Basin is estimated to be at least 3.0 MAF, although the only study available covered only a portion of the Basin. Groundwater levels in the Basin were reported to be declining at 0.5 feet per year from the 1990s through the mid to late 2000s.

Surface Water

Other than the Colorado River in the northernmost portion of the Planning Area, there are no perennial or intermittent streams in the Planning Area (see *Figure P.A. 22-3*). There is no reported surface water storage in the Peach Springs Basin, although there are five reservoirs in the Coconino Plateau Basin totaling 1,517 acre-feet in storage. The largest is on State Trust Lands with 967 acre-feet of storage.

Reclaimed Water

The lack of concentrated development limits the existence of centralized waste water collection and treatment systems. This limits the opportunities for reclaimed water use. Most users rely upon hauled water or exempt wells (those wells with a pump capacity of less than 35 gallons per minute) and septic systems for wastewater treatment and disposal. Two communities, Peach Springs and Supai Village, have small wastewater treatment systems generating less than 200 acre-feet per year of reclaimed water. Both systems rely upon evaporation and seepage ponds for disposal.

Ecological Resources

Portions of the Western Plateau Planning Area along the Colorado River have been designated as critical habitat under the Endangered Species Act (see *Figure P.A. 22-3*). These areas are limited to federal and tribal lands.

Water Demands

Table P.A. 22-1, below, presents the baseline and projected water demands for the Western Plateau Planning Area. Municipal use is the largest water demand sector and it is projected to increase slightly throughout the planning period. Depending on the outcome of the outstanding claims of the Hualapai and Havasupai Indian Tribes, all other uses are relatively small and are not expected to increase at this time.

Characteristics Affecting Future Demands and Water Supply Availability

Unresolved Indian Water Rights Claims

The Hualapai and Havasupai Indian Tribes both have separate outstanding water rights claims, primarily to the Colorado River. Resolution of these claims, ideally through comprehensive water right settlements, will clarify the availability of water supplies for future growth in the Planning Area.

Land Ownership

Significant portions of this Planning Area are under federal ownership, limiting the potential for future development or raising questions regarding the availability of water supplies for growth on non-federal lands. This ownership is also often fragmented, with federal, State, and private land holdings assembled in a "checkerboard" fashion that further complicates the development and execution of comprehensive land management strategies.

Protected Species and Habitat

The presence of a listed species may be a critical consideration in water resource management and supply development in a particular area.

Table P.A. 22-1. Projected Water Demands (in acre feet) - Western Plateau Planning Area

Sector	2010	2035	2060
Agriculture	0	0	0
Dairy	0	0	0
Feedlot	0	0	0
Municipal	551	749	914
Other Industrial	0	0	0
Mining	0		
High		300	300
Low		300	300
Power Plants	0		
High		0	0
Low		0	0
Rock Production	1		
High		38	45
Low		16	19
Turf	0		
High		0	0
Low		0	0
Total (High)	552	1,087	1,259
Total (Low)	552	1,065	1,233

