

West Borderlands Planning Area

Background

The West Borderlands Planning Area is in the southernmost portion of the state along the Mexican border between the Tucson AMA and the Yuma area. The Planning Area consists of two groundwater basins, the San Simon Wash Basin in the east and the Western Mexican Drainage Basin in the west. The Planning Area lies within Pima County to the east and Yuma County to the west. Communities within the Planning Area include Sells, Pisinemo and Lukeville.



In the San Simon Wash Basin, 99 percent of the land is within the Tohono O'odham Indian Reservation (*see Figure P.A. 21-1*). Less than one percent is split between private, US Bureau of Land Management (BLM), State Trust Lands, and the National Park Service (NPS). Within the Western Mexican Drainage Basin 61 percent of the land is managed by the US Fish and Wildlife Service (FWS) as the Cabeza Prieta National Wildlife Refuge. The NPS manages 36 percent as the Organ Pipe National Monument. Approximately two percent of the land is within the Barry M. Goldwater Air Force Range. Less than one percent is split between the Tohono O'odham Indian Reservation, State Trust Lands, and private lands. All of the private land in the Western Mexican Drainage Basin is in and around Lukeville at the US/Mexico border crossing.

Water Supply Conditions

Groundwater

The West Borderlands Planning Area lies within the Basin and Range Physiographic Province. This province is characterized by long broad alluvial valleys separated by mountain ranges, with thick productive regional alluvial aquifers.

Groundwater conditions in the Planning Area are variable. Groundwater storage in the San Simon Wash Basin is estimated to be 6.7 MAF. Groundwater levels in the San Simon Wash Basin are generally rising at an average of 0.3 feet per year (*see Figure P.A. 21-2*). Groundwater in the Basin is primarily used for irrigation followed by municipal uses. Groundwater irrigation is concentrated in the Papago Farms area south of Pisinemo. Groundwater storage in the Western Mexican Drainage Basin is estimated to be 4.1 MAF. Groundwater levels in the Basin are generally declining at an average rate of 0.8 feet per year. The majority of the groundwater use in the Basin is for domestic and municipal use.

Surface Water

There are no perennial or intermittent streams within the Planning Area (*see Figure P.A. 21-3*). The major drainage in the Planning Area is San Simon Wash which runs north to south through the central portion of the San Simon Wash Basin. The Tohono O'odham Indian Tribe operates a reservoir, Lake Menegers. With a maximum storage of 15,000 acre-feet the reservoir is used primarily to store water for irrigation.

Reclaimed Water

The communities in the Planning Area are small and widely scattered. As such, reclaimed water generation and water reuse is limited. There are two wastewater treatment plants in the San Simon

Wash Basin. The total reclaimed water production is less than 500 acre-feet per year. Disposal is through evaporation ponds. There is no known water reuse within the San Simon Wash Basin. There are no known waste water treatment facilities within the Western Mexican Drainage Basin and no known water reuse.

Water Demands

Table P.A. 21-1 illustrates the baseline and projected increase in water demands in the West Borderlands Planning Area. The majority of the growth is expected on tribal lands for municipal uses, but is anticipated to be limited.

Table P.A. 21-1. Projected Water Demands (in acre feet) – West Borderlands Planning Area

Sector	2010	2035	2060
Agriculture	500	500	500
Dairy	0	0	0
Feedlot	0	0	0
Municipal	1,024	1,495	1,881
Other Industrial	0	0	0
Mining	0		
High		0	0
Low		0	0
Power Plants	0		
High		0	0
Low		0	0
Rock Production	0		
High		127	161
Low		53	67
Turf	0		
High		0	0
Low		0	0
Total (High)	1,524	2,122	2,542
Total (Low)	1,524	2,048	2,448

