



Borrego Springs Watermaster

Joint TAC/EWG Meeting

February 26, 2026

Agenda

- I. Roll Call, Meeting Objectives, and Meeting Procedures
- II. Public Comment
- III. Review of the UCI GDE Study Report as Best Available Science
- IV. Public Comment

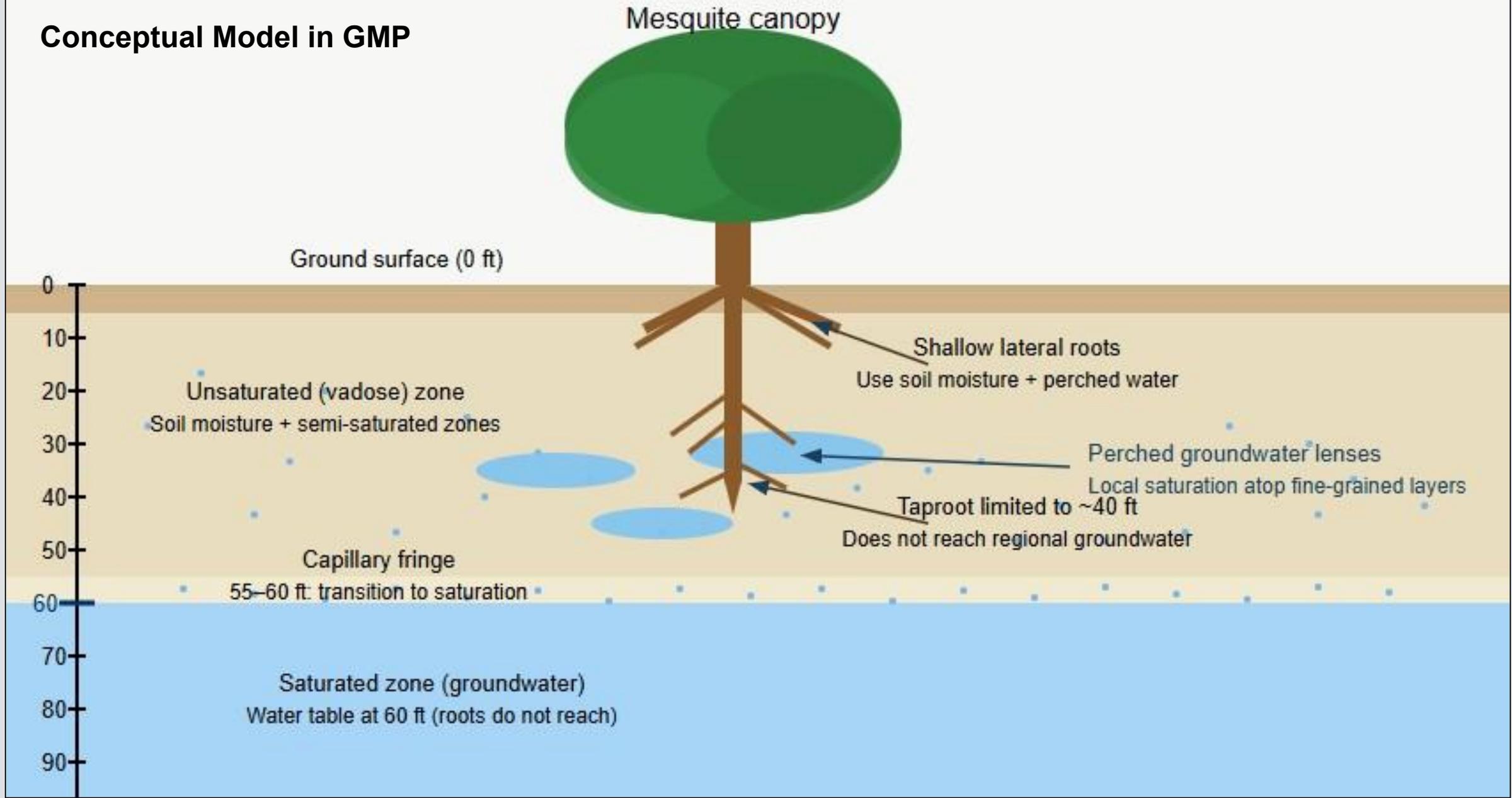
Meeting Objectives

- Review the findings and recommendations of the TC Recommendation Report
- Clarify understanding of the results, conclusions, and recommendations in the UCI GDE Study Report
- Develop recommendations for the Watermaster Board for next logical steps
 - **TAC/EWG Recommendation Report**

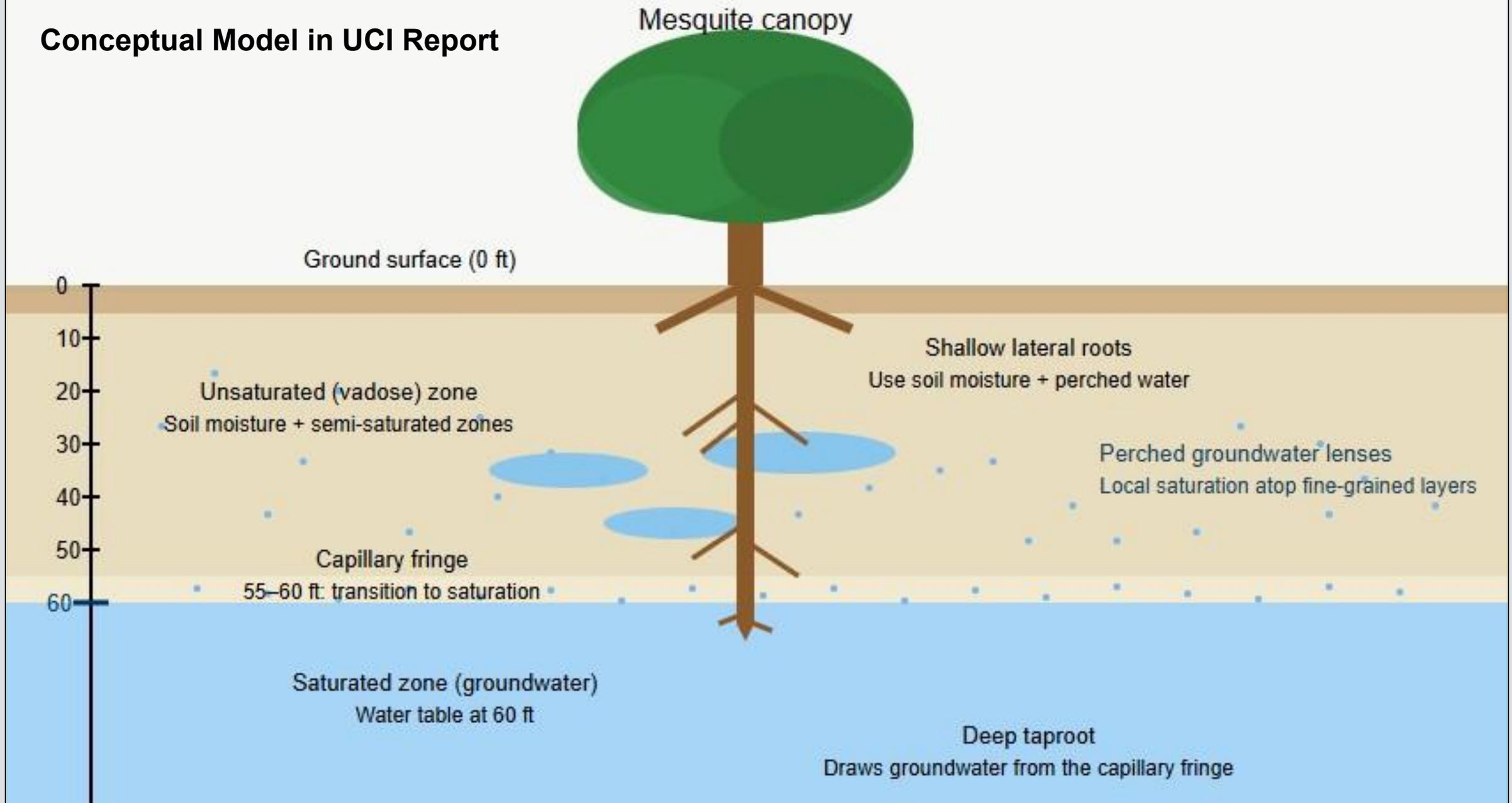
Meeting Procedures

- Members of the public have 3 minutes each during public comment periods at the beginning/ending of the meeting
- UCI has 10 minutes for an opening statement
- TAC/EWG members can ask questions of UCI staff throughout the meeting
- UCI has 10 minutes for a closing statement

Conceptual Model in GMP



Conceptual Model in UCI Report



Summary of TC Findings and Recommendations

Review of UCI GDE Study Report

- UCI Report is a significant advancement in the scientific understanding of the Mesquite Bosque
- UCI Report indicates the Mesquite Bosque **could be** a GDE, but does not represent proof
- In many cases, we identified data gaps that hindered the interpretation of the data
 - Role of deep soil moisture within the vadose zone as a potential water source that supports the Mesquite Bosque
- UCI Report “Partially Met” our criteria/opinion of BAS
 - We do not currently consider the UCI GDE Study Report as BAS until the data gaps are sufficiently filled
- Our report provides several recommendations to fill the data gaps
 - Kickstart a discussion with TAC/EWG on recommended next steps for Board consideration

Table ES-1. Summary of Assessment of UCI GDE Study Report and Recommendations for Next Steps

UCI GDE Study Report Section	UCI Line of Evidence	Assessment of Best Available Science	Recommended Work to Address Data Gaps
Mapping of Mesquite Bosque	About 350 acres of live Mesquite tree canopy was mapped in the BS Mesquite Bosque using image classification of a 2016 air photo in ArcGIS Pro.	<p><i>BAS determination: Partially Met</i></p> <p>The mapping approach appears to produce reasonable results and could be used as a repeatable, objective method for change detection over time. However, before use, the mapping approach should be validated by a remote-sensing specialist.</p>	Before using this mapping approach for change detection over time, an independent remote-sensing specialist should evaluate and validate the approach and offer any recommended adjustments.

