

September 2023 Landscape Management Update



Mountain Park Ranch



Maintenance:

- General blowing and raking of the granite will be the focus through the next service cycles.
- We have also inspected numerous washes and they are all doing well since the last cleaning and basically no rain over the last 45 days.
- Turf , Trees and Plants have all have had their water cycle times increased with summer now upon us.

Looking ahead:

- We have started losing more of the Saguaro's from the extreme heat and Bacterial Necrosis returning and rotting them out at the base causing them to topple over under their massive weight. See Page #3
- Storm damage clean up occurred on 8/31/2023 was very devastating. see page #5 for a map and pages 6 & 7 for some of the damage in photos.
- Additional information on a very large Saguaro that was lost due to the extreme heat. page # 8.
- Overseeding information and scheduled can be found on page # 9
- Turf Broadleaf weed treatment and fertilizer information on page #10
- Update on continued tree trimming prior to the storm event can be reviewed on page # 11 & 12
- Information on extreme heat was included again for reference.
- Water Management:
- Through the first 7 months of the year, we are \$40K below budget, which great as we went over by \$5K in July and I am anticipating again in August with the extreme heat we have experienced.

Homes: 6000 - Plus Commercial Locations Residents: Over 20,000 Granite: 35 acres Turf: 17 acres Trees: 2667 Irrigation Controllers: 63 Irrigation Valves: 784 Sprinkler Heads: 1,460 Backflows: 63 Valve of Common Area Landscape **\$18,530,000**





Mountain Park Ranch General Maintenance















Mountain Park Ranch

General Maintenance





Mountain Park Ranch General Maintenance



Eddie and Myself have been called numerous times over the Last 45 days because of fallen Saguaro's and or trees



Maintenance crew has helped with the storm damage to keep cost down

4





Wash inspections have continued during storm clean up



Mountain Park Ranch

Map of storm damage from night of 8/31/2023

Yellow areas are downed branches Red areas are lost trees Green areas are lost trees and root balls Blue areas are lost Saguaro's





Mountain Park Ranch Storm Damage 8/31/2023











The storm on the evening of 8/31 was community wide and the community suffered significant damage



Mountain Park Ranch Storm Damage 8/31/2023









The loss of trees was very significant ProQual will put together a comprehensive plan for replacements in the Spring of 2024







Mountain Park Ranch Saguaro Health



Unfortunately, we had another large Saguaro succumbed to Bacterial Necrosis. This giant was north of the home located at Ranch Circle N. & Rocky Slope and was removed Because of the fear was that with it decaying it was going to fall into the adjacent home

Bacterial Necrosis is a vascular disease and is what has been determined to be affecting the Saguaro Cactus throughout the valley. This condition can be exasperated in extreme heat conditions as we are experiencing this summer. The process is where the Saguaro rots from the inside out , usually at a lower level on the plant and it causes the Giant Saguaros to fail and eventually topple over from the weight of the giant plants. We have been monitoring the remaining Saguaros and have also solicited the opinion of an outside expert for review of the overall health and if anything can be done to slow or prevent the continuing decline and eventual death of these majestic monsters of the Southwest Desert. This happened in the summer of 2020 when we had a very long and hotter than usual summer.



Overseeding For Winter Lawn

What is Overseeding, and why do it?

There are several regions throughout the United States that experience an extreme difference in temperatures, where the same type of grass doesn't survive year-round. With extreme highs of 110+ in the summer, and lows below freezing in the winter, Phoenix is located in one of those regions. Parks and lawns in Phoenix are planted with a very durable/heat tolerant Bermuda grass base. This type of grass survives our hot Arizona summer months, but once the nighttime temperatures get into the Mid 60's, Bermuda grass begins to go dormant.With that being the case... we must "overseed" this Bermuda grass base with a grass seed that will thrive during our cooler winter months.

When to Overseed

The best time to overseed is during the month of October, or when the nighttime temperatures drop into the Mid 60's.

Steps for the Overseeding process



Step 1—Scalping

- To insure a good overseed for the winter, you need to eliminate the competition of your summer lawn and reduce the thatch that has accumulated over the summer. This is done to ensure the seed gets down to the soil.
- Process is accomplished by mowing the grass to 1" or less in height. You may have to mow your lawn 2 or 3 times to accomplish this. You are now ready to seed.

• Step 2—Seeding

- The better quality your grass seed, the better quality your lawn will be. We recommend perennial ryegrass grasses that are suited for Arizona's desert climate, spread at a rate of 12-15 pounds per 1,000 square feet.
- Spread your seed in two directions, half in one direction and the other half in a direction perpendicular to the first. This will minimize overlaps and skips. It is important to spread your seed as evenly as possible for the best results.



• Step 3-Water

 Water is critical! You want to maintain a moist seedbed for a period of seven to ten days to allow the seed to germinate. You will want to water 4 to 5 times per day for very short cycles that leave no puddles and no dry spots. After the seed has germinated and grown to a height of 3/4" to 1", you may reduce watering to 2-3 times per day. After ten to fourteen days, you can reduce watering to once per day. Once your winter lawn is established, you will be able to lessen the watering further.

• Step 4—Mowing

• The first mowing should occur 14-21 days after germination. Follow the 30% rule for mowing—never remove more than 30% of the leaf at one time. This will keep you from pulling out your new young seedlings. Once your ryegrass is established, you can resume to your regular mow schedule.