Characteristics Affecting Projected Water Demands and Supply Availability

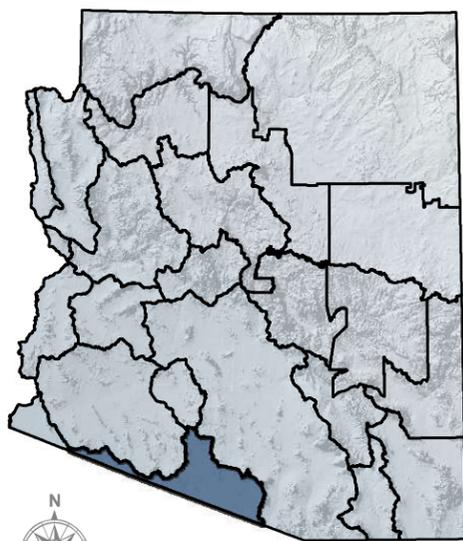
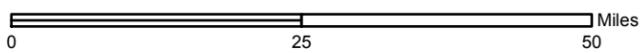
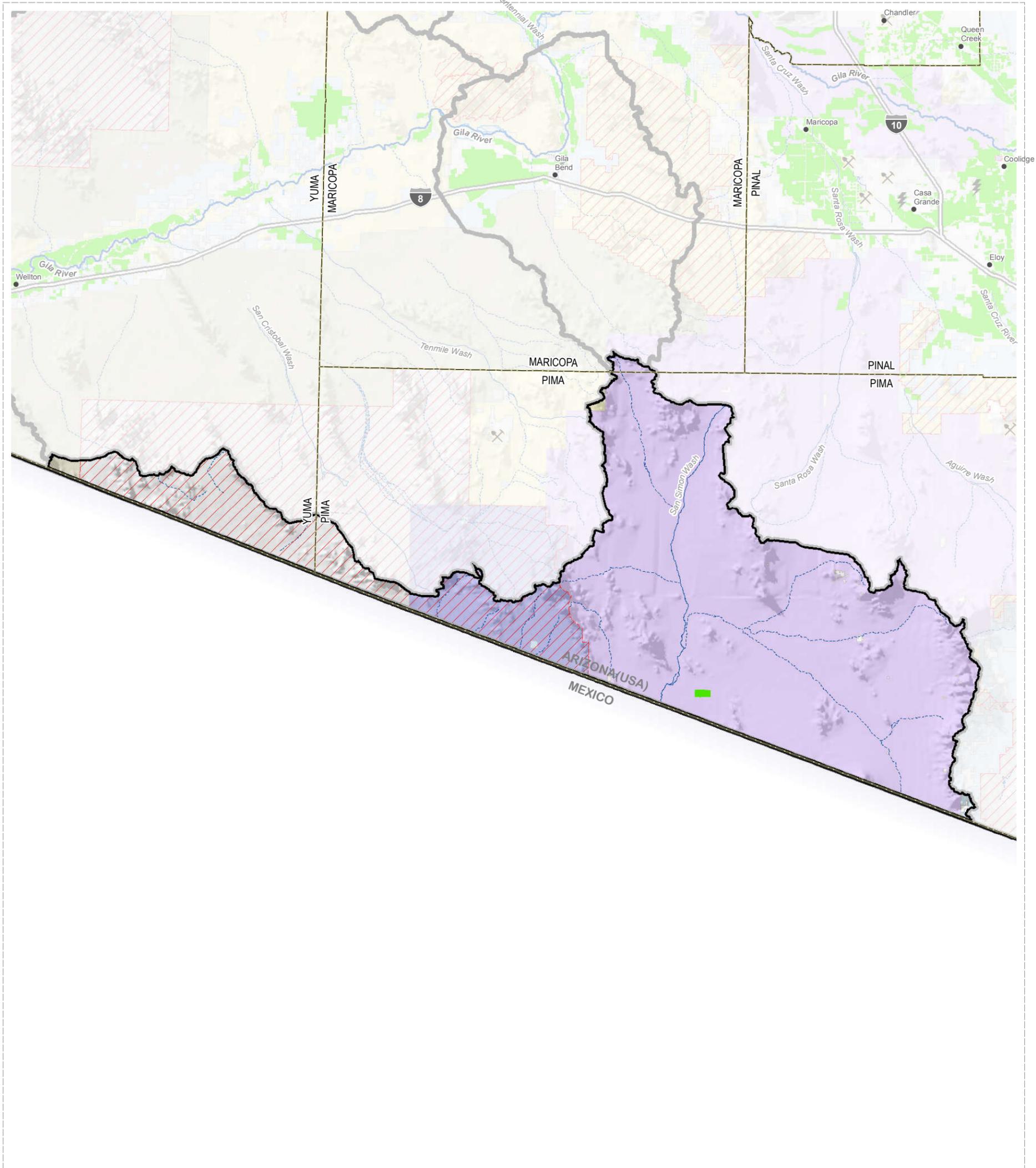
Land Ownership

