5.4.17 Tucson Mountains

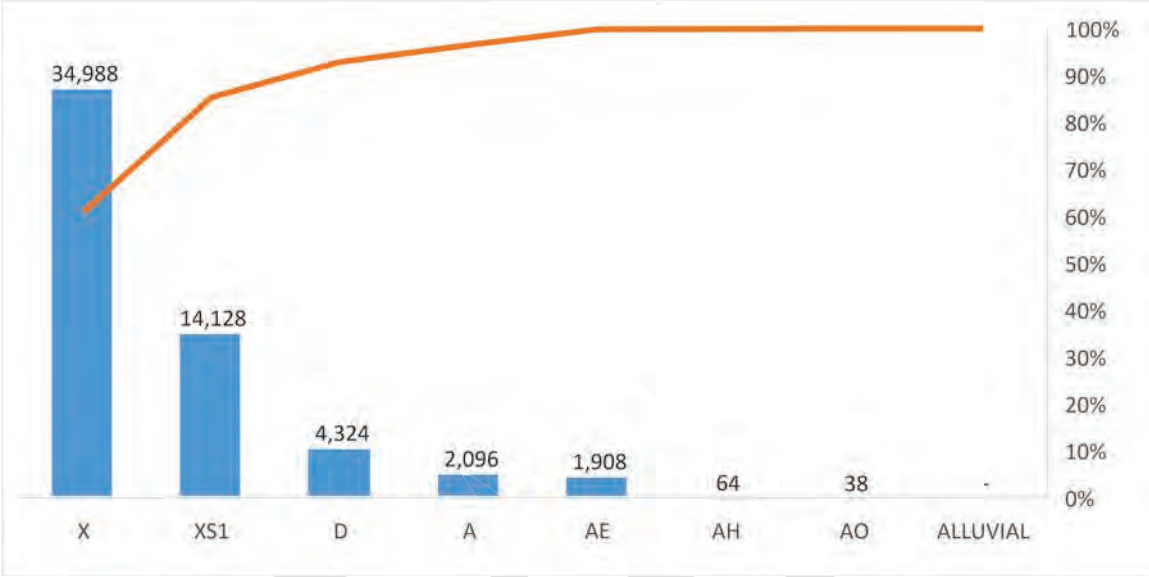
This watershed, which is primarily within unincorporated Pima County, drains the eastern slopes of the Tucson Mountains and includes numerous washes that are tributary to the Santa Cruz River, which is almost entirely within the jurisdictions of the City of Tucson and Town of Marana. While not as tall as the Santa Catalina and Rincon Mountains on the eastern edge of the Tucson basin, these too are rocky and have steep canyons that spill out onto alluvial fans before widening further onto the geologic floodplain under natural conditions. Unlike the Tortolita Fan watershed to the east on the other side of the river, development in the upper portions of the watershed is primarily residential on large lots with minimal drainage channelization. In the downstream portion of the watershed, Silverbell Road includes cross-drainage structures maintained by other jurisdictions. Within Pima County, it is comprised of 34,339 acres (53.6 square miles).

Figure 175 - Tucson Mountains Watershed Map

5.4.17.1 Flood Characteristics

In addition to the 4,106 acres of SFHA zones included on the chart above, there are also 319 acres of District Special Studies Floodplains and 469 acres of sheet flood area in this watershed.

Figure 176 - Tucson Mountains SFHA in Acres



Typically, monsoons are the highest contributor towards flooding. Tropical storms have also contributed towards flooding. Below is a summary of historic USGS gaging station records.