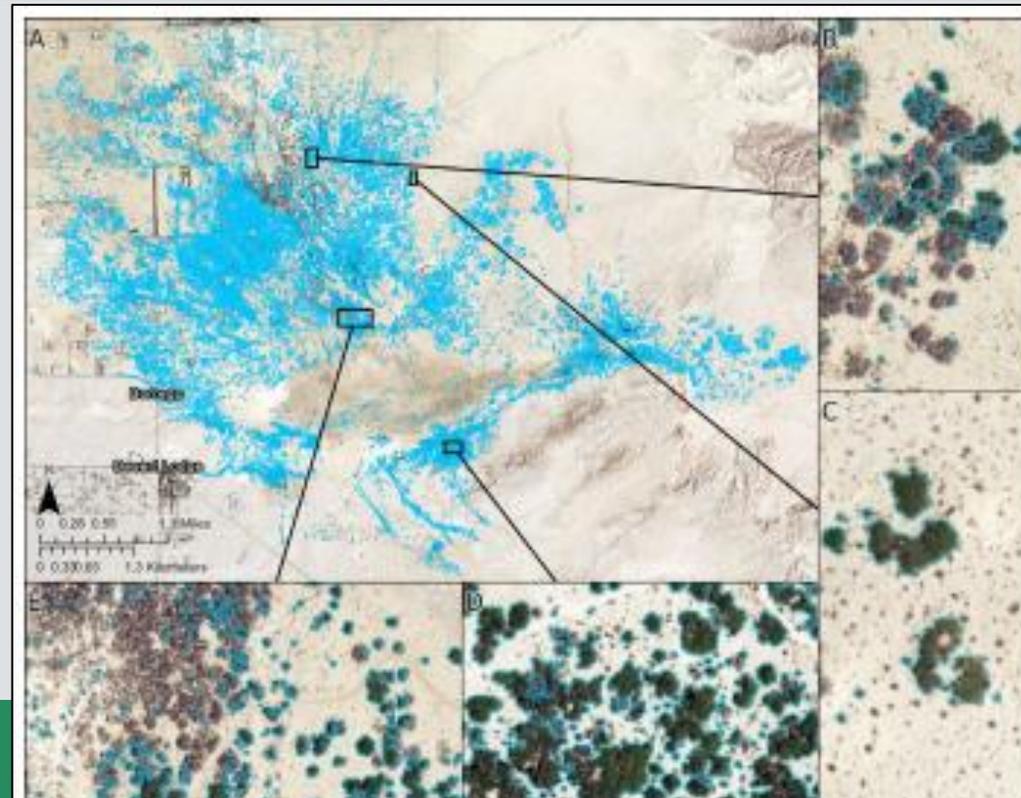


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<p>Study Site and Tree Selection for Ecological Data Collection</p>	<p>Four (4) sites in the BS Mesquite Bosque were selected for habitat and tree-specific study. Site 1 (southern portion of the BS Mesquite Bosque) was selected for more intensive study of isotopic chemistry and water potential. Site 5 was located in the CDL Mesquite Bosque as a comparison.</p>	<p><i>BAS determination</i> : Partially Met</p> <p>Site selection was appropriately distributed across the BS Mesquite Bosque. However, Site 4 would have been a more appropriate choice for more intensive study. This is because the depth-to-groundwater is deeper, so if groundwater dependency is demonstrated at Site 4, it would follow that other areas within the BS Mesquite Bosque where groundwater is shallower are also GDEs. In addition, Site 4 is closer to the main areas of pumping in the Basin and the locations of monitored wells.</p>	<p>A new monitoring well(s) could be used to improve confidence in the data analyses and interpretations.</p>

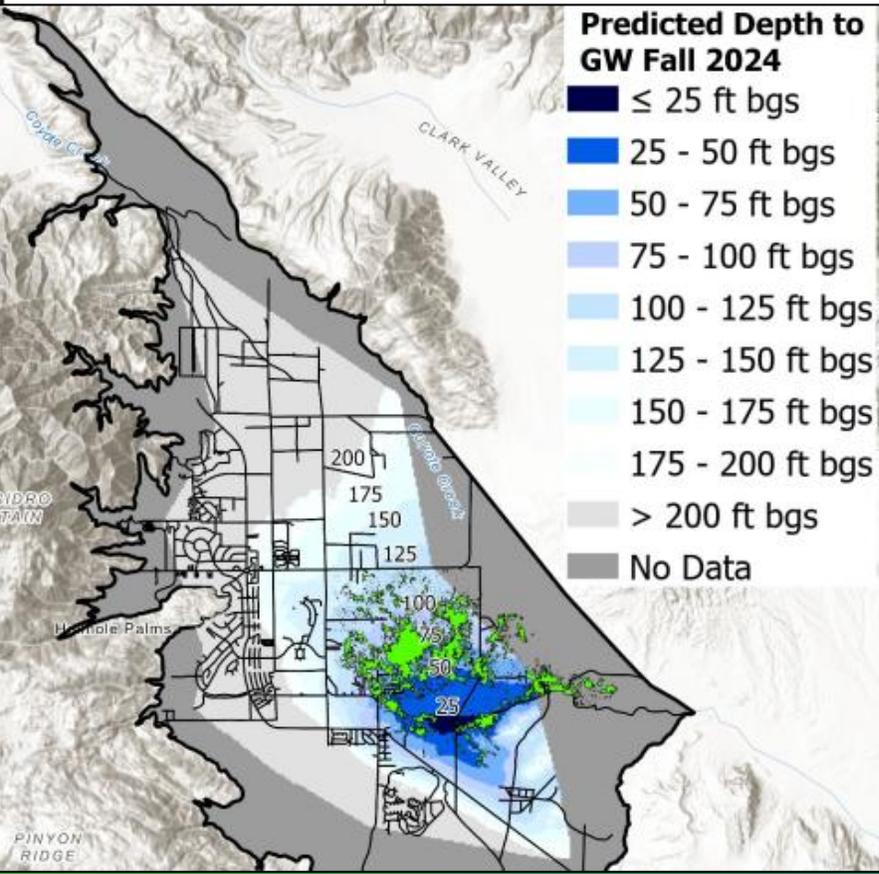


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<p>Mapping Depth to Groundwater</p>	<p>Depth-to-groundwater in the Basin for Fall 2024 was estimated by subtracting a groundwater-elevation raster provided by Watermaster from a 1-meter USGS DEM in ArcGIS Pro. The analysis indicated that depth-to-groundwater was closest to the surface near the Borrego Sink, with depths as shallow as 18 ft-bgs in Fall 2024.</p>	<p><i>BAS determination</i> : Partially Met</p> <p>The mapping of depth-to-groundwater used Watermaster’s readily available groundwater-elevation raster. However, this raster was generated from sparse measured data within the BS Mesquite Bosque area and its purpose is for regional analysis; hence, the raster is an approximate estimate of depth-to-groundwater. Therefore, it should not be used for site-specific analyses and interpretations in the report, such as recommending minimum thresholds for groundwater levels.</p>	<p>Measured depth-to-groundwater within the BS Mesquite Bosque area is a data gap that should be filled to increase confidence in the estimation of depth-to-groundwater and the assessment of the BS Mesquite Bosque as a GDE.</p>

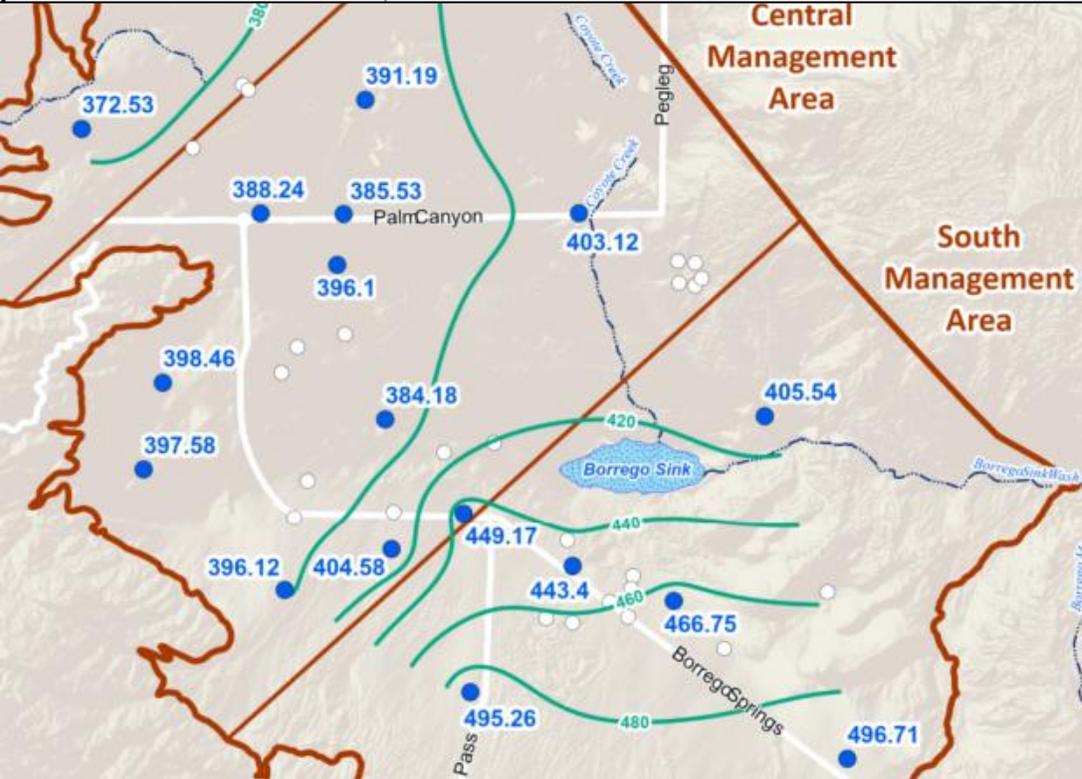


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<p>Mesquite Tree Rooting Depth and Connection to Groundwater</p>	<p>The report cites references where Mesquite trees have developed deep roots to tap groundwater, ranging from approximately 39 to 175 ft-bgs, which is comparable to or exceeds the current estimates of depth-to-groundwater underlying the BS Mesquite Bosque (22 to 134 ft-bgs).</p>	<p><i>BAS determination</i> : Met</p> <p>The main conclusion of this report section that Mesquite trees in the BS Mesquite Bosque have deep tap roots that could reach the capillary fringe above the regional aquifer system is supported by the cited references.</p>	

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Shallow Soil Conditions	The study used soil moisture sensors and field soil moisture data to characterize soil moisture conditions to 5 ft-bgs during “sampling” events. The results indicated relatively "dry" shallow soil conditions (<10% soil moisture).	<p><i>BAS determination</i> : Not Met</p> <p>Mesquite trees are adapted to arid desert environments, and their roots can access soil moisture of <10%. The sampling and analysis of soil conditions to depths of only 5 ft-bgs leaves a gap in understanding of soil conditions from 5 ft-bgs to the saturated zone (i.e., >100 ft-bgs). Soil moisture within this depth interval could be a source of water for the Mesquite tree roots but was not analyzed in the study.</p>	Fill the gap in understanding of the texture, moisture content, and isotopic water chemistry of the soil profile from 5 ft-bgs to the saturated zone.

