

Stewardship Leaders in Agriculture

Water Conservation

SUNCREST NURSERY- WATSONVILLE, CA

Located on three properties totaling 60 acres near Watsonville in Central California, Suncrest Nursery is a wholesale operation that supplies independent garden stores throughout the state. Specializing in California natives and other drought-tolerant and Mediterranean plants, they grow over 3,000 varieties and over two million plants a year. The General Manager at Suncrest Nursery is Jim Marshall, who, with a background in hydrology, is very passionate about using water in the most efficient manner. With his help, they have re-developed the water use in their operations, and have cut their water use in half.

MOTIVATION

The motivation behind the development of a more efficient irrigation system was a proactive response to a looming water crisis for California, particularly for agriculture. According to Jim Marshall, it was smarter for their operation to plan ahead, instead of waiting for a new regulation that would limit the amount of water available for their operation, without preparation for limiting their usage.

“It was just common sense that we didn’t want our water to go down the drain and not use it as efficiently as possible.”



Jim Marshall, General Manager at Suncrest Nursery
Photo credit CIRS

ACHIEVEMENTS

Redesigning their irrigation system has cut their water usage by more than half

Surface runoff and rainwater is reused for irrigation

Increased input efficiency has allowed them to expand their business



Photo credit: Jackie Pascoe

In an average year, California agriculture will use a third of available surface water- CA Ag Vision, Water Supply and Demand



Photo credit: Jackie Pascoe

WATER CONSERVATION: SUNCREST NURSERY

BEGINNINGS AND BARRIERS

Jim Marshall is very interested in water conservation, and his highest priority was addressing how water could be used more efficiently so that the nursery would be prepared for the future. With his designs of a water recovery system and computer-operated irrigation system, the nursery has reduced their water usage in half. Although the initial costs were high, the current system has reduced both water and energy use, and costs.

"It was also very obvious that we would someday be facing a water crisis because there is so much development and we are all sucking from the same straw. By doing this, we are making every effort to help our future."

Project Partners

UC Cooperative Extension,
Natural Resource
Conservation Service,
Environmental Quality
Incentives Program,
California Institute for Rural
Studies, Fall Creek
Engineering

PROJECT DETAILS

IMPLEMENTATION AND MANAGEMENT

With so many plants, efficient irrigation is essential for their operation. Suncrest has organized their operation into irrigation zones based on the plants water needs. The irrigation within these zones utilizes the profile of the land to maximize gravitational flow, and to reduce electricity costs. Surface runoff and rainwater are collected and transferred to recovery ponds. After blending it with 50 percent freshwater, the water is reused in the irrigation system. A computer-controlled irrigation delivery system, with precise irrigation scheduling and timing, allows for watering based