Table 57 - Tucson Mountains Watershed USGS Gages

USGS Gaging Station	Big Wash at Tucson, AZ 09482480	Cholla Wash at Mission Road near Tucson, AZ 09482485	Silvercroft Wash at Tucson, AZ 09483025	Anklam Wash at Tucson, AZ 09483030	West Speedway Wash near Tucson, AZ 09483040
Period of Record	1965-07-10 to 1981-09-18	1982-08-23 to 1990-07-24	1965-07-10 to 1981-07-21	1965-07-10 to 1981-08-13	1965-07-10 to 1981-08-13
Watershed Area (sq. m)	2.94	1.27	2.74	2.11	.46
Flood-Peak of Record (cfs)	3000	1470	1500	2420	240
Date	08-17-1971	08-23-1982	07-20-1970	08-17-1971	09-25-1976
Table of Regulatory Discharge (cfs)	NA	NA	NA	NA	NA

There are no ALERT streamflow gages in this watershed. The table below lists precipitation gages.

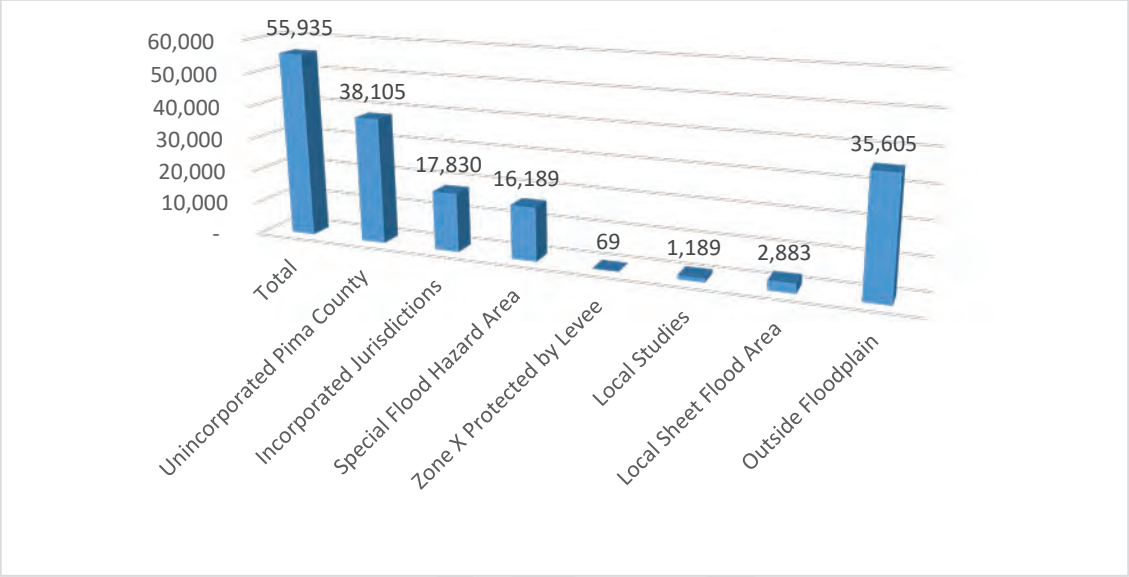
Table 58 - Tucson Mountains Watershed ALERT Precipitation Gages

Pima County Alert Gage	Picture Rocks Community Center-Brawley Basin ID: 6460	Tucson Water Treatment Plant-Brawley Basin ID: 6470
Location (Latitude, Longitude)	(32.3092,-111.2356)	(32.1711, -111.0872)
Period of Record	2001-10-19 to Present	2006-11-09 to Present