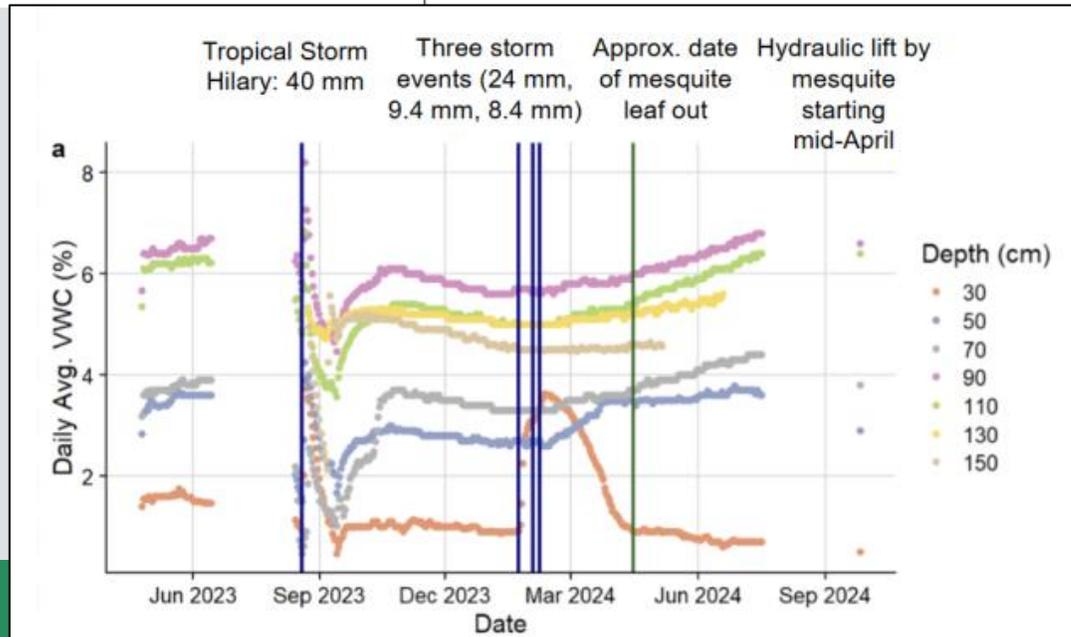


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<p>Isotopic Analysis</p>	<p>The study employed an analysis of hydrogen and oxygen isotopes in Mesquite tree tissue (and Creosote and Saltbush) versus the same isotopes in groundwater and shallow soil water to assess and quantify the contribution of these two source waters to the vegetation. The main results and conclusions were:</p> <ul style="list-style-type: none"> -- Mesquite trees draw water from both shallow soil water and the regional aquifer system. -- The percentage of groundwater in Mesquite tree tissue in the BS Mesquite Bosque ranged from 54% to 82%. -- Creosote and Saltbush also draw water from soil moisture and another water source(s). 	<p><i>BAS determination</i> : Partially Met</p> <p>The isotopic data suggest there must be another water source for the Creosote and Saltbush that is deeper than 5 ft-bgs with an isotopic signature like the regional aquifer. However, the isotopic analysis did not include sampling, analysis, and consideration of soil moisture deeper than 5 ft-bgs as a potential source water for the vegetation (i.e., Mesquite, Creosote, and Saltbush). Soil moisture within this depth interval could be a source of water for the vegetation but was not analyzed. This data gap adds uncertainty to the conclusion of the study that the BS Mesquite Bosque is a GDE.</p>	<p>Fill the gap in understanding of the isotopic composition of soil moisture from 5 ft-bgs to the saturated zone. These data could more definitively describe and quantify the relative roles of shallow soil moisture (<5 ft-bgs), deeper soil moisture (>5 ft-bgs) and/or the regional aquifer in supplying the ET demands of the Mesquite trees.</p>

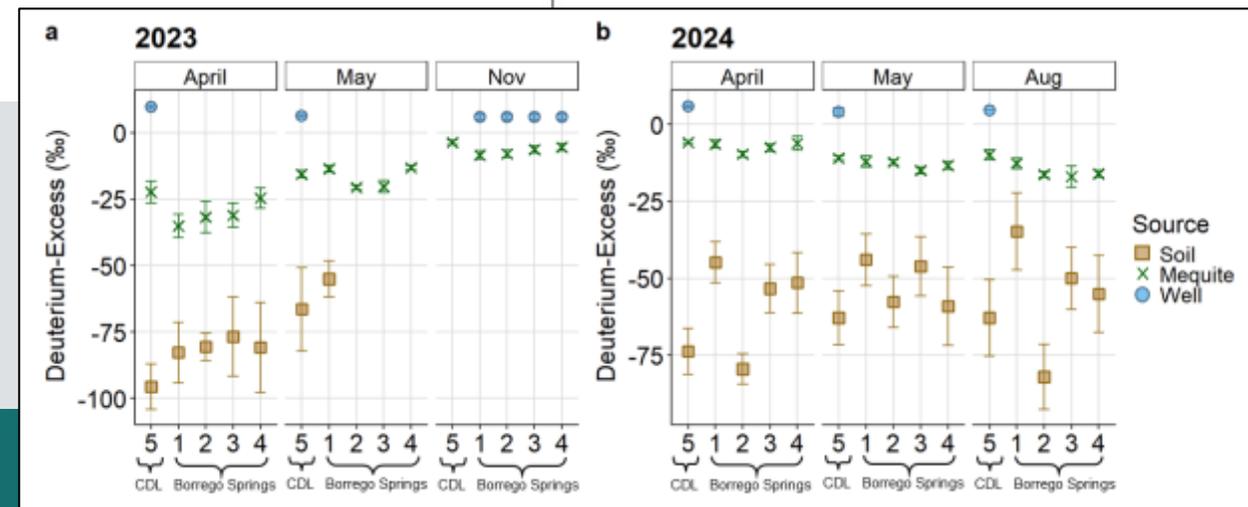


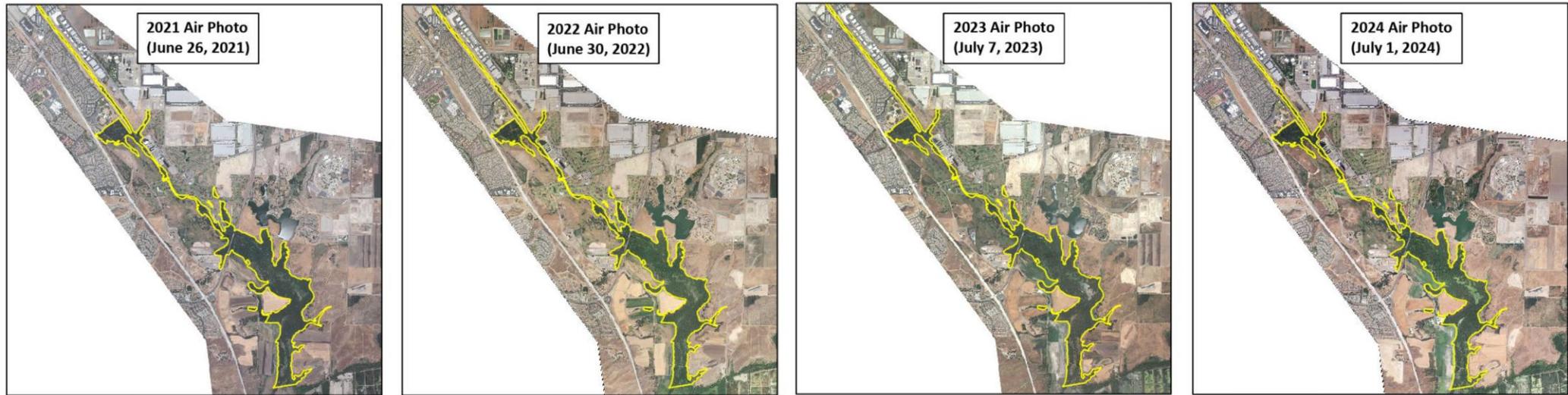
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Water Potential	<p>The study measured leaf water potential of Mesquite and Creosote across the summer months to assess differences in water availability and water stress between in the BS Mesquite Bosque and CDL Mesquite Bosque (the comparison site with comparatively shallow groundwater levels). The main conclusion was that the Mesquite trees in the BS Mesquite Bosque are dependent on groundwater because of the following observations:</p> <p>-- The Mesquite trees at the BS site and the CDL site exhibited similar water availability and water stress, with the BS site showed slightly less water availability and greater water stress than the CDL site. The report suggests that this observation was likely due to higher groundwater levels at the CDL site.</p> <p>-- The Creosote showed less water availability and greater water stress than Mesquite. The report suggests that this observation was likely due to groundwater availability for the Mesquite.</p>	<p><i>BAS determination</i> : Partially Met</p> <p>The water-potential data and analyses produce reasonable results. However, we disagree with the conclusion that these data indicate that the Mesquite trees are using the regional aquifer. An alternative explanation is that the Mesquite trees at the BS site are using deeper soil moisture (>5 ft-bgs) which could explain:</p> <p>-- Lower water potential for Mesquite at the BS site versus the CDL site.</p> <p>-- Lower water potential for the shallow-rooted Creosote vs. the deeper-rooted Mesquite.</p>	

Figure 2.17. Leaf water potential in 2023 (top panel) and 2024 (bottom panel) across the three sampling periods. The points represent raw data, the black triangles indicate the mean, and the black error bars show the standard error. MPa: Megapascal