Strategies for Meeting Future Water Demands

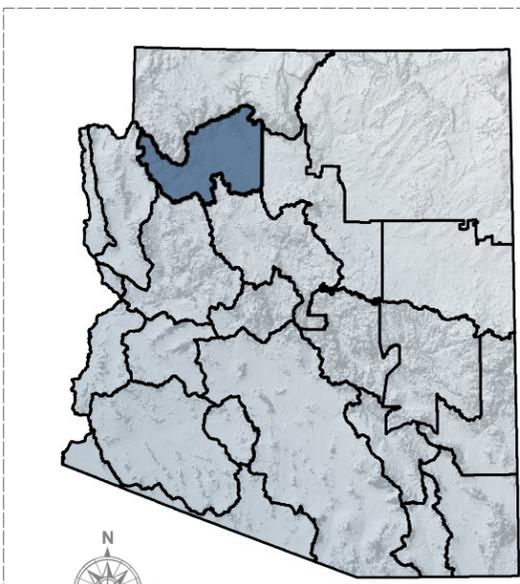
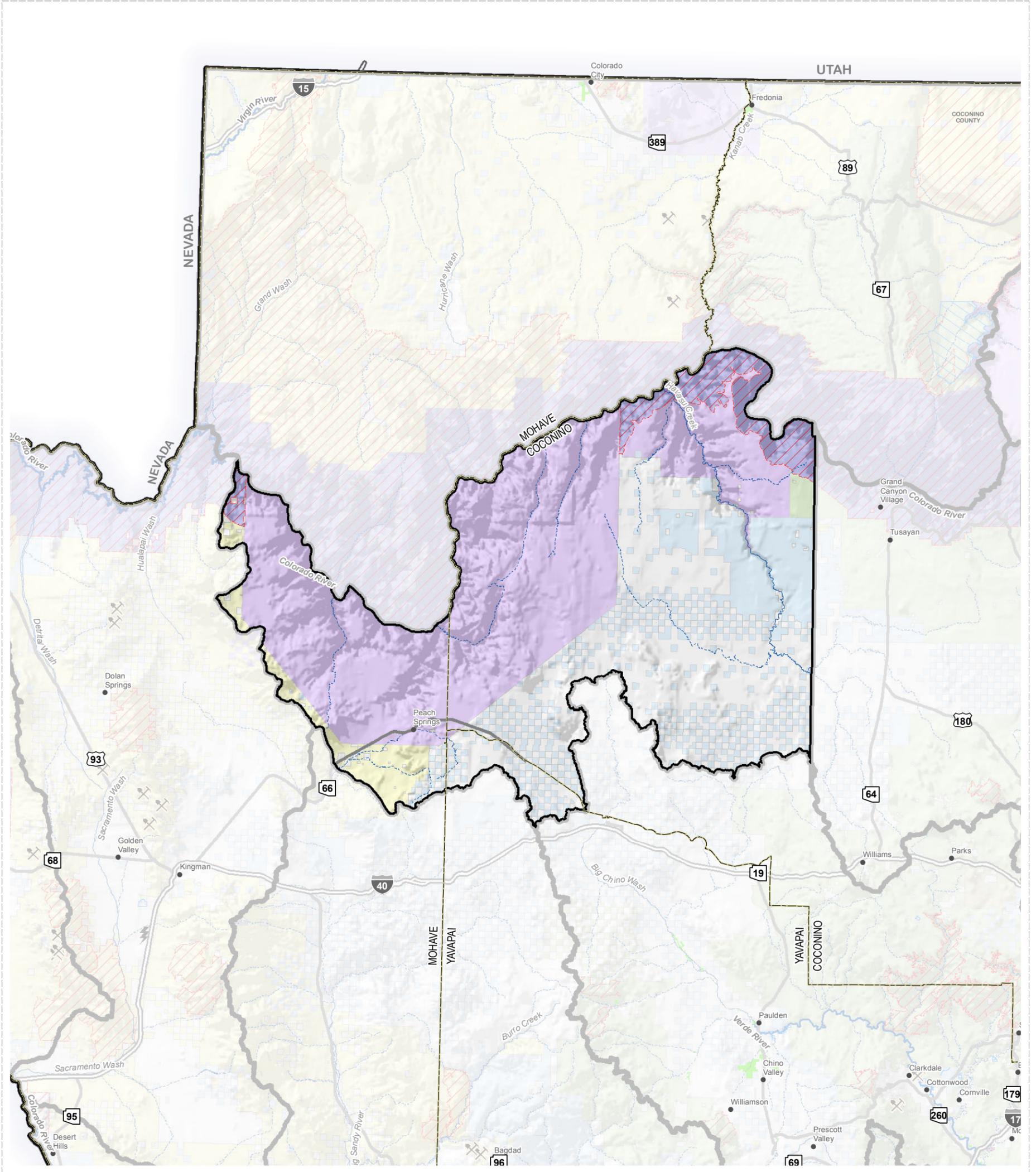
Resolution of Indian and Non-Indian Water Rights Claims

The Hualapai Tribe, the State of Arizona, and several non-Indian water users are currently engaged in settlement discussions, but details of those discussions are not available at this time. No formal discussions have begun on the Havasupai Tribe's claims, although the Tribe and the State of Arizona have requested that the federal government begin these discussions. Until these claims are quantified and settled, uncertainty regarding the extent and priority of water rights in this Planning Area will make it difficult to identify strategies for meeting the projected water demands.