5.4.17.2 Existing Development & Infrastructure Trends

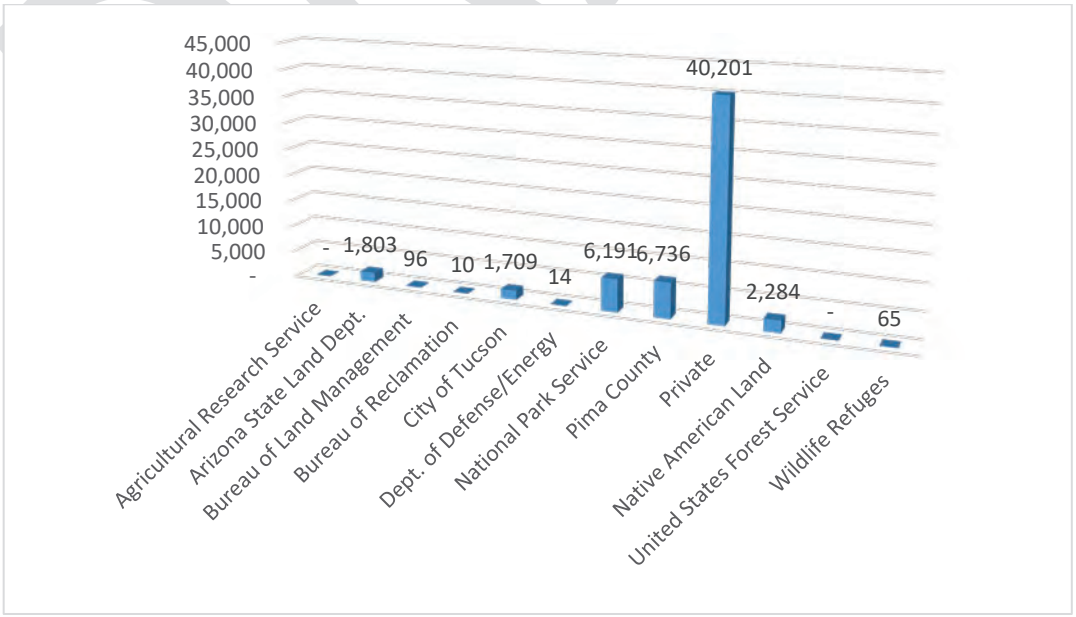
The chart below shows the population distribution between incorporated and unincorporated areas. This chart also shows the distribution of residents within known floodplains.

Figure 177 - Tucson Mountains Watershed Population Distribution



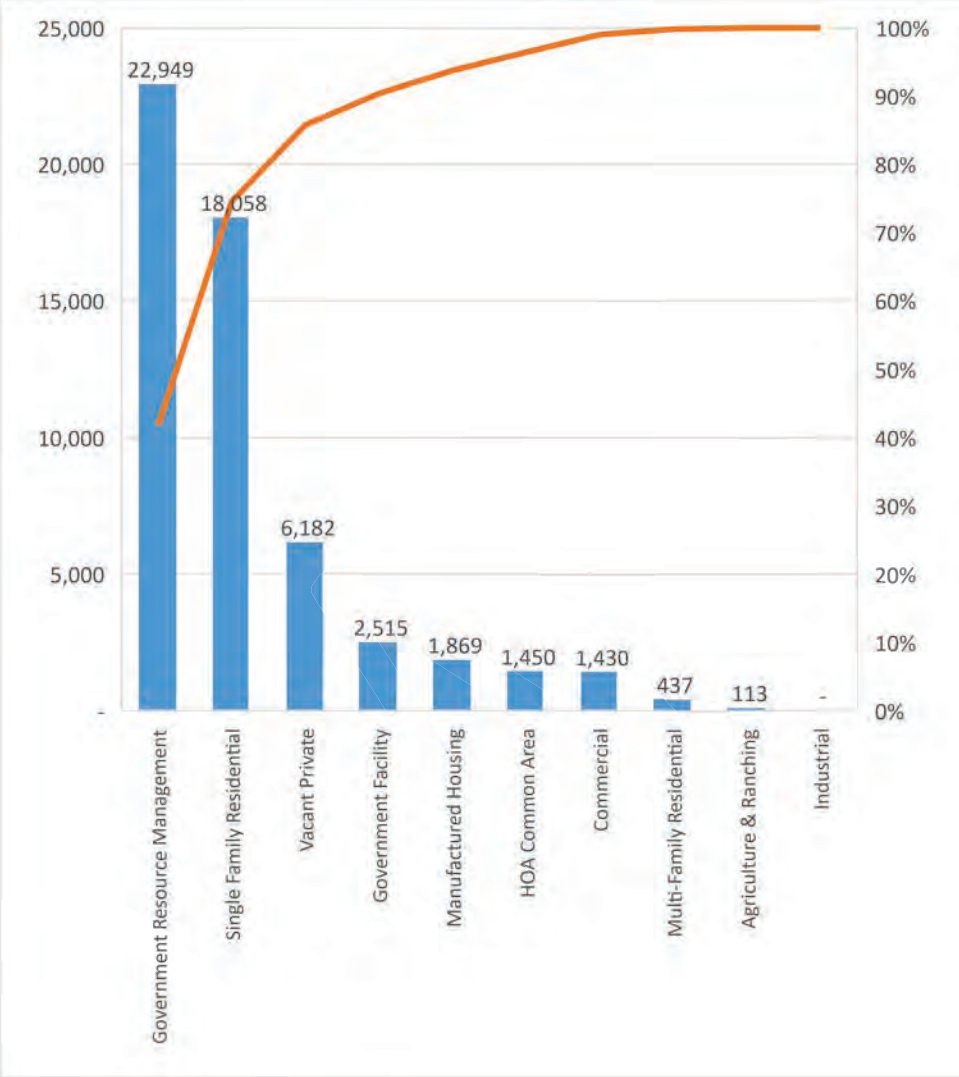
While the County's Tucson Mountain Park has supplemented the open spaces preserved in the Tucson Mountains by Saguaro National Park, private individuals own much of the foothills leading down to the Santa Cruz River geologic floodplain. The exception to this is the band of parks and other government facilities east of Silverbell in the geologic floodplain of the Santa Cruz River.