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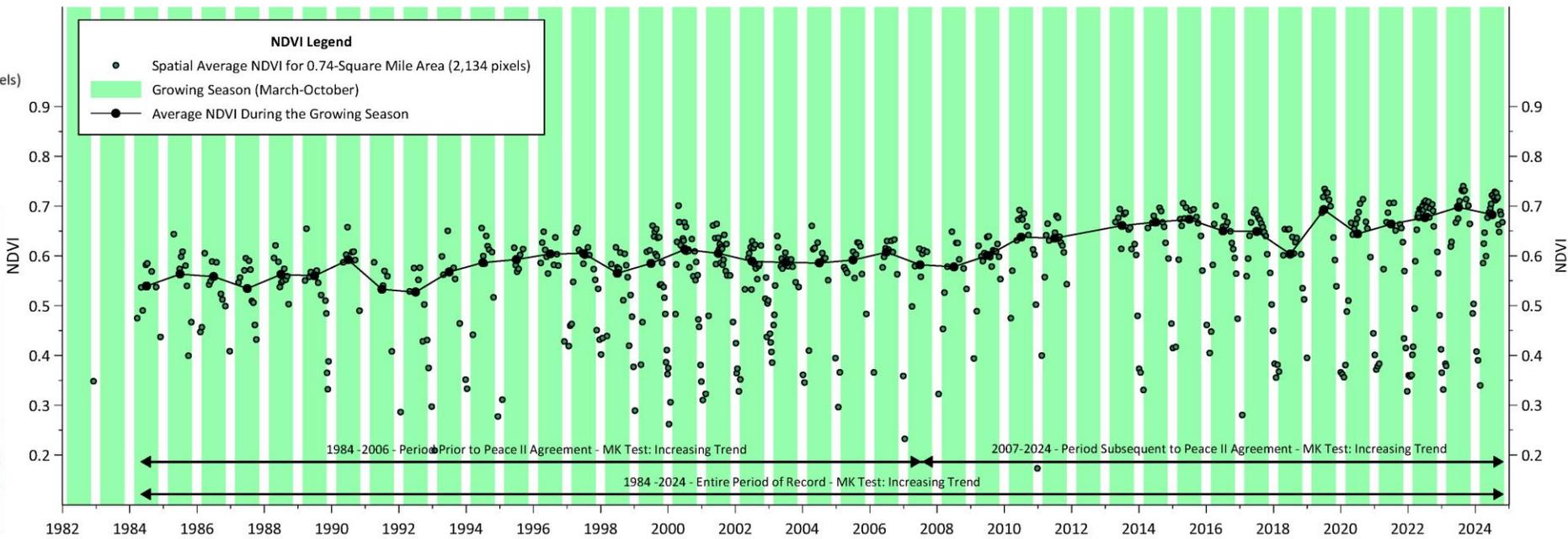
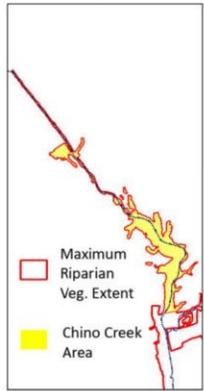
UCI GDE Study Report Section	UCI Line of Evidence	Assessment of Best Available Science	Recommended Work to Address Data Gaps
<p>Remote-Sensing Analysis (NDVI)</p>	<p>The study employed three analytical approaches using the remote-sensing metric NDVI to assess the greenness (health) of the Mesquite trees. The conclusion was that various areas within the BS Mesquite Bosque have high NDVI signals that indicate access to groundwater, similar to the CDL site, with the strongest indicators of groundwater use concentrated around the Borrego Sink where groundwater is shallowest.</p>	<p><i>BAS determination</i> : Partially Met</p> <p>We agree that NDVI can be used to assess the greenness (health) of vegetation, and that the NDVI analyses in the study could be indicating that groundwater is supporting the healthy stands of Mesquite near the Borrego Sink. However, the analyses in the study do not represent conclusive proof of groundwater dependency. An alternative explanation is that these areas of lowest land-surface elevation also receive the highest accumulation of surface-water runoff and infiltration, which could be supporting the Mesquite trees. In our experience, we believe there are more scientifically-defensible methods to use NDVI data to better understand the water sources available to the Mesquite and the stresses that have (or are currently) affecting the health of the Mesquite trees. See the Technical Consultant Recommendations.</p>	<p>NDVI data from the mid-1980s to the present should be analyzed for site-specific areas of the BS Mesquite Bosque on time series charts and compared against all potential stresses to the Mesquite trees (e.g., changes in groundwater levels, precipitation, surface water availability, temperature, human disturbance, etc.) to better understand: how the health of the Mesquite trees has changed over time in different areas of the BS Mesquite Bosque, and how the various stresses may have influenced the observed changes in Mesquite health over time. This type of analysis may reveal more information about which water sources were most important for Mesquite tree survival and health in different areas of the BS Mesquite Bosque since the mid-1980s.</p>



0 0.5 1 Miles

0.74 Square Mile Area (2,134 30 x 30-meter pixels)

Location of Chino Creek Area



Prepared by:



Prepared for:

Prado Basin Habitat Sustainability Committee
2024 Annual Report



Time Series of NDVI and Air Photos
Along Chino Creek Area for 1984 to 2024

Figure 3-6

2021 Air Photo (June 26, 2021)



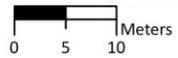
2022 Air Photo (June 30, 2022)



2023 Air Photo (July 7, 2023)



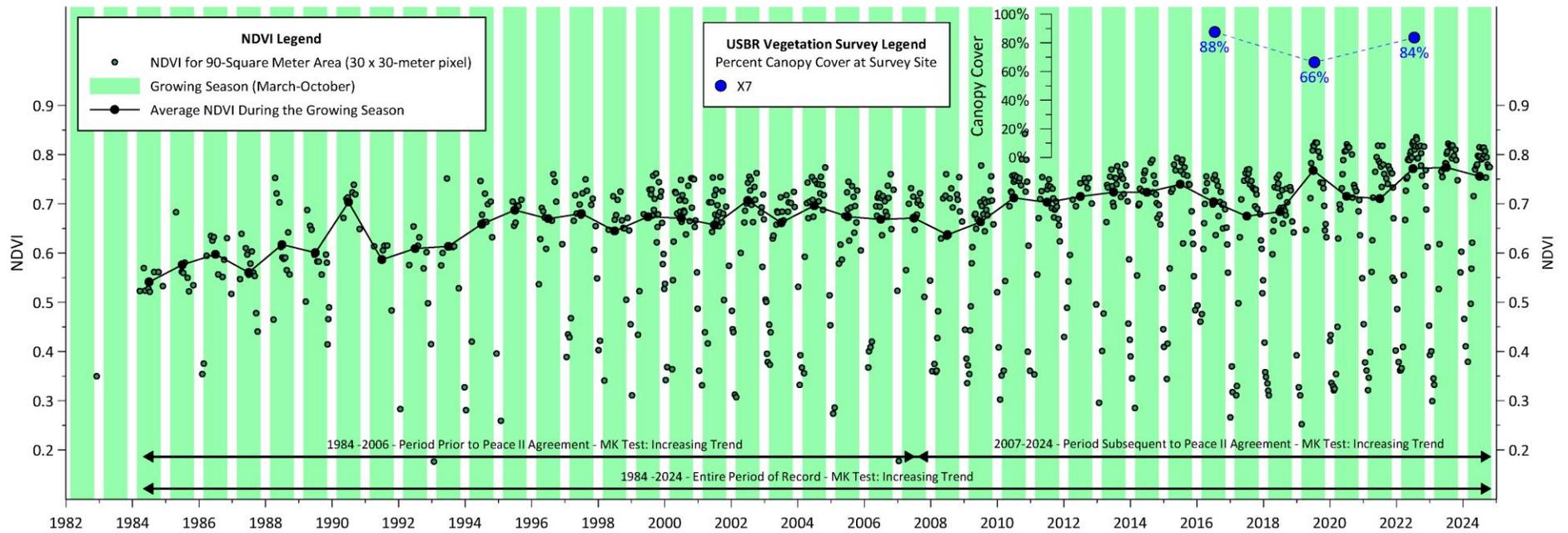
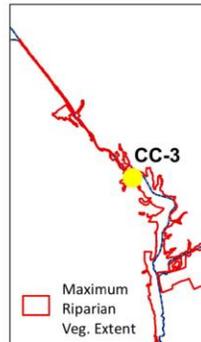
2024 Air Photo (July 1, 2024)



CC-3 Area for NDVI Analysis
30x30 meter pixel

Vegetation Survey Plot Location
10-meter radius

Location Along Chino Creek



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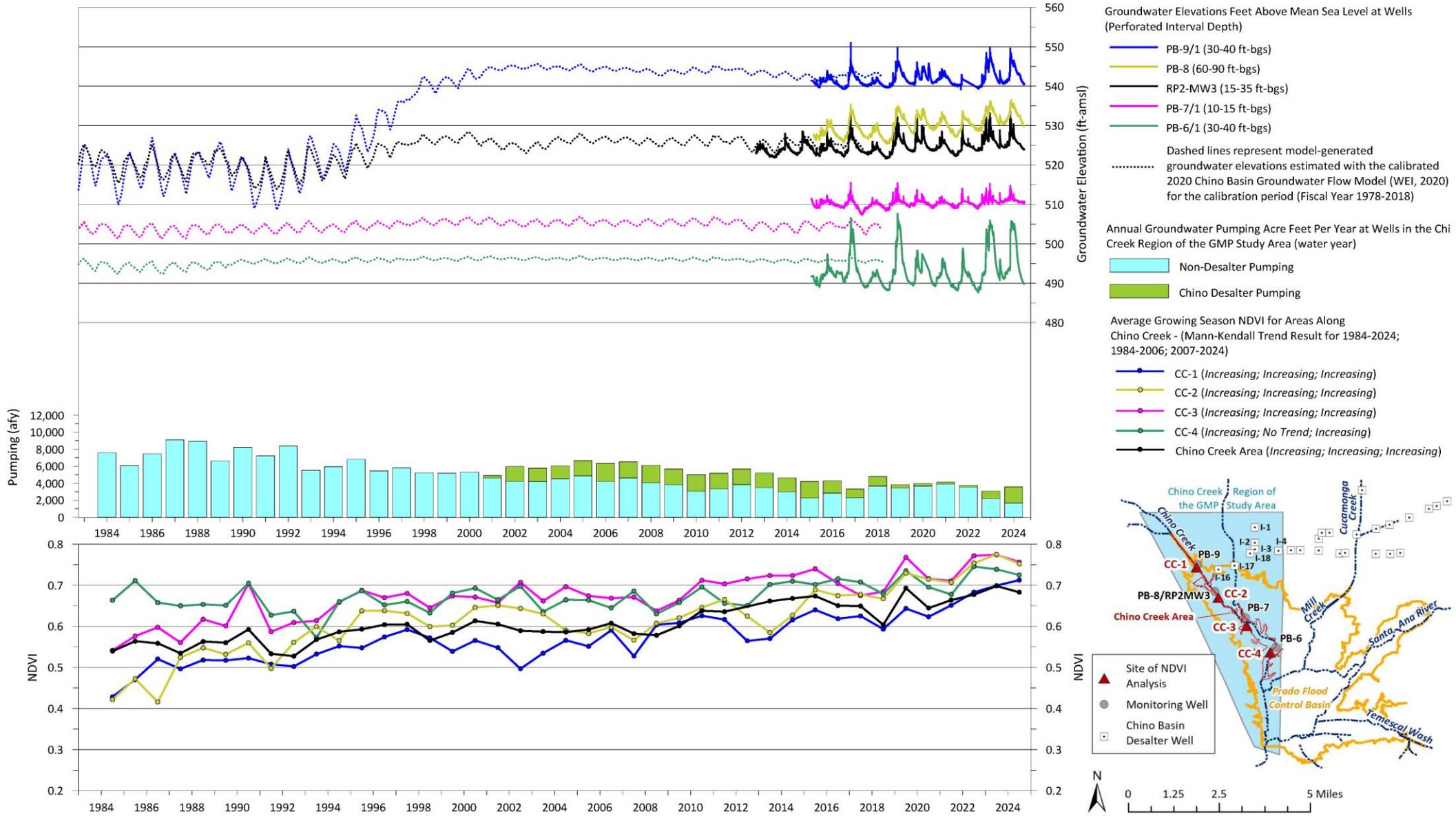
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Prado Basin Habitat Sustainability Committee
2024 Annual Report



