Riparian Health Assessment Summary

Monitoring Year (MY) 2025-26: Surface Flows Continue to Decline as Local Drought Conditions Persist

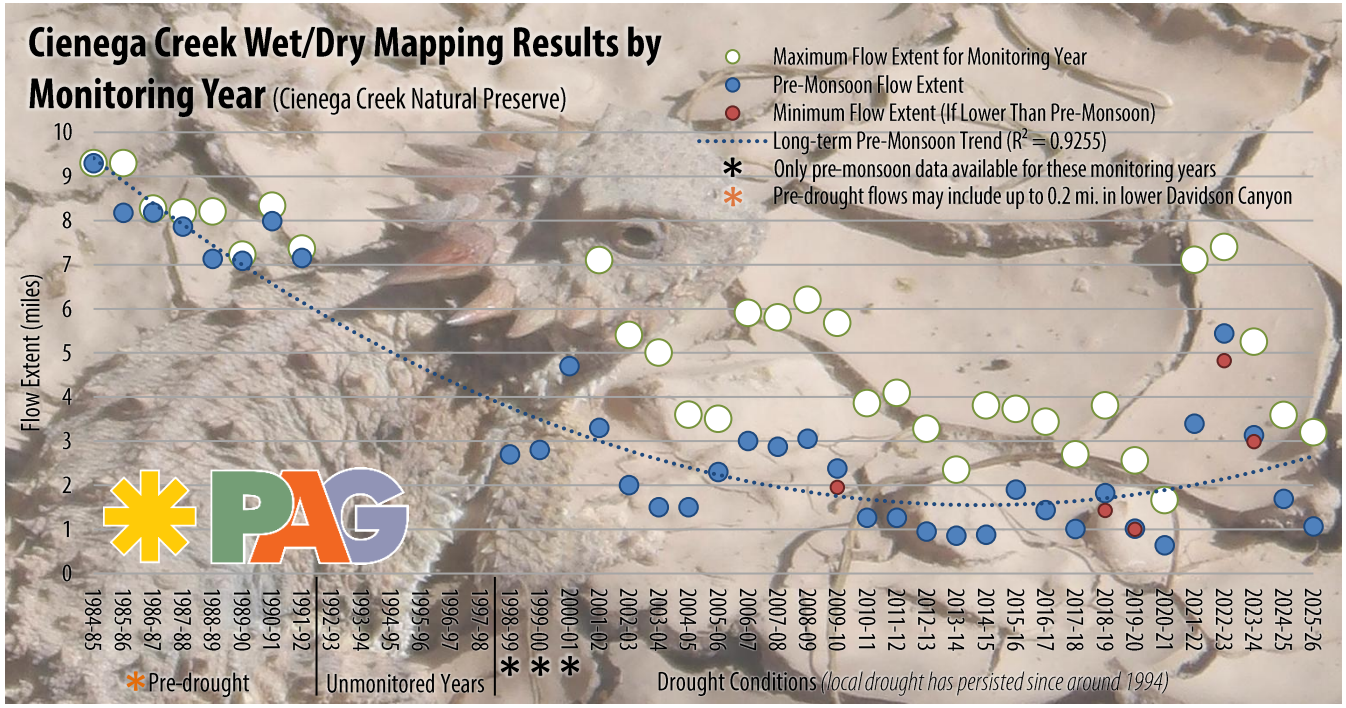
Cienega Creek is one of the few remaining perennial lowland streams in the region. Cienega Creek and Davidson Canyon are stunning examples of what many desert streambeds could look like if similar preservation efforts were employed. These shallow groundwater-dependent ecosystems and Outstanding Arizona Waters (OAW) support both wildlife habitats and human activity. Cienega Creek and Davidson Canyon are also among the priority waterbodies identified in Pima Association of Governments' Areawide Water Quality Management (208) Plan for monitoring and protection.

