



WEATHER MADNESS

Many people would agree that 2020 has been a challenging year so far. That has certainly been the case with respect to weather across the state and around the globe. This year has seen worsening drought conditions in Northern and Central California and record-breaking heat and rainfall in Southern California.

The year started off looking promising with the December snowpack in the Sierra Nevada at 90%. That changed when a high-pressure system sitting over the Pacific blocked storms from moving onshore, denying Northern and Central California of much-needed moisture. This resulted in statewide snowpack levels dropping to 53% and reaching a critical stage at the end of March.

When April arrived in Southern California, several back-to-back storms brought heavy snow to the mountains and above-average rainfall in many areas, which caused flooding in the lower elevations.

The snowpack accounts for approximately one-third of California's water supply needs. Current snowpack levels remain critical at 39%, and go down on record as being the 11th driest year thus far since 1950.

Although Southern California normally experiences pleasant weather in the spring, the region experienced record-breaking heat, with April being the second hottest month in recorded history. Globally, temperatures in April were also the second-highest for the month on record.

Weather forecasters are predicting above average temperatures across our region heading into our hot, dry summer months. As a result, staff will closely monitor weather conditions as well as water allocations and watering restrictions should local water agencies make adjustments in response to reductions in available water supplies.

DRIP IRRIGATION SYSTEMS Drop by Drop

Drip irrigation systems offer a successful alternative to conventional overhead spray irrigation as a means of conserving water. Numerous advancements in drip irrigation technology, materials and products over the past decade have shown to improve irrigation efficiency by as much as 90% with up to 70% in water savings.

Present-day drip irrigation systems date back to the 1960s when plastic drip emitters were developed. The drip emitter addressed the issue of regulating the delivery of water through holes in the plastic supply pipes by using water pressure and friction to control the flow. There are however, a few disadvantages in using a traditional drip emitter system.



The first disadvantage is that emitters are subject to plugging by root intrusion, insects, sediment, or mineral deposits. The roots can also pass through the emitter, clogging the supply line.

Given that drip emitters direct water to the root zone of each individual plant, emitters must be routinely checked for clogging at each plant location. This could add up to several thousand plants and emitters that need monitoring in a large-scale landscape project, thus tacking on additional maintenance expenses.

Secondly, emitter supply lines are buried or covered with mulch, making it difficult to identify the exact location of any leaks. Because drip stations run during off hours and under low pressure conditions, with run-times ranging from 10 to 15 minutes, leaks can go undetected for several days, resulting in substantial water loss.

Finally, experience has shown that the exposed ¼" emitter drip tubing is prone to damage by pedestrian foot traffic. This is a common occurrence when located in commercial building landscape settings, parking

lot landscape islands, or parkway strips, being as people often choose the shortest route to their destination that often means through the landscaping.



Recent advancements in landscape irrigation have addressed many of the above issues with the development of surface and sub-surface dripline emitter tubing and drip tape. The tubing is self-contained and has internal inline emitters placed at regular intervals along the tubing. The emitters are designed to be clog resistant while delivering water at a consistent flow and under constant pressure. One dripline product that Environmental Concept relies upon includes root intrusion protection.

Dripline tubing can be installed above surface or below surface when used for watering trees, shrubs, and ground-cover. The choice between installing dripline above or below grade depends on the location of the project area. Our experience has shown however, that in areas that are vulnerable to foot traffic or accessible to children, pets, or bicycles, it is best to bury the tubing below grade and stake it well using landscape staples or plastic fasteners.

In addition to the water conservation benefits, Environmental Concepts has used dripline irrigation systems extensively on all of the turf removal projects that we have worked on because of its ease in adaptation when retrofitting from overhead spray systems. As a result, we have been able to save our customers tens of thousands of units of water, thus reducing their overall water budgets, with a favorable return on investment (ROI).



NEIGHBORHOOD NUISANCE

The Dennis the Menace of Plants

Environmental Concepts has learned through extensive experience as landscape professionals is that there is a right plant for the right location. This concept needs to be expanded to not only include the physical elements and characteristics of a plant, but to identify what positive and negative impacts a plant may have on its surroundings. An example of a positive impact can be seen when native and water-friendly plants shared the spotlight after concerns for water supply were felt throughout the state.