Time Series of NDVI and Air Photos
CC-3 Area for 1984 to 2024

Figure 3-8c



Prepared by:



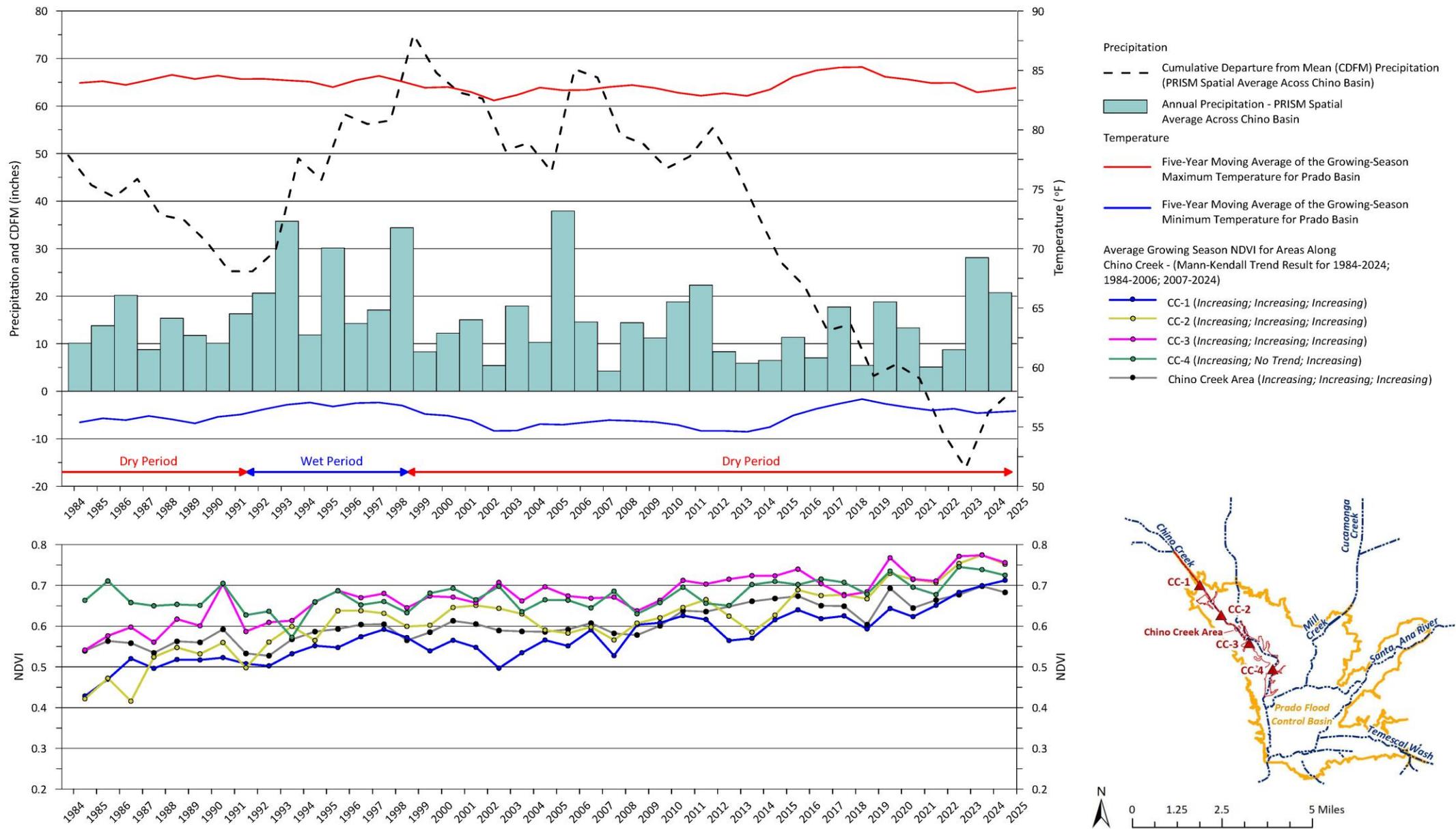
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Prado Basin Habitat Sustainability Committee
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Groundwater Levels and Production versus NDVI
Chino Creek Area for 1984-2024

Figure 3-13a



Prepared by:



Prepared for:

Prado Basin Habitat Sustainability Committee
2024 Annual Report



Climate versus NDVI
Chino Creek Area for 1984-2024

Figure 3-17a

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<p>Dry Period Evapotranspiration in the GDE</p>	<p>The study employed instrumentation to directly measure ET rates in the BS and CDL Mesquite Bosques from May 2024 to January 2025. The monitoring results showed that despite extremely low rainfall, ET rates remained consistently high across all monitored sites, well beyond the amount of available rainfall, which confirms that Mesquite trees rely on groundwater to support growth and transpiration.</p>	<p><i>BAS determination</i> : Partially Met</p> <p>We agree that the ET rates measured by the sensors are greater than the rates of direct precipitation; and hence, other source(s) of water must be necessary to satisfy the measured ET rates in the BS Mesquite Bosque over the dry, hot growing season.</p> <p>However, we disagree with study conclusion that the ET sensors provide direct evidence of groundwater use by Mesquite trees. The other source(s) of water could be:</p> <ul style="list-style-type: none"> -- The deep regional aquifer. -- Soil moisture within the unsaturated zone that is fed by infiltration of precipitation and stormwater runoff that flows through and accumulates in the BS Mesquite Bosque. -- Both above. 	<p>This method of ET monitoring generates site-specific estimates of ET, which could be used to better constrain the BVHM estimates of groundwater ET. The ET estimates from the ET sensors should be compared more thoroughly to other ET estimation methods (e.g. OpenET, CIMIS, etc.). Uncertainty in the ET estimates should be described and quantified, as well as the uncertainty in the type of water being utilized by the Mesquite trees (e.g., soil moisture vs. aquifer).</p>

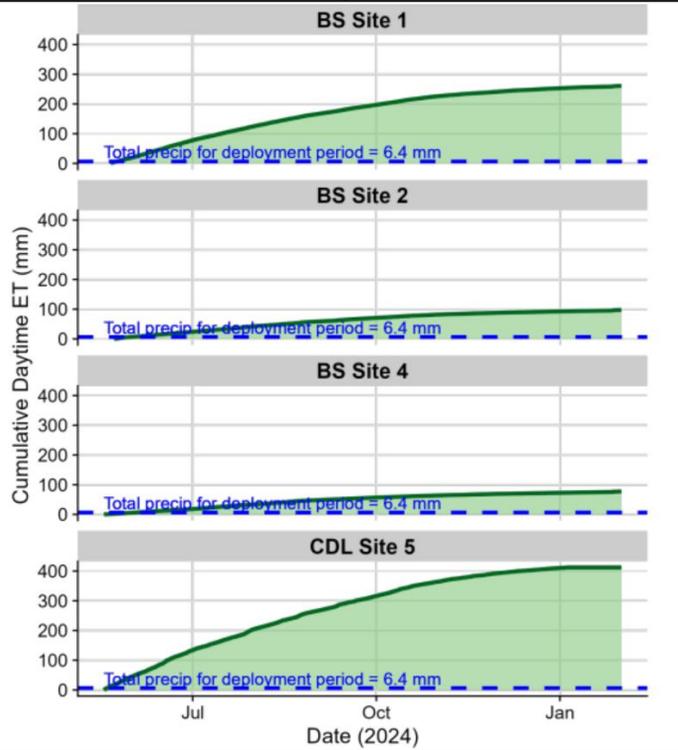


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Historical Precipitation Trends	To better understand how surface-water availability to the BS Mesquite Bosque has changed over time, the study assessed historical trends in precipitation using monthly data downloaded from PRISM over the period September 1981 to December 2024. The study concluded that there have not been dramatic declines in precipitation which might explain the decline in the extent and health of the BS Mesquite Bosque, and that the trend towards lower water year precipitation is not statistically significant.	<i>BAS determination : Not Met</i> We disagree that the declining trend in precipitation over the last few decades is not statistically significant. Our analysis of the historical precipitation data indicates the region has been experiencing a 30-year dry period since 1995, punctuated by a few wet years.	Climatic data (e.g., precipitation and temperature) should be compared against NDVI data over time to better understand the relationship between climate and the health/extent of the BS Mesquite Bosque.