Groundwater Modeling

ADWR believes that there are sufficient groundwater supplies to meet the projected demands for this area. Because projected water demand increases are still small for this area and the tribal claims have yet to be resolved, no strategies are being developed at this time. However, there is a need for increasing knowledge of the local groundwater system and developing a comprehensive hydrologic model and water budget to assess the availability and long-term sustainability of water supplies in this area.

NOTE: Because GIS data for this project were acquired from multiple sources employing different land base grids and varying accuracy standards, some inconsistencies were encountered. The user is responsible for understanding the accuracy limitations of GIS data layers and is responsible for the results of any application of the data for other than their intended purpose.



MAP LOCATION
(Planning Area Boundaries)

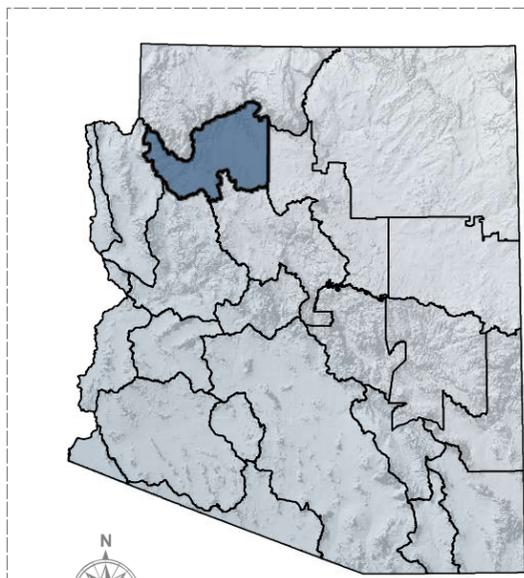
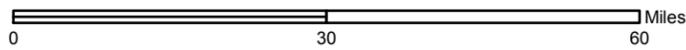
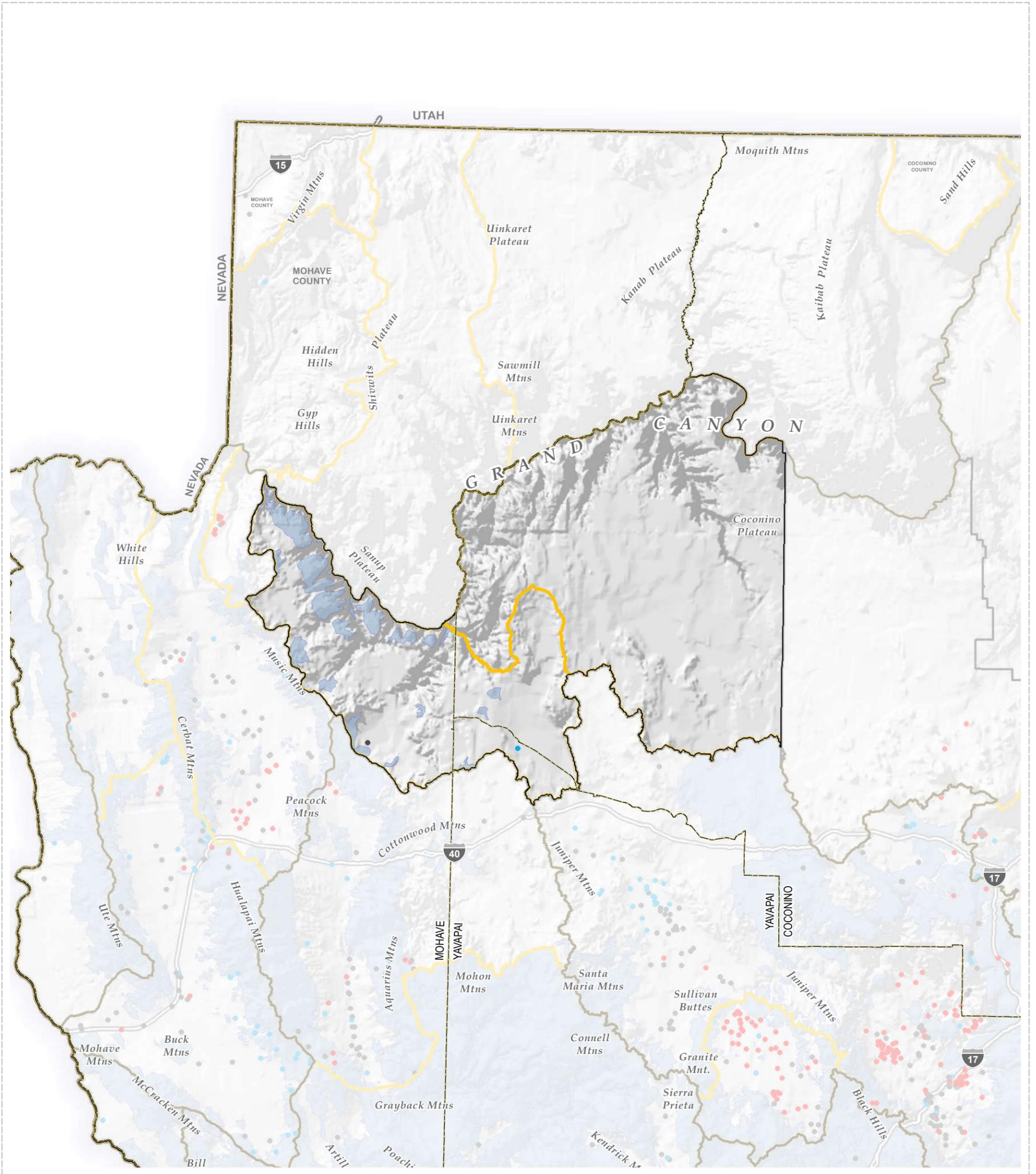
- Planning Area (ADWR)
- State (ALRIS)
- County (ALRIS)
- River or Stream (ASLD)
- Interstate (ADOT)
- Population Center (GNIS)
- Mine (ADMMR, ADWR)
- Hydroelectric Power Plant (ADEQ, ADWR)
- Thermoelectric Power Plant (ADEQ, ADWR)
- Agriculture (SWReGAP, 2004)
- Federal Conservation Land (USFS, BLM, NPS)
- State Managed Conservation Land (AZGFD, AZSP)
- BLM Land
- National Forest
- National Park
- Military Reserve
- Private and Other Land
- State Trust Land
- Tribal Land