However, plants can become a menace in many different ways without people knowing or recognizing their impacts, like Dennis the Menace was to his close neighbor Mr. Wilson. We would like to share what we have experienced in the field as well as what other agencies have identified as concerns, issues, and in some cases, negative environmental impacts.

Starting with invasive plants... The California Invasive Plant Council (Cal-IPC), the leading agency in this subject, identifies invasive plants as those plants that are not native to an area, but once established can quickly reproduce and spread and which can cause harm to the environment, the economy, and/or human health. Cal-IPC has compiled an extensive list of plants that they continue to monitor and perform risk assessments in an effort to protect California's environment and economy from invasive plants.



One plant that is on the Cal-IPC invasive plant short list and which is found in our area is the notorious Pampas grass (*Cortaderia selloana*). The plant is highly invasive and a threat to native plants and the

animals that rely upon them. Each plant can produce millions of tiny seeds that can be carried as far away as 20 miles on a breezy day. What kid growing up in California did not have a pretend sword fight with its tall, showy plumes and come home with numerous abrasions caused by the plant's razor-like leaves?

An alarming number of popular garden and household plants are toxic to humans and animals. Although many of these plants make

pleasing additions to the landscape, it is important to know which plants are toxic and to avoid planting them where they may be accessed by children and pets.



One such plant is the succulent 'Sticks on Fire' (*Euphorbia tirucalli*). Its milky latex sap is very toxic to humans and animals upon contact. It is extremely irritating to the skin and eyes, and can even causing temporary blindness.

Sago palms (*Cycas revoluta*) are another popular garden variety and indoor plant that packs a deadly punch to animals. All parts of the sago palm are considered poisonous, with the reddish orange seeds being the most toxic part of the plant. They are readily available at local nurseries and home improvement centers, and most often, without any warning label. Unfortunately, there is not a U.S. Consumer Product Safety Commission warning label requirement for house plants.

Some aesthetic qualities come with a price. Such is the case with the Maidenhair tree (*Ginkgo biloba*), an aesthetically pleasing and popular, ornamental



tree. It is commonly used as a street tree because of its spectacular display of color as its fan-shaped leaves turn to a brilliant shade of gold in the fall. The Ginkgo tree produces green berries that resemble bunches of small green cherries. The green berries turn yellow, then brown in late autumn and fall from the tree. If left on the ground, they begin to rot, emitting an offensive, foul-smelling odor that is often described as vomit or dog poop!

Not all impacts caused by plants are obvious such as the stinky Ginkgo. Many are subtle, especially those triggering environmental consequences. It is therefore, important to thoroughly research all of a plant's characteristics (size, height, debris clutter) as well as its long-term impact on the environment and the surrounding neighborhood.

INVASIVE PLANTS

Good Intentions
Can Lead to Negative Consequences

Plant species are considered to be invasive when they go beyond being a "nuisance" and begin to cause harm to the environment. Invasive plants cause large-scale damage by altering and degrading the natural ecosystem and biodiversity in the areas they invade. They outcompete native species for available re-sources such as water and soil nutrients. Over 6,500 invasive, non-native species are estimated in the United States, resulting in damages in excess of \$100B annually to the U.S. economy.

Some plants have been purposely introduced into an area with good intentions, while others may have been brought in accidentally by natural elements, such as wind, water, or animals. Either way, introducing a species into a new environment may have negative consequences. Such is the case with Tamarisk (*Tamarix ramosissima*). It was brought to North America from Eurasia in the mid-1800's and used for windbreaks and to prevent soil erosion.

Tamarisk, commonly known also as Saltcedar, grows rapidly from seedling to maturity in just one summer and is capable of producing 500K seeds in a single season. It can consume up to 200 gallons of water per day. Its root system is extensive, thus exploiting natural water resources and threatening other native species. Tamarisk, as its namesake suggests, discharges salt taken from its roots into the soil, increasing salinity and killing other plant species.

Having invaded riparian corridors throughout the Southwest, Tamarisk has become one of the most damaging, invasive species in the Western United States. It can be found locally in San Bernardino, San Diego, Orange, and Riverside counties. It is estimated that the Colorado River Basin could recover just under one million acre-feet of water annually through eradication of this plant and revegetation.