Because the majority of the lands in this Planning Area are either Indian reservation or National Wildlife Refuge and National Monument, growth potential is very limited. Plans for future development on tribal areas are unknown.

Strategies for Meeting Future Water Demand

Groundwater supplies are expected to be available to meet the projected growth 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)

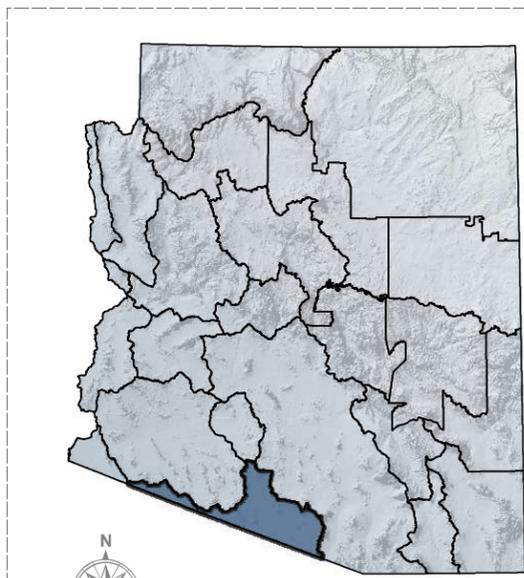
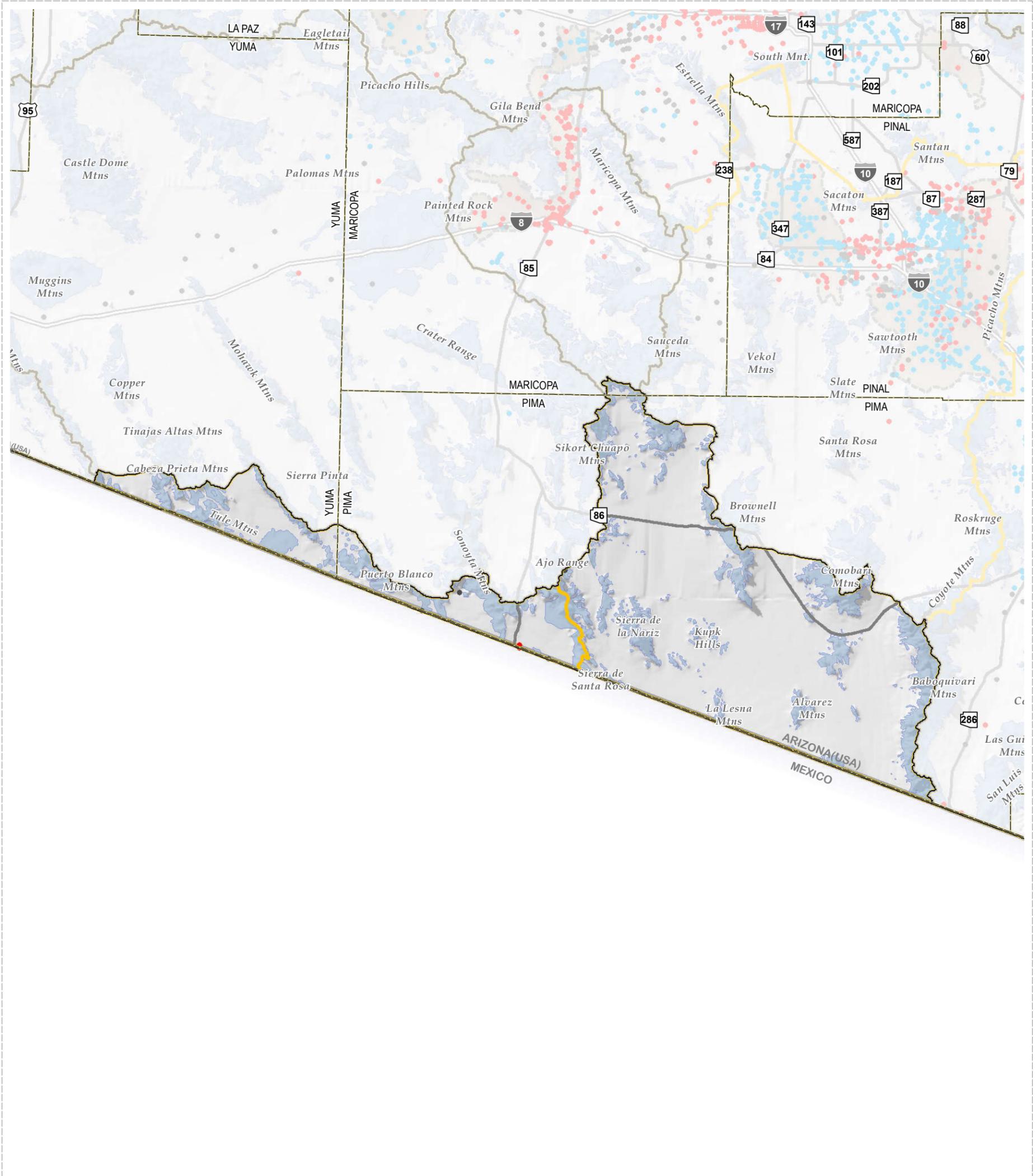
- Planning Area (ADWR)
- State (ALRIS)
- County (ALRIS)
- River or Stream (ASLD)
- Interstate (ADOT)
- Population Center (GNIS)
- Mine (ADMMR, ADWR)
- Hydroelectric Power Plant (ADEQ, ADWR)
- Thermoelectric Power Plant (ADEQ, ADWR)
- Agriculture (SWReGAP, 2004)
- Federal Conservation Land (USFS, BLM,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



West Borderlands Land Ownership

Figure P.A.21-1

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)
- 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