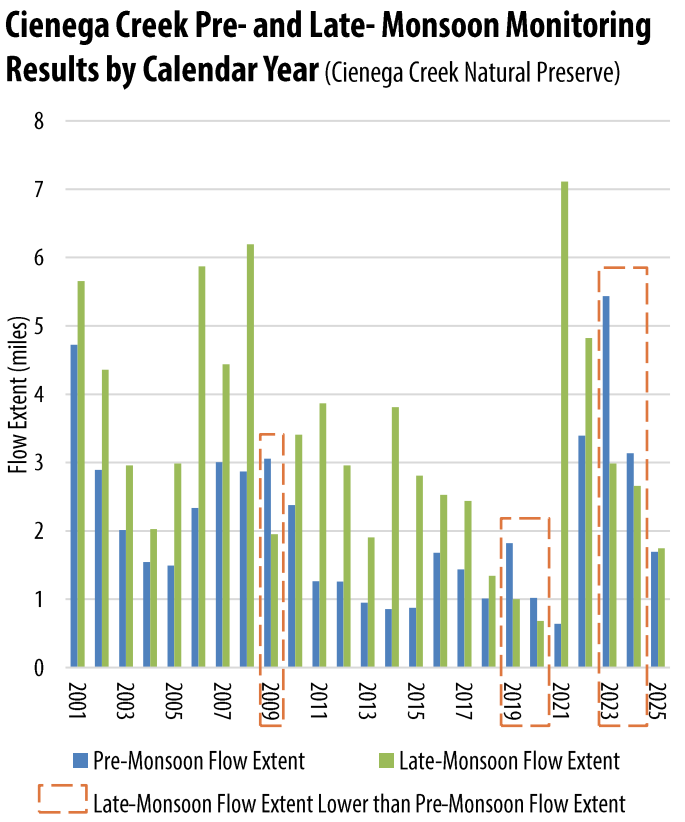
PAG has monitored hydrologic conditions within Pima County's Cienega Creek Natural Preserve (CCNP) since 1989. The CCNP is in the lower part of the Cienega Creek Watershed. Every quarter, PAG maps baseflow in the reaches of Cienega Creek and Davidson Canyon within the CCNP and Pima County's Bar V Ranch. Baseflows are groundwater-based surface flows without the influence of stormwater runoff. The scatter plot shows the time of year that is usually driest (May/June, pre-monsoon) to reflect the minimal perennial (year-round) extent of surface water. Annual maximum baseflow extents reflect the greater aquatic habitat present in wetter seasons.

Highlights from MY 2025-26

In MY 2025-26 (July 2025 through June 2026), flows continued to decline within the CCNP. As shown on the bar chart, the September 2025 (pre-monsoon) baseflow extent in Cienega Creek was 1.74 miles, only slightly higher than the June 2025 baseflow extent of 1.69 miles. The June 2026 baseflow extent in Cienega Creek was 1.07 miles, or 11% of the monitoring area. No baseflow was observed in Davidson Canyon in MY 2025-26 (see page 3).

Baseflow varies from season to season and from year to year depending on factors such as drought, weather variability, and erosion. While these conditions impact riparian habitat along perennial and intermittent creeks, shallow groundwater can provide a temporary buffer against drought to support cottonwood trees and other vegetation until conditions improve. The photos on the right show seasonal changes in cottonwood canopy and the desert scrub above Cienega Creek in MY 2025-26.