Western Plateau Land Ownership

Figure P.A.22-1

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MAP LOCATION
(Planning Area Boundaries)

- Planning Area (ADWR)
 - State (ALRIS)
 - County (ALRIS)
 - Groundwater Basin (ADWR)
 - Area of Active Land Subsidence (ADWR)
 - Hard Rock Geology (AZ Bureau of Mines, UofA)
 - Interstate (ADOT)
- Recent Water Level Change * (1990's through 2000's)
 - Minor WL Change +5' to -5'
 - Negative
 - Positive

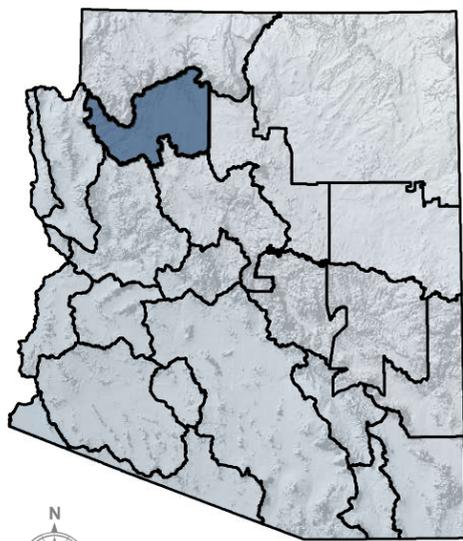
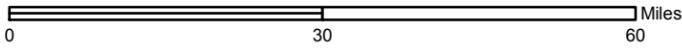
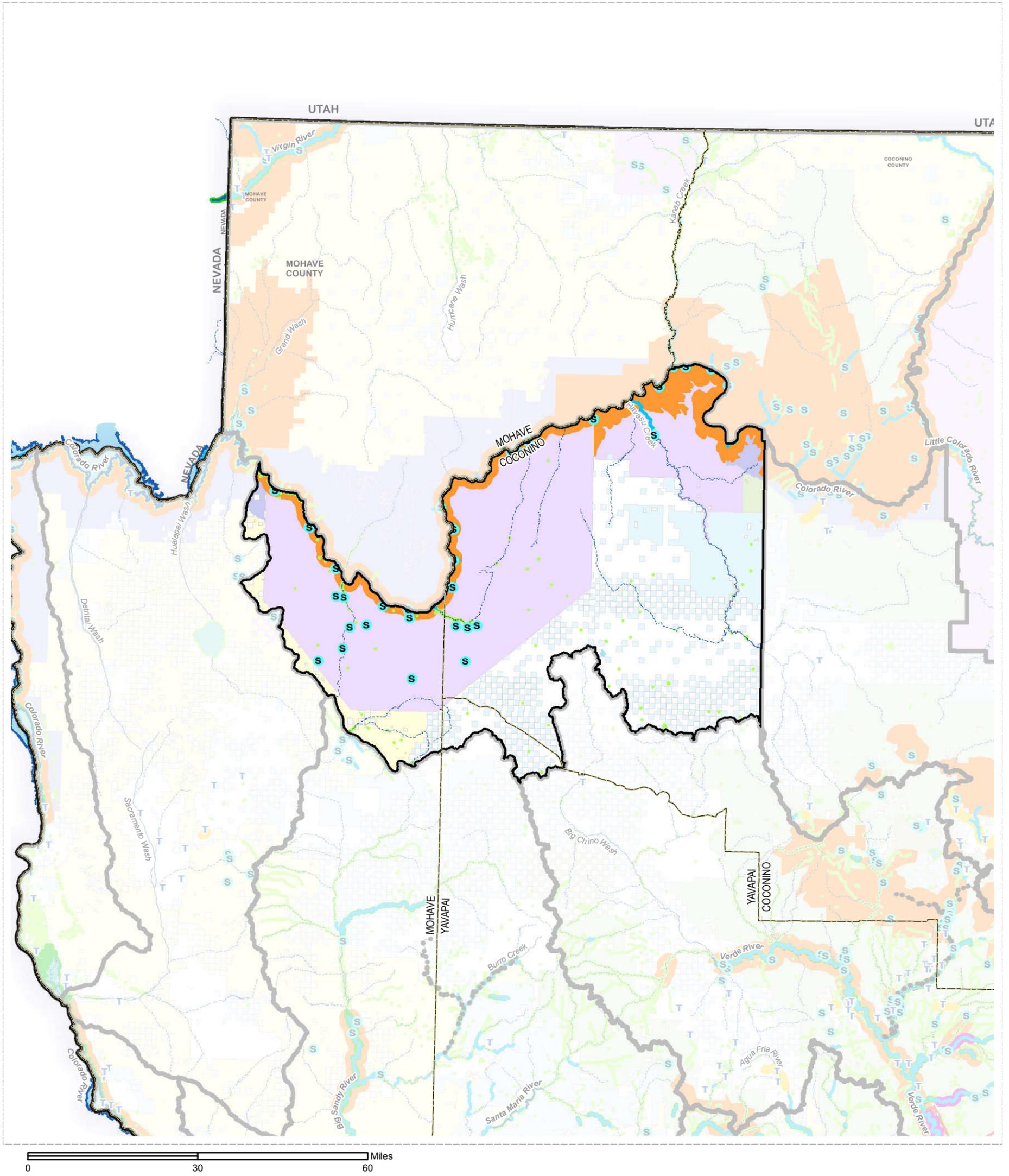
* Data provided by ADWR