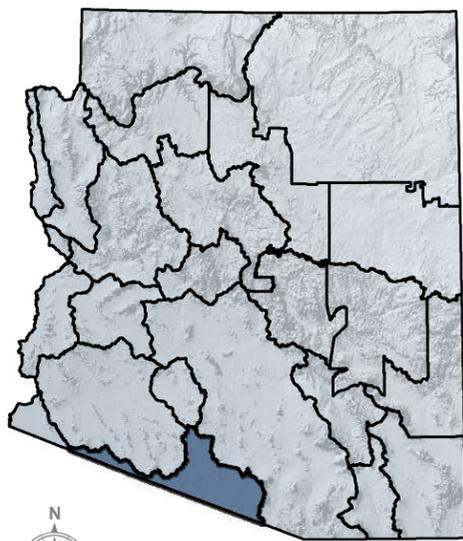
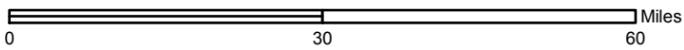
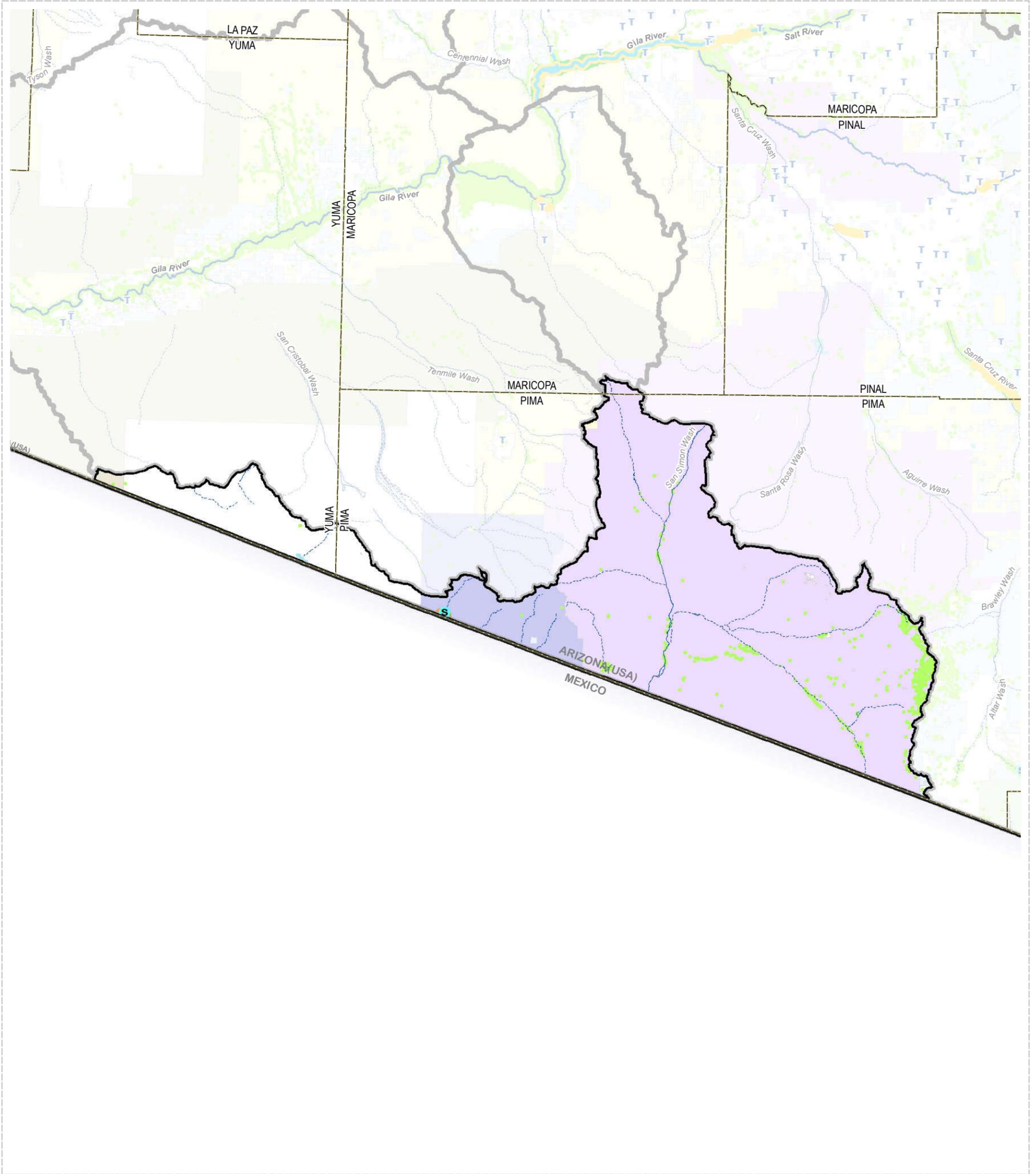
* Data provided by ADWR