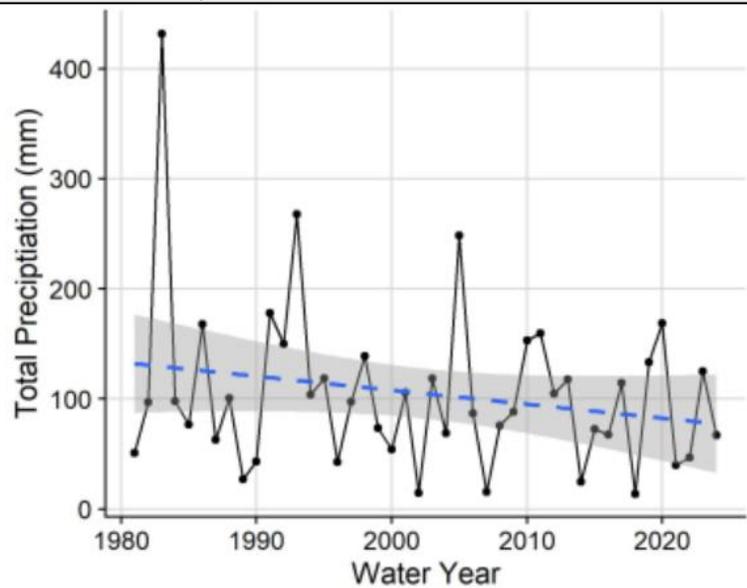


Figure 3.2. Total precipitation across the 1981 - 2024 water years.

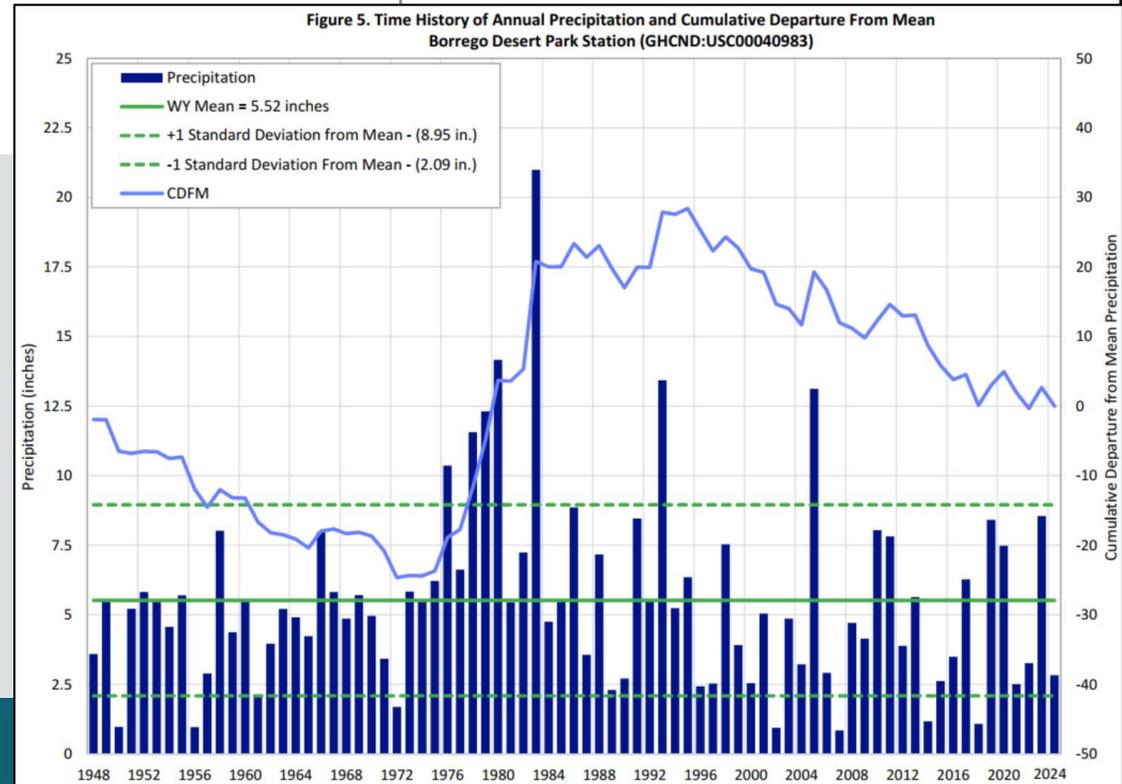


Figure 5. Time History of Annual Precipitation and Cumulative Departure From Mean Borrego Desert Park Station (GHCND:USC00040983)

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Considering GDEs in Minimum Thresholds

The study calculated the mean NDVI across the BS Mesquite Bosque during the dry season (1 May –30 June 2024) and analyzed its relationship to depth-to-groundwater in 2024 in an effort to recommend minimum thresholds for depth to groundwater. NDVI values declined substantially at depths greater than 60-75 feet bgs, suggesting that Mesquite tree health is impaired beyond this range—likely due to reduced access to groundwater.

BAS determination : **Not Met**

The highest NDVI values are concentrated in areas surrounding the Borrego Sink. This spatial pattern of healthy Mesquite trees is likely due to greater access to the various water sources in these areas, including: relatively shallow groundwater; relatively abundant stormwater runoff that preferentially accumulates in the Borrego Sink area and percolates to the underlying soils; or both.

Minimum thresholds for groundwater levels are not recommended at this time until the data gaps are sufficiently filled.

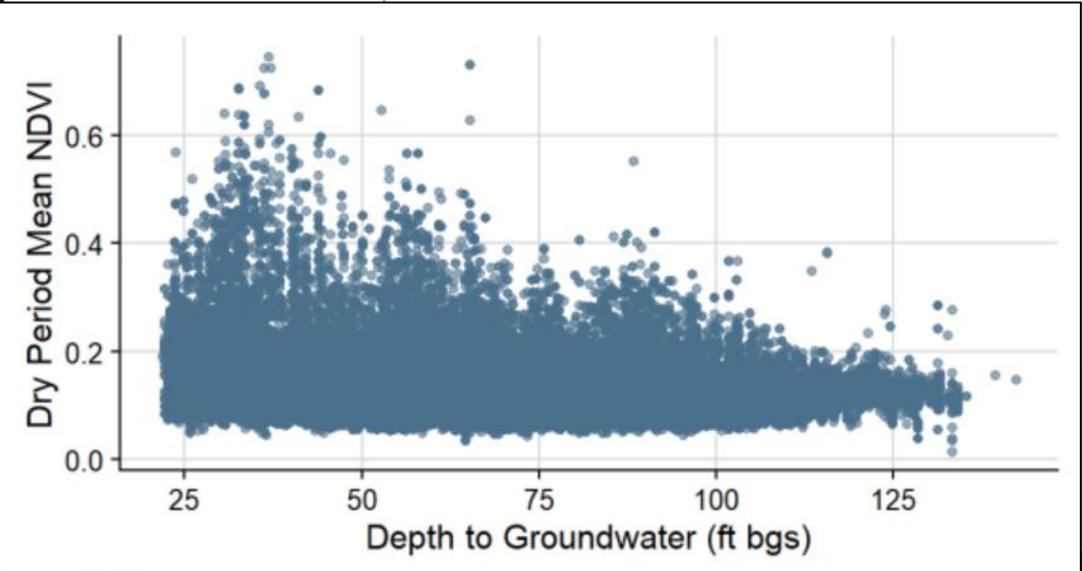


Figure 3.3. Dry Period NDVI and predicted depth to groundwater. The highest NDVI mesquite are found where groundwater is predicted to be within 22 - 60 feet bgs.

Currently, there are too many data gaps to establish numeric minimum thresholds for groundwater levels, including: (i) a paucity of measured depth to the groundwater table and its capillary fringe; (ii) knowledge of the maximum depth and growth rates for Mesquite tree tap roots; and (iii) the role of soil moisture as a water source for the Mesquite trees.