Figure P.A.22-2

Western Plateau Groundwater Hydrology

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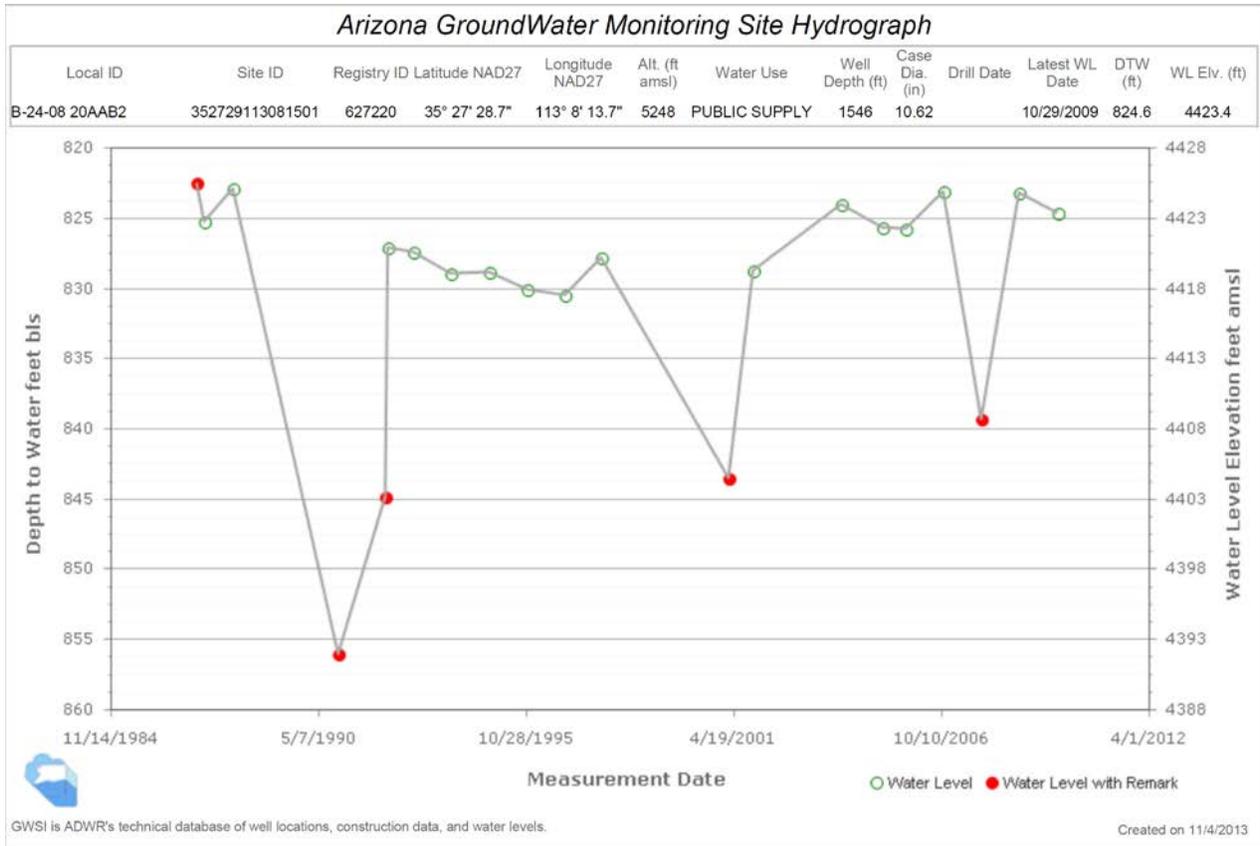
MAP LOCATION
(Planning Area Boundaries)

- Planning Area (ADWR)
- State (ALRIS)
- County (ALRIS)
- Reservoir or Lake (NHD)
- Waste Water Treatment Plant (ADEQ)
- Major Spring (ADWR, Pima County)
- Perennial Flow (ADEQ, USGS)
- River or Stream (ASLD)
- Outstanding Arizona Water (ADEQ)
- Effluent Dependent Stream (ADWR, NEMO)
- Instream Flow Certificate (ADWR)
- 1993 Riparian Inventory (AZGFD)
- Modeled Riparian Habitat (AZGFD)
- Designated ESA Critical Habitat (USFWS)
- Proposed ESA Critical Habitat (USFWS)
- Federally Designated Wild and Scenic River (USFS)
- BLM Land
- National Forest
- National Park
- Military Reserve
- Private and Other Land
- State Trust Land
- Tribal Land