Step 5—Turf Nutrition

• Your winter lawn will require a solid Turf Nutrient plan. For the best results, feed your ryegrass every 4-6 weeks with a balanced fertilizer. For an additional "kick of green", use a fertilizer that contains iron.

Landscape Management Solutions to increase the value of your community!

Overseeding this year will be as scheduled:

- Water turned off to all areas being overseeded the week of 9/1/2023.
- Mower being lowered each week moving froward week of 9/18/2023.
- Growth Regulator applied the week on 10/02/2023 to minimize Bermuda recovery during watering for Rye Seed.
- Seed will be applied the week of 10/16/2023 weather permitting.



ProQua	al Spray Log	№. 9/13/2023 01955
Jo	b Details	
Eric - App Lic #060204 Mountain Park Ranch HOA		Qualifying Party: Eric Wozniak QA Lic #: 30955
Date 09/13/2023 Time 01:26 PM	Weather Conditions Temperature (F) 100 Wind (mph) 4	GPS Location http://maps.google.com? q=33.318489,-112.008080&z=1 Location Description Turf
Spr	ay Details	
Application Type Turf Application Work Being Performed Turf application selective broadleaf throughout		Chemicals / Rate Used Fertilizer blend/2gal to acre Battleship/1qt to acre Amount Sprayed (gallons) 200
Photo 1 Have all areas been completed? Yes Map of Area Completed today		
On 9/13/2023 all turf areas were tre n preparation for the overseeding ir	eated for summer b nstallation next mo	roadleaf weeds, this is nth.
	Landscape Managemen increase the value of you	t Solutions to ur community!



Mountain Park Ranch

Scheduled Tree Trimming







The previously scheduled tree trimming has been on going and was instrumental in reducing the amount of damage that may have occurred on 8/31/2023

Mountain Park Ranch Scheduled Tree Trimming



Mountain Park Ranch Homeowners Association Extreme Heat & Plant Health

Since 2020, we have had elevated mortality in our population of saguaros compared to mortality rates pre-2020," said Kimberlie McCue, the garden's chief science officer. "So, part of our thinking is that there are still saguaros today that were compromised from what they went through in 2020. And that this could be sending them over the edge." quoted from: Kimberly McCue Chief Science Director Arizona Botanical Gardens





Mountain Park Ranch Homeowners Association

Extreme Heat & Plant Health

Extreme Heat and the affects on Plants and Trees

During extreme heat conditions, plants can experience challenges in maintaining their transportation systems due to a combination of physiological and environmental factors. The primary transportation systems in plants are the xylem and phloem, responsible for the movement of water, nutrients, and other essential substances throughout the plant. Here's why these transportation systems may be affected during extreme heat:

1.Water Loss: High temperatures can lead to increased evaporation and transpiration rates from plant surfaces. Transpiration is the process through which water is drawn up from the roots to the leaves and then released into the atmosphere. Under extreme heat, plants may lose water faster than they can absorb it from the soil, leading to a condition known as water stress. This can result in reduced water availability for transport and impact the overall functioning of the xylem, which relies on a continuous column of water for movement.

2.Air Embolisms: Extreme heat can cause air bubbles (embolisms) to form within the xylem vessels. These air bubbles disrupt the continuous water column and block the movement of water and nutrients. This can interrupt the plant's ability to transport water from the roots to the leaves and other parts of the plant.

3.Stomatal Closure: To conserve water during heat stress, plants often close their stomata. Stomata are tiny pores on the leaf surfaces that allow for gas exchange (carbon dioxide uptake and oxygen release) and water vapor release. When stomata close, it reduces transpiration but also limits the entry of carbon dioxide for photosynthesis. This closure can impact the movement of sugars and other products of photosynthesis through the phloem.

4.Protein Denaturation: Extremely high temperatures can lead to the denaturation of proteins within plant cells. This can disrupt various cellular processes, including those involved in transport systems. Proteins are crucial for maintaining the integrity and function of cellular membranes, including those found in xylem and phloem cells.

5.Reduced Metabolic Activity: Heat stress can cause a slowdown in metabolic activity in plants. This can affect the production of energy and the synthesis of various molecules required for transportation processes.

6.Root Damage: Prolonged heat stress can also damage plant roots, reducing their ability to absorb water and nutrients from the soil. This, in turn, can limit the availability of resources for transport through the xylem and phloem.

In summary, extreme heat conditions can disrupt the transportation systems in plants by causing water stress, air embolisms, stomatal closure, protein denaturation, reduced metabolic activity, and root damage. These factors can collectively lead to reduced water and nutrient transport, affecting the overall health and survival of plants during heatwaves.



Mountain Park Ranch Maintenance Update / Water Monitoring

2023 WATER MANAGEMENT WORKSHEET SQ POOTAGE AREA DENSITY ACREAGE CDST PER KGALS									DRO		-		0.022						
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MANUARY	1.437.8	\$12,624,26	518.8	\$154.12	1,956.7	\$12,778.38	1538	\$9.561.98	5	(3,216,40)	75%	857	28	2075	1535	0.19	3.88	0.12	1.00
FERRILLARY	1,783.4	\$15,658,42	543.5	\$191.16	2,426.9	\$15,849.58	1531	\$9,542.78	3	(6,306.80)	60%	1,599	1,482	2234	1591	1.54	0.00	0.76	1.74
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Through the first 7 months of the year, we are \$40K below budget, which is huge as we went over by \$5K in July and I am anticipating and August with the extreme heat we have experienced.

Over the last 60 days we have only gone over budget 1 time with the self adjusting run time features built in within the "Smart Mode"