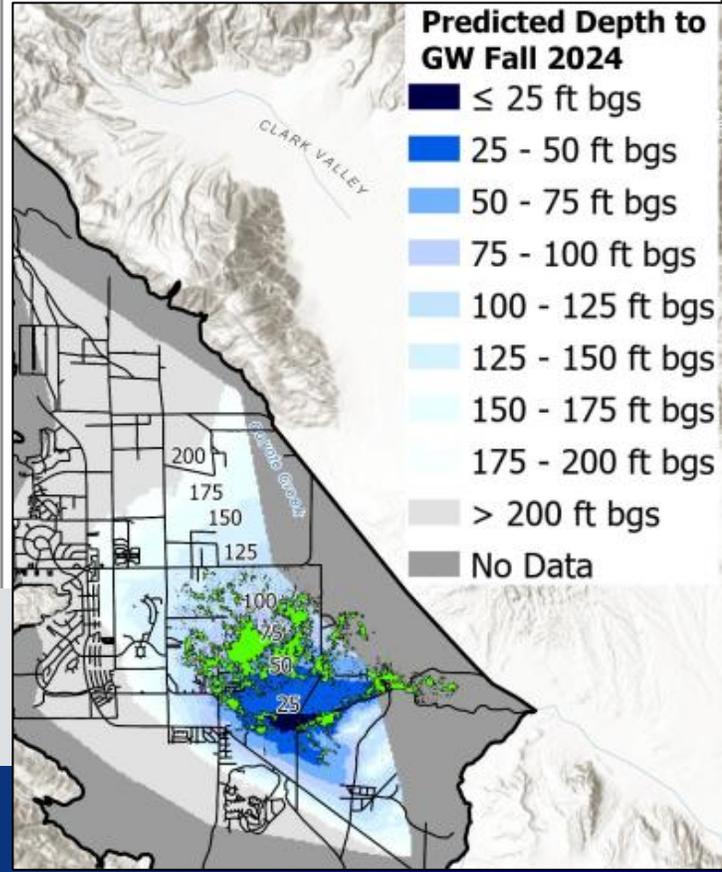


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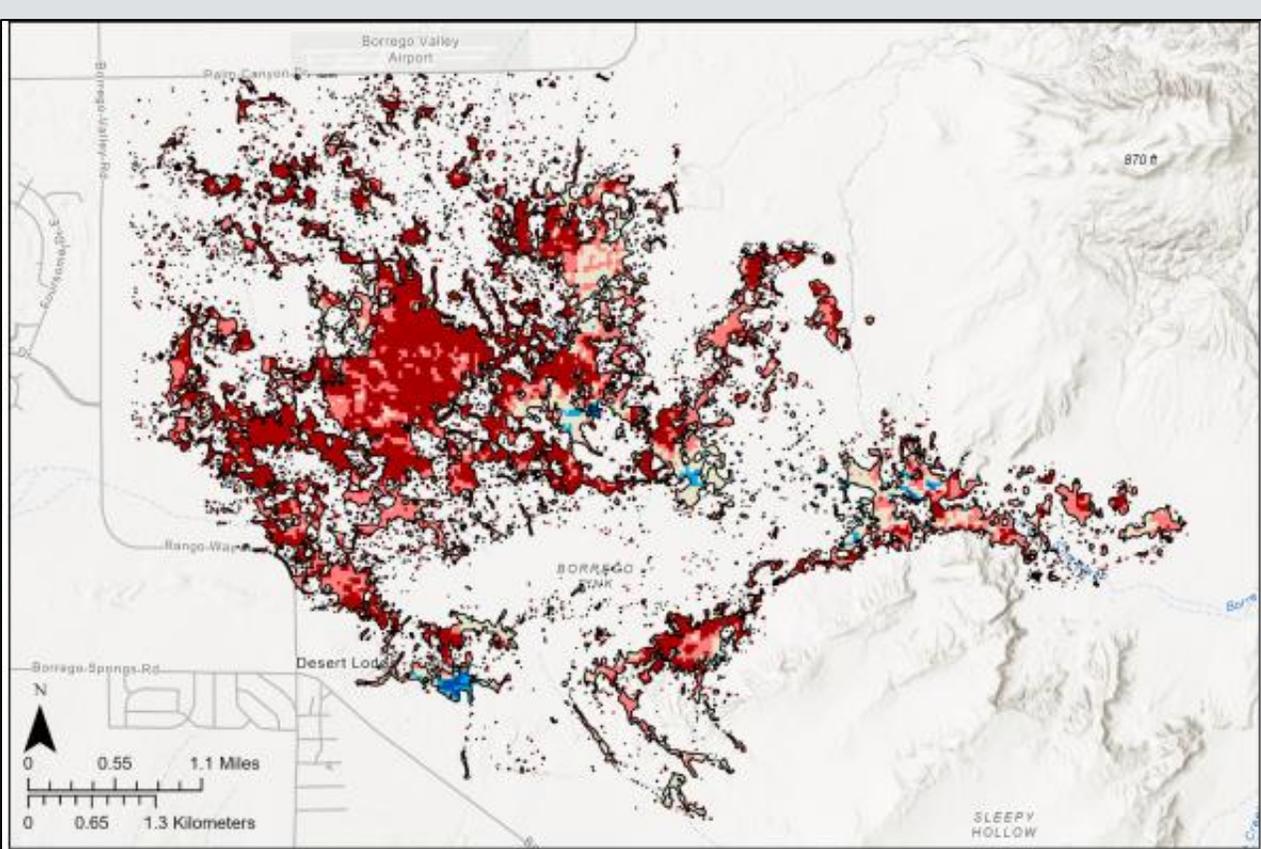
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<p>Quantification of Mesquite Groundwater Transpiration</p>	<p>The study estimated the annual volumes of groundwater ET (ET_{gw}) that support the BS Mesquite Bosque using data derived from OpenET and the ET sensors and the equation [$ET_{gw} = \text{Total ET} - \text{Precipitation}$]. The study results and conclusions were:</p> <ul style="list-style-type: none"> -- OpenET substantially underestimates ET relative to the ET sensors. -- ET_{gw} of the BS Mesquite Bosque is at least 645 afy. 	<p><i>BAS determination</i> : Partially Met</p> <p>We agree that the estimates of total ET in the study indicate that the BS and CDL Mesquite Bosques are using significantly more water than is provided by direct precipitation, and that the main source of water needed to support the ET demands of the Mesquite trees is stored in the subsurface.</p> <p>However, the study methods ignored:</p> <ul style="list-style-type: none"> -- The potential role of soil moisture in the vadose zone as a water source that is satisfying at least a portion of the ET_{gw} demands of the Mesquite trees -- The ET demands of other non-Mesquite vegetation. 	<p>Continue the monitoring and estimation of ET of the BS Mesquite Bosque. These data can be used to constrain future BVHM updates and recalibrations to more accurately simulate the water budget of the Basin. However, additional consideration and analyses should be performed to address the following:</p> <ul style="list-style-type: none"> -- OpenET estimates of ET are derived from six different models plus an “ensemble mean.” More expert analysis is necessary to choose the OpenET models best suited for estimating ET in natural desert environments. -- The potential role of soil moisture in satisfying at least a portion of the ET demands. -- The ET demands of other non-Mesquite vegetation.

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<p>Chronic Lowering of Groundwater Levels</p>	<p>The study assessed rates/trends in historical changes in groundwater levels at wells near the BS and CDL Mesquite Bosques for pre- and post-SGMA periods. The main observations and conclusions were:</p> <ul style="list-style-type: none"> -- Historical and recent declines in groundwater levels were greatest near the BS Mesquite Bosque, primarily due to over-pumping of the Borrego Springs Subbasin. -- The high rates and magnitudes of groundwater declines indicate a high likelihood that these declines are responsible for the past and current adverse impacts on the BS Mesquite Bosque, which will continue unless without actions to reduce the groundwater-level declines. 	<p><i>BAS determination</i> : Partially Met</p> <p>We agree with the observations that historical groundwater-level declines have been substantial, and that these declines have been responsible for adverse impacts to the BS Mesquite Bosque which was once a thriving GDE.</p> <p>We disagree with conclusion of the study that current declines in groundwater levels are responsible for current trends in degradation of the BS Mesquite Bosque. There are other alternative explanations, such as the recent relatively dry climate that could be adversely affect Mesquite trees that do not have access to the regional aquifer system.</p>	<p>The Watermaster is already implementing the pumping rampdown (and is substantially ahead of schedule) to stabilize groundwater levels across the Basin. The Watermaster should continue these efforts to stabilize groundwater levels and continue its current groundwater-level monitoring program to track its progress towards groundwater-level stabilization.</p> <p>Additional monitoring wells within the BS Mesquite Bosque are needed to understand depth-to-groundwater and ongoing changes in depth-to-groundwater. In addition, other important understanding on the soil profile, and its role in supporting the Mesquite trees, could be collected if a new monitoring well is constructed.</p>

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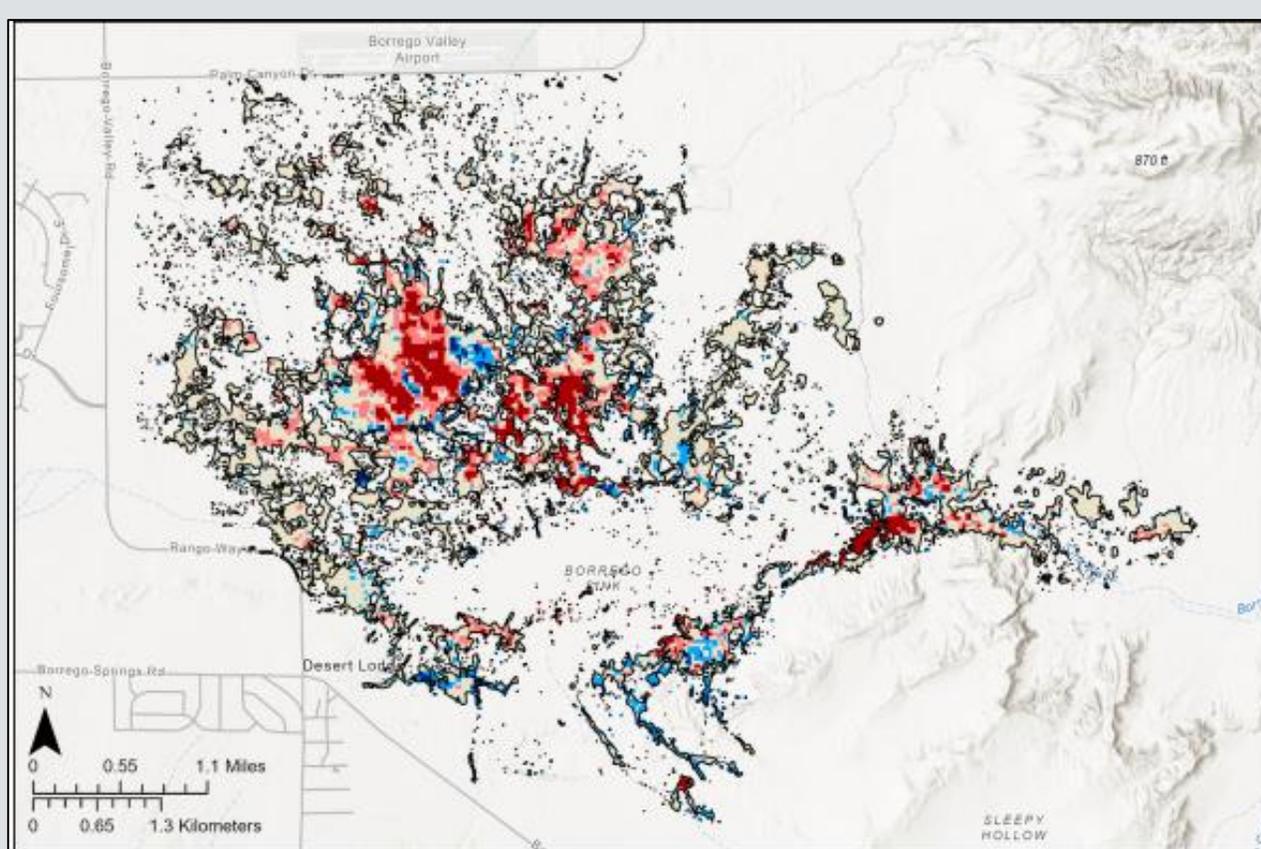
UCI GDE Study Report Section	UCI Line of Evidence	Assessment of Best Available Science	Recommended Work to Address Data Gaps
<p>Changes in Mesquite Bosque Health</p>	<p>The study assessed long-term trends in Mesquite Bosque health in relation to groundwater levels by analyzing annual average NDVI over the dry season (May 1-June 30) for the pre-SGMA period (1984-2015) and post-SGMA period (2015-2024). The main results and conclusions were:</p> <ul style="list-style-type: none"> -- For the pre-SGMA period, NDVI declines were widespread and coincided with about 45 ft (~1.5 ft/yr) of groundwater-level declines. Concentrated strongholds of healthy Mesquite habitat were noted around the Borrego Sink, where groundwater is closer to the surface, and near the WWTP percolation ponds. -- For the post-SGMA period, NDVI declines and groundwater-level declines continued, but at reduced rates. The areas of NDVI stability and improvement coincide with current strongholds of healthy mesquite habitat, particularly around the Borrego Sink and near the percolation ponds of the WWTP. -- Other factors also contributed to the observed NDVI declines: human development, Mesquite removal, soil disturbances/erosion, off-road traffic, climate change, disease, and pests. 	<p><i>BAS determination</i> : Partially Met</p> <p>We agree that this analysis indicates that groundwater-level declines during the pre-SGMA period (1984-2015) were largely responsible for the declines in NDVI and widespread die-off of Mesquite trees, except in areas of surface water availability, such as the WWTP ponds and the Coyote Creek floodplain.</p> <p>The analysis does not necessarily confirm that groundwater-level declines during the post-SGMA period (2015-2024) were responsible for the concurrent declines in NDVI, based on the following:</p> <ul style="list-style-type: none"> -- The patterns of NDVI increases and decreases are “patchy” across the BS Mesquite Bosque, which is inconsistent with the proposed cause of regional declines in regional groundwater levels, but may be more consistent with site-specific availability (or lack thereof) of surface water, soil moisture, and/or perched groundwater, which all would be controlled by the surface-water flow patterns and the underlying hydrogeology. -- 2015-2024 was a relatively dry period, which could be responsible for observed NDVI declines 	<p>NDVI analysis using Landsat-derived NDVI data (1984-2025) should be performed at specific cells (or groups of cells) where the Mesquite trees in BS Mesquite Bosque were once or are currently dense, so that other non-mesquite vegetation is screened out. Time-series charts should be prepared for these focused areas to compare the changes in NDVI vs. all factors that could influence the health of the Mesquite trees, such as: changes in groundwater levels; temperature; precipitation; surface water inflows; etc. This analysis may better describe the most relevant factors that have affected the BS Mesquite Bosque over time.</p> <p>Other factors that could have also contributed to the decline of BS Mesquite Bosque need to be better characterized and mapped relative to the changes in NDVI, such as: areas of human development; areas where Mesquite trees were removed; areas of soil disturbances, erosion, and off-road traffic; diseases; and pests.</p>