Figure 178 - Tucson Mountains Watershed Ownership in Acres



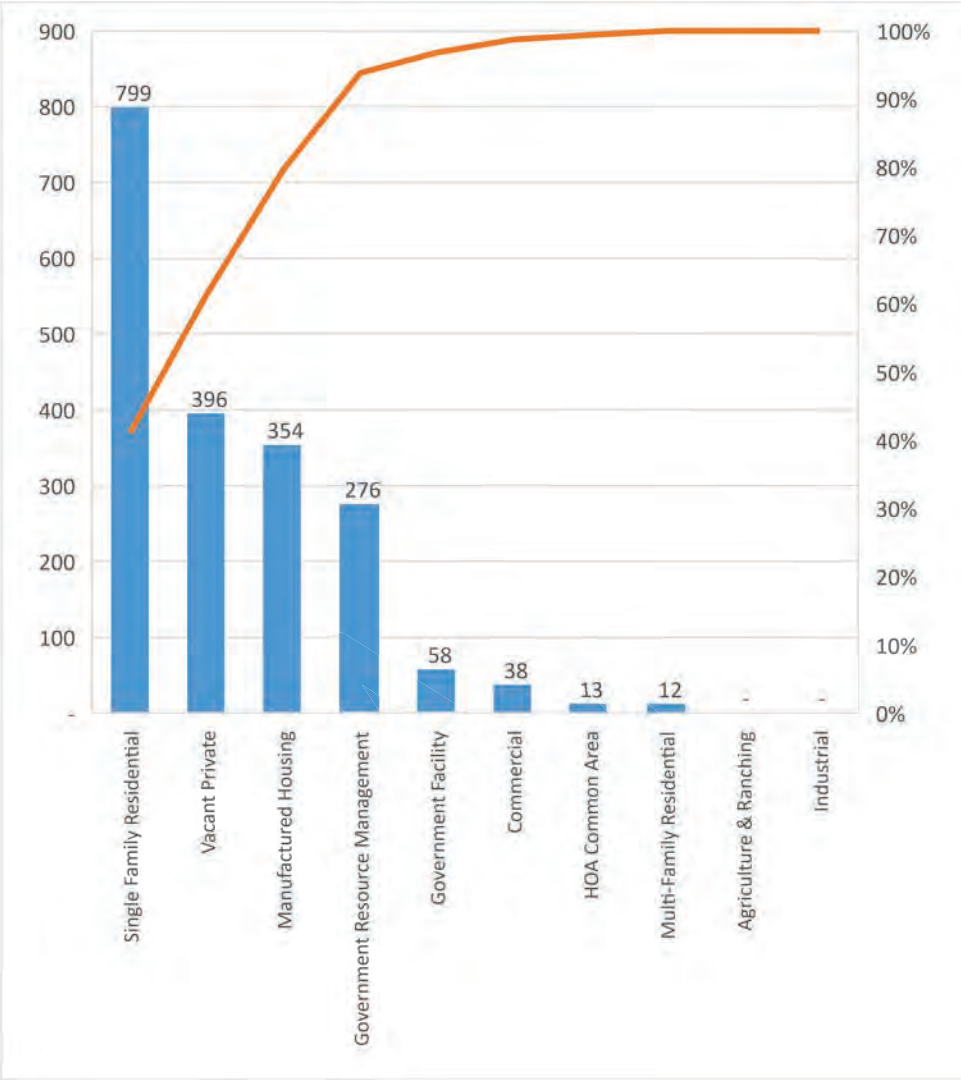
Sixty eight percent of this watershed is private.

