From Dry to Wet: PAG Cienega Creek & Davidson Canyon Monitoring Update

Pima County Local Drought Impact Group
November 10, 2021

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Introduction
Water Reliance in a Shallow Groundwater Area
A Downward Trend in Flows

Cienega Creek Monitoring Results (Cienega Creek Natural Preserve)

- Maximum FlowExtent for Monitoring Year
- Pre-Monsoon FlowExtent
- Minimum FlowExtent (If Lower Than Pre-Monsoon)
- Long-term Pre-Monsoon Trend ($R^2 = 0.9255$)
Cienega Creek
Pre-Monsoon Flow Extent
2002 to 2021

Least June Flow: 2021
7% Wet
93% Dry

Most June Flow: 2002
35% Wet
65% Dry
Lowest Flows on Record – 2020-21

Quarterly Cienega Creek Flow Extents
(Cienega Creek Natural Preserve)
No Flow in Davidson – 2020-21

Davidson Canyon (Upstream of I-10)
Impacts on Habitat

Photo © Bill Zeedyk
Nonsoon to Top Three Wettest Monsoon

Monsoon 2020:

Monsoon 2021:

Source: https://alertmap.rfcd.pima.gov/Gmap/Gmap.html
Cienega Creek
Pre-Monsoon Flow Extent
2002 to 2021
Highest Baseflows in Over Two Decades – September 2021
Groundwater Levels Are Up

Davidson #2: 55-808580
Along Davidson Canyon, ~ 1/3 mile Upstream of Interstate 10
D(16-17) 31ccb

Source: Pima County Regional Flood Control District
Additional Impacts of Increased Rainfall
Additional Impacts of Increased Rainfall

June 2021:

September 2021:
Additional Impacts of Increased Rainfall
Additional Impacts of Increased Rainfall

January 2012:

September 2021:
Thank you!

Library: https://gismaps.pagnet.org/PAGLibrary/

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