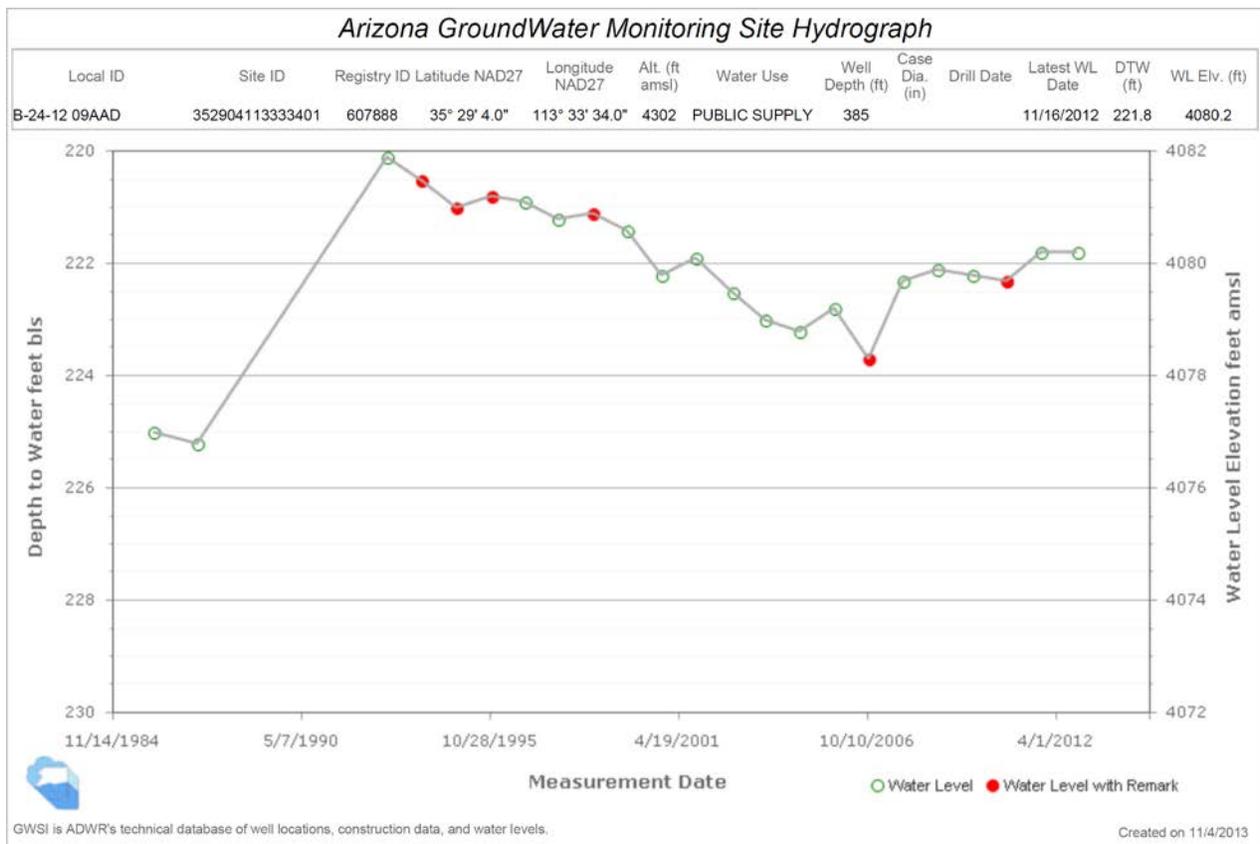


Figure P.A.22-3
Western Plateau
Surface Water and Natural Features

Peach Springs Basin – Western Plateau Planning Area



B-24-08 20AAB2 Peach Springs basin Aubrey Valley area.



B-24-12 09AAD Peach Springs basin near Truxton.