Figure 179 - Tucson Mountains Watershed Land Use in Acres



The large percentage of private land parallels the largest land use as single family residential. As in other foothills watersheds within unincorporated areas large lot development predominates along with significant HOA common area open space.

Figure 180 - Tucson Mountains Floodplain Land Use



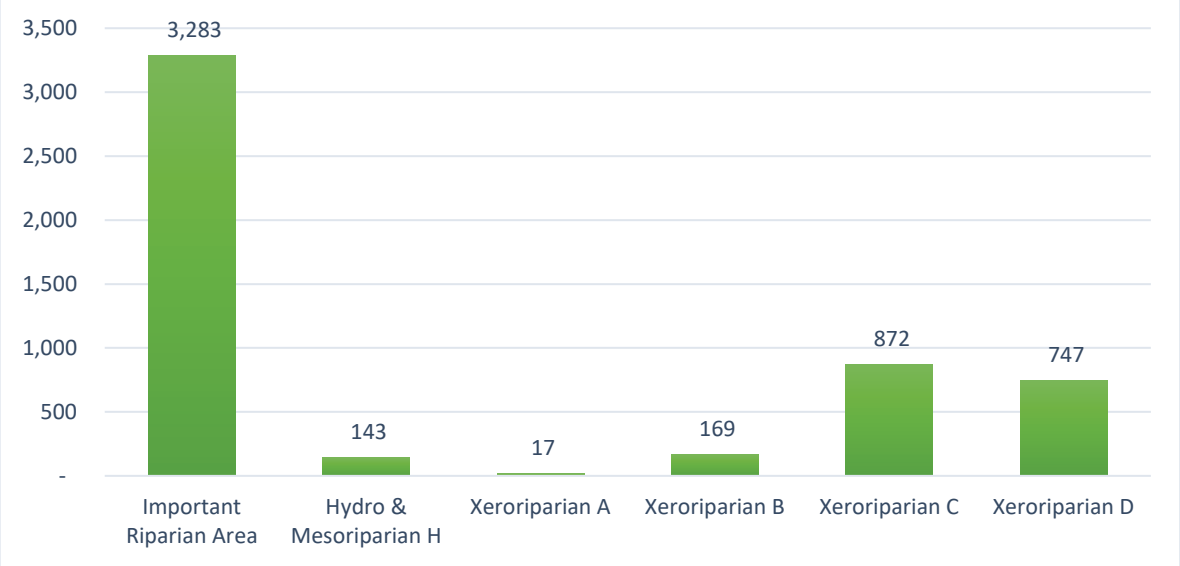
As with the Catalina Foothills watersheds, the predominant land use is single family residential and this trend will continue. Few large parcels remain undeveloped and there are few mass graded subdivisions with the exception of those adjacent to Silverbell Road within the Santa Cruz River geologic floodplain.