Change in Dry Period NDVI (1984-2015) using MK Tau

- Strong, Consistent Decrease
- Moderate, Consistent Decrease
- No Change
- Moderate, Consistent Increase
- Strong, Consistent Increase

Figure 4.7. Long-term changes (1984-2015) in dry period NDVI in the Borrego Springs mesquite bosque. Areas in red have consistently declined over the past four decades, while areas in tan have remained stable, and areas in blue have consistently improved. Approximately 84% of the mesquite bosque habitat has declined, 15% has remained stable, and 1.6% has improved.



Change in Dry Period NDVI (2015-2024) using MK Tau

- Strong, Consistent Decrease
- Moderate, Consistent Decrease
- No Change
- Moderate, Consistent Increase
- Strong, Consistent Increase

Figure 4.8. SGMA Implementation Period (2015-2024) changes in dry period NDVI in the Borrego Springs mesquite bosque. Approximately 27% of the habitat has shown consistent declines since the implementation of SGMA, demonstrating undesirable consequences of groundwater pumping (shown in red), while areas in tan have remained stable, and areas in blue have consistently improved.

Table ES-1. Summary of Assessment of UCI GDE Study Report and Recommendations for Next Steps

UCI GDE Study Report Section	UCI Line of Evidence	Assessment of Best Available Science	Recommended Work to Address Data Gaps
<p>Perched Aquifer Evaluation</p>	<p>The study evaluated the hypothesis that that “perched groundwater” conditions beneath the BS Mesquite Bosque support its ET demands, rather than the deeper regional aquifer system. The evidence evaluated included: well driller’s logs, AEM surveys, soil moisture data of the top 5 ft of soil profile, and historical groundwater-level monitoring data. The study concluded that perched groundwater conditions do not exist beneath the BS Mesquite Bosque.</p>	<p><i>BAS determination</i> : Not Met</p> <p>We disagree with the analysis methods and conclusions of the evaluation for the following reasons:</p> <ul style="list-style-type: none"> -- Perched groundwater conditions have been documented to exist in the vicinity of the BS Mesquite Bosque (e.g., in the vicinity of the BWD WWTP percolation ponds). -- The interpretations of the AEM survey resistivity profiles were incorrect. -- The soil profile has not been physically explored or characterized, which is a significant data gap. -- Well driller’s logs are sparse and the borehole sediment descriptions are typically of low resolution and poor quality; hence, these logs are not good information to identify perched groundwater. -- Water-levels measured at wells screened across the saturated zone are not good indicators of the presence/absence of perched groundwater conditions. 	<p>The gap in understanding of the soil profile should be filled, potentially through the installation of a new monitoring well(s) in the BS Mesquite Bosque. This work could include:</p> <ul style="list-style-type: none"> -- Characterization of the soil profile from the ground surface to/through the saturated zone, including the presence or absence of “perched” groundwater conditions. -- Collection of soil samples to analyze for soil moisture and isotopic water chemistry across the vadose zone. -- Inspection of the vadose zone and saturated zone for evidence of live Mesquite tree roots. -- Installation and monitoring of soil-moisture sensors across the entire thickness of the vadose zone to track seasonal and long-term changes in soil moisture.

Table ES-1. Summary of Assessment of UCI GDE Study Report and Recommendations for Next Steps

UCI GDE Study Report Section	UCI Line of Evidence	Assessment of Best Available Science	Recommended Work to Address Data Gaps
<p>Monitoring Recommendations</p>	<p>The study included various recommendations for future hydrologic and biologic monitoring of the BS Mesquite Bosque, including:</p> <ul style="list-style-type: none"> -- Groundwater levels at key wells. -- Changes in groundwater levels. -- Changes in vegetation health via remote-sensing and field surveys. -- ET 	<p><i>BAS determination</i> : Partially Met</p> <p>We believe that hydrologic/biologic monitoring of the BS Mesquite Bosque over time should be performed to:</p> <ul style="list-style-type: none"> -- Improve the understanding the relationship (or lack thereof) between changes in groundwater levels and the health of the BS Mesquite Bosque. -- Inform adaptive management strategies to protect the BS Mesquite Bosque, if the monitoring results deem this necessary. <p>However, we suggest monitoring methods that are somewhat different than those recommended in the UCI GDE Study Report (see Technical Consultant Recommendations to the right).</p>	<p>The Watermaster should consider the development of a <i>Monitoring Work Plan for the BS Mesquite Bosque</i>, which could include the following:</p> <ul style="list-style-type: none"> -- Tracking the extent and health of BS Mequite Bosque via remote-sensing and field surveys. -- Identification of additional existing wells in the bosque for groundwater monitoring. -- Construction of a new monitoring well(s) that could also include efforts to characterize the vadose zone. -- Tracking of all factors that could affect the health of the BS Mesquite Bosque. -- Characterization of the role of soil moisture within the vadose zone as a potential water source that supports the BS Mesquite Bosque. -- Monitoring ET and estimating ET_{gw} of the BS Mesquite Bosque.

Table ES-1. Summary of Assessment of UCI GDE Study Report and Recommendations for Next Steps

UCI GDE Study Report Section	UCI Line of Evidence	Assessment of Best Available Science	Recommended Work to Address Data Gaps
<p>Management Recommendations</p>	<p>The study included various recommendations for management actions to protect the BS Mesquite Bosque, including:</p> <ul style="list-style-type: none"> -- Designate the BS Mesquite Bosque as a GDE. -- Establishing minimum thresholds for groundwater levels and rates of change in groundwater levels. -- Allocation of at least 645 afy of ET_{gw} to the BS Mesquite Bosque in the Subbasin water budget. -- Explore potential strategies to improve groundwater conditions. 	<p><i>BAS determination</i> : Partially Met</p> <p>We believe the available data/information suggest that the existing BS Mesquite Bosque could be a beneficial user of the regional aquifer system, at least in part.</p> <p>However, there are important gaps in understanding (that the report does not acknowledge) that must be filled before a conclusion can be reached regarding the groundwater dependency, or lack thereof, of the BS Mesquite Bosque.</p> <p>Therefore, until the gaps in understanding are filled, we believe it's premature to:</p> <ul style="list-style-type: none"> -- Establish minimum thresholds for groundwater levels at wells and/or rates of groundwater level decline. -- Allocate 645 afy to the BS Mesquite Bosque in the Subbasin water budget. 	

Summary of TC Findings and Recommendations

Review of UCI GDE Study Report

- UCI Report indicates the Mesquite Bosque **could be** a GDE, but does not represent proof →
- In many cases, we identified data gaps that hindered data interpretation
 - Role of deep soil moisture within the vadose zone as a potential water source that supports the Mesquite Bosque
- It's premature to set SMC for groundwater levels or implement groundwater management actions beyond the Rampdown
- Primary TC recommendation for the Watermaster:
 - Prepare a **“Monitoring Program Work Plan”**
 - It may not be economically feasible for Watermaster to implement work plan
 - Grants and partnerships may be necessary → work plan could assist in obtainin

Next Steps

- Today – Q&A with TC and UCI and receive verbal TAC/EWG feedback
- Receive written feedback by March 12, 2026
 - Comments on TC Recommendation Report
 - Recommendations for next steps by the Watermaster
- Prepare a draft TAC/EWG Recommendation Report by late March/early April

Schedule	Activities	Status
January 2026	<ul style="list-style-type: none"> • Complete Draft TC Recommendation Report 	<ul style="list-style-type: none"> • Completed. Draft report sent to TAC/EWG on February 13, 2026.
February 2026	<ul style="list-style-type: none"> • TAC/EWG meeting to review Draft TC Recommendation Report • Receive TAC/EWG feedback on Draft TC Recommendation Report 	<ul style="list-style-type: none"> • The joint TAC/EWG meeting is scheduled for February 26, 2026.
March 2026	<ul style="list-style-type: none"> • Prepare Draft TAC/EWG Recommendation Reports based on TAC/EWG feedback 	<ul style="list-style-type: none"> • Not yet started
April 2026	<ul style="list-style-type: none"> • TAC/EWG meeting to discuss Draft TAC/EWG Recommendation Reports • Prepare Draft Final TAC/EWG Recommendation Reports based on TAC/EWG feedback 	<ul style="list-style-type: none"> • The joint TAC/EWG meeting is scheduled for April 8, 2026.
May 2026	<ul style="list-style-type: none"> • Prepare Final TC and TAC/EWG Recommendation Reports • Board meeting to discuss Final TC and TAC/EWG Recommendation Reports and recommended next steps 	<ul style="list-style-type: none"> • Not yet started
June 2026	<ul style="list-style-type: none"> • Board meeting to approve scope of work for next steps in WY 2026 - 2027 	<ul style="list-style-type: none"> • Not yet started

Agenda

- I. Roll Call, Meeting Objectives, and Meeting Procedures
- II. Public Comment
- III. Review of the UCI GDE Study Report as Best Available Science
- IV. Public Comment



Thank You!