Figure P.A.21-2

West Borderlands Groundwater Hydrology

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

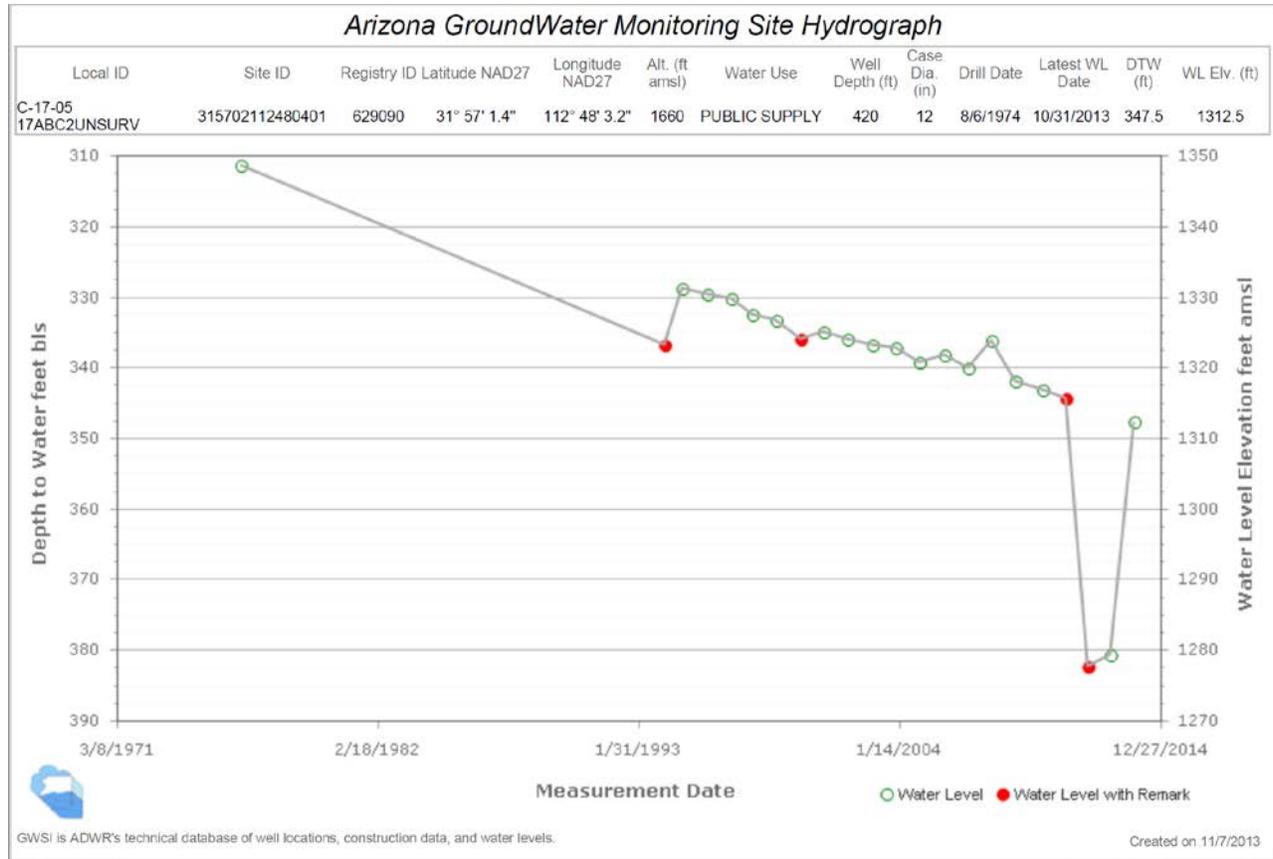


Figure P.A.21-3

West Borderlands

Surface Water and Natural Features

Western Mexican Drainage-West Borderlands Planning Area



Western Mexican Drainage basin about 4 miles north of Lukeville. Monument Headquarters