Figure 181 - Tucson Mountains Land Use Map

5.4.17.3 Riparian Habitat and Natural Areas

As shown on the figure below, there are 1,948 acres of Pima County Regulated Riparian Habitat in this watershed and 3,283 of IRA. There are also 18,022 preserved acres in this watershed, including 438 in regulatory floodplain.

Figure 182 - Tucson Mountains Watershed Riparian Habitat in Acres

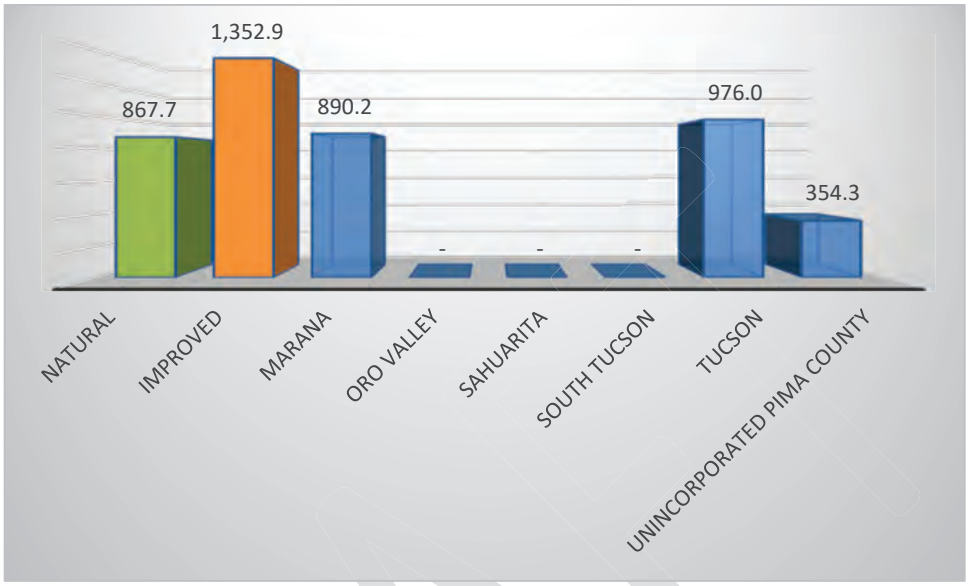


As in the Tortolita watershed to the east the large amount and percentage of IRA is due to significance as a wildlife corridor although is also a significant source of local recharge.

5.4.17.4 Historic Floodplain Management Approach

The figure below shows the split between natural and improved drainageways, and how many acres the District is responsible for in each jurisdiction.

Figure 183 - Tucson Mountains Drainageway Acreage



Little floodplain information is available for this watershed, except for some downstream reaches where the District worked with the City of Tucson to identify floodplains along Silverbell Road. Where residences cluster near washes, floodplain management relies on approximate methods, avoidance of riparian habitat or detailed study by individual property owners.

5.4.17.5 Needs – Capital Improvement

For each watershed; monitoring, frequently flooded structures and properties subject to damage, exposed infrastructure, and safety concerns have been described in full detail in the District's Flood Response Field Manual (April 2019). Each of the areas so identified have addresses and geodetic coordinates associated with them and District personnel have them mapped in the Geographic Information System used. For planning purposes, specific items of concern follow; the complete report is in Appendix D.

5.4.17.6 Floodplain Management

Future needs identified by District staff include:

- Geologic floodplain canyon development
- Corridors
- Lot splits cumulative impacts
- Sheet flood nuisance flow diversion
- Riparian disturbances rural uses
- PCDOT sediment placement/drainage complaints
- Silverbell Road dips
- Floodplain mapping