Cienega Creek
Pre-Monsoon Flow Extent Figure
1999 to 2026

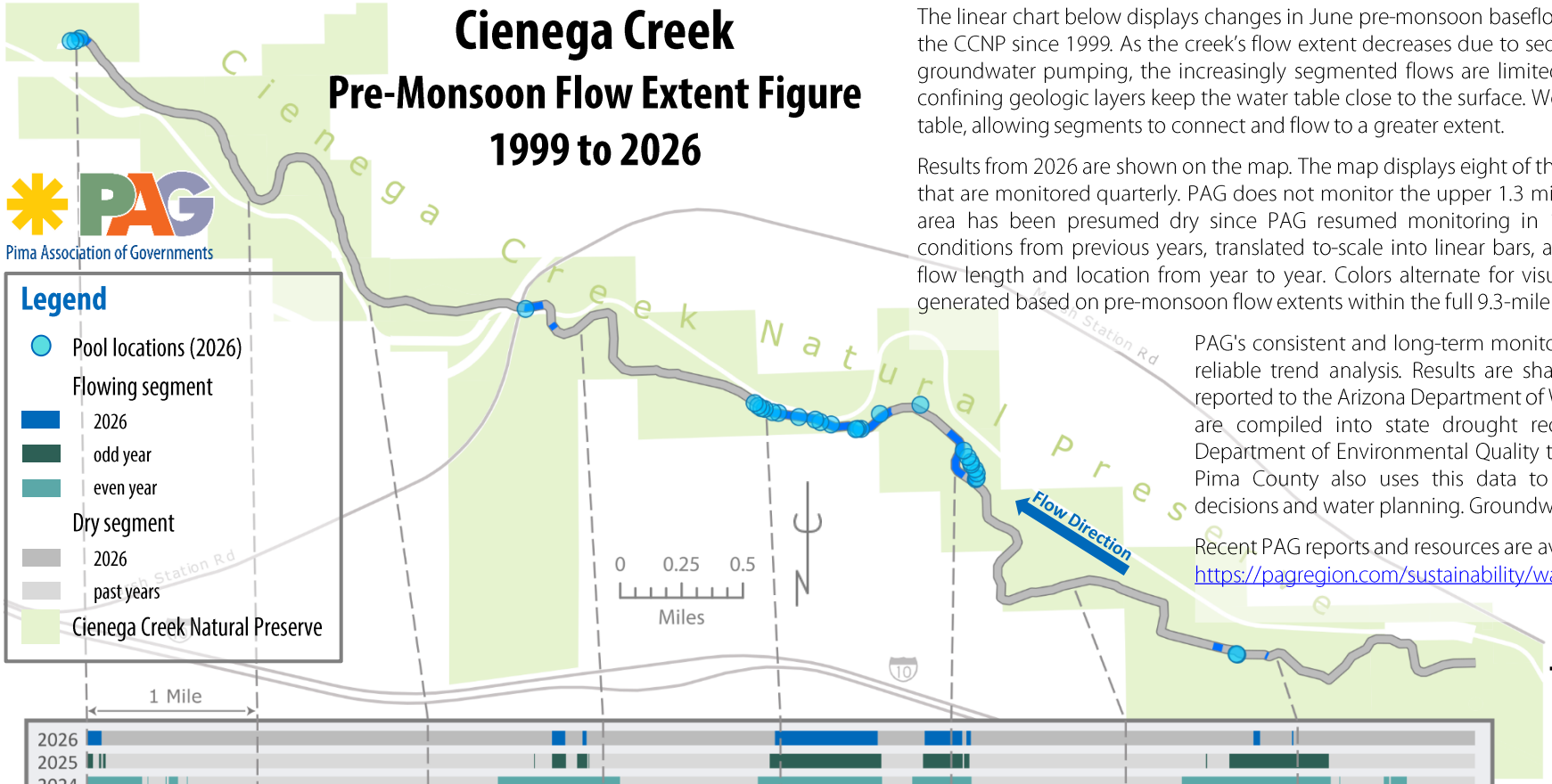
Pima Association of Governments

The linear chart below displays changes in June pre-monsoon baseflows for Cienega Creek within the CCNP since 1999. As the creek's flow extent decreases due to sedimentation, drought and/or groundwater pumping, the increasingly segmented flows are limited to reaches where shallow confining geologic layers keep the water table close to the surface. Wetter years elevate the water table, allowing segments to connect and flow to a greater extent.

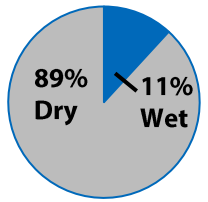
Results from 2026 are shown on the map. The map displays eight of the 9.3 miles of Cienega Creek that are monitored quarterly. PAG does not monitor the upper 1.3 miles of Cienega Creek, as this area has been presumed dry since PAG resumed monitoring in 1999. The bar chart shows conditions from previous years, translated to-scale into linear bars, allowing easy comparison of flow length and location from year to year. Colors alternate for visual aid. The pie charts were generated based on pre-monsoon flow extents within the full 9.3-mile monitoring area.

PAG's consistent and long-term monitoring is necessary to provide reliable trend analysis. Results are shared with Pima County and reported to the Arizona Department of Water Resources, where they are compiled into state drought records, and to the Arizona Department of Environmental Quality to support flow regime data. Pima County also uses this data to inform land management decisions and water planning. Groundwater data are also available.

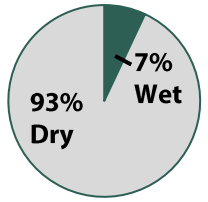
Recent PAG reports and resources are available here:
https://pagregion.com/sustainability/water-quality/water-reliability/



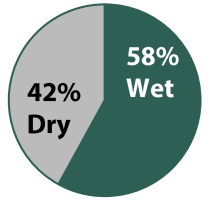
This Year (2026)



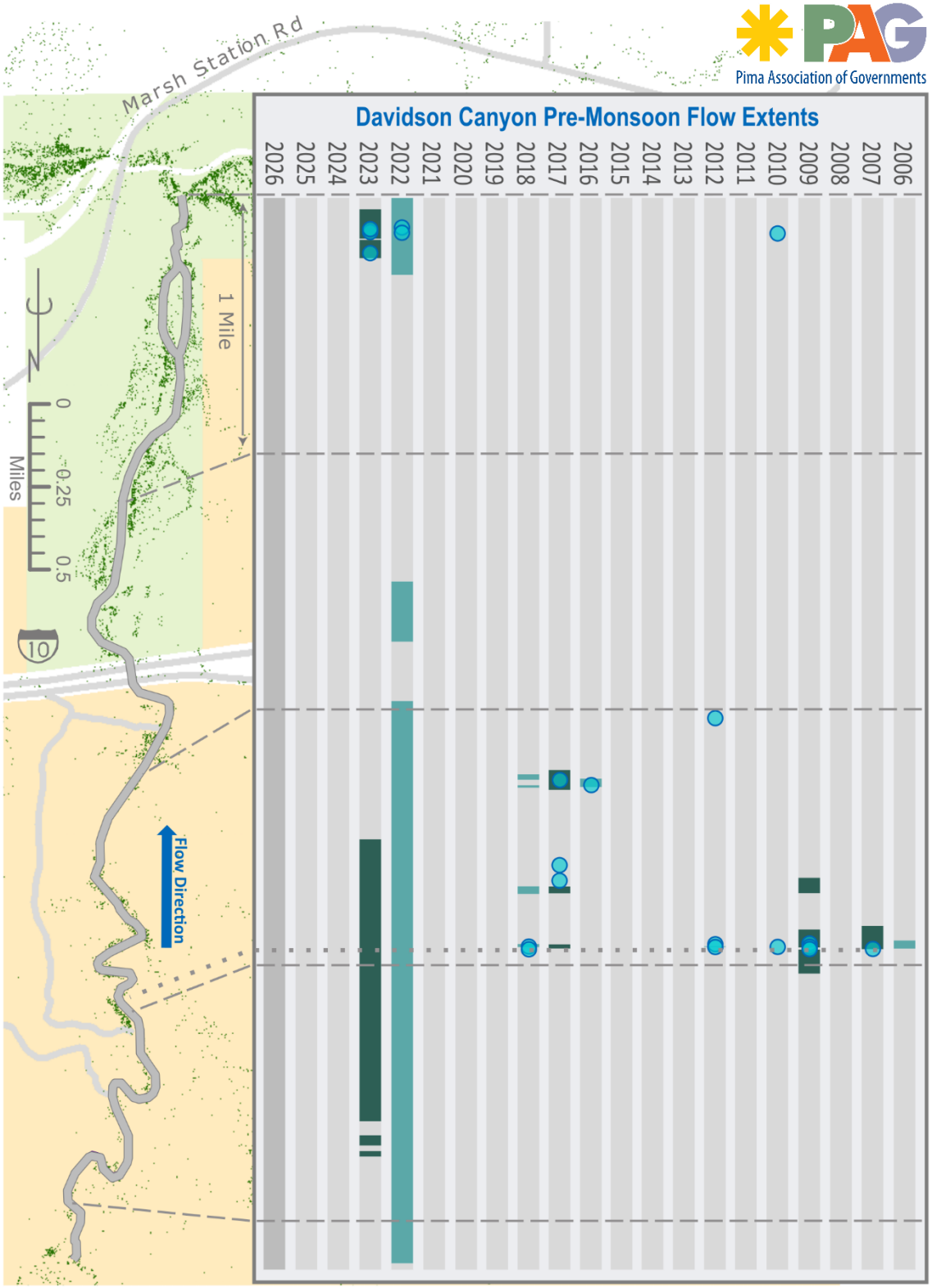
Least Flow (2021)

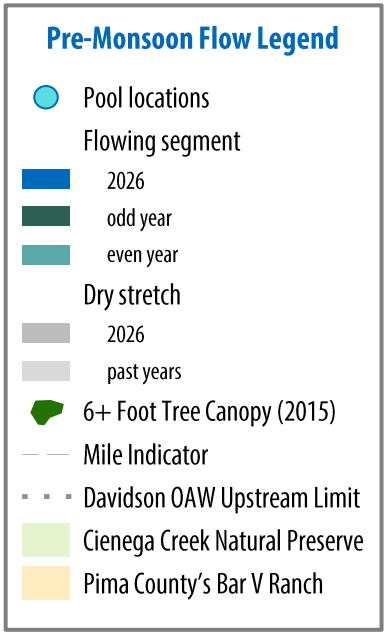


Most Flow (2023)



Davidson Canyon
Flow Extent Figures, 2005 to 2026





The linear chart at left displays changes in June pre-monsoon baseflows for Davidson Canyon within the CCNP since 2006. Results from 2026 are shown on the map. The map displays just over four miles of Davidson Canyon, which PAG has monitored quarterly since 2006 and includes the OAW reach. Cienega Creek flow data is not pictured on this map. Tree canopy data and riparian health assessment data show that riparian vegetation in the canyon has persisted over time, supported by shallow groundwater.

The scatter plot below shows pre-monsoon baseflow extents. Within this stretch of Davidson Canyon, the total length of flow includes isolated pools that are not adjacent to flow.

Davidson Canyon Wet/Dry Monitoring Results
(CCNP & Bar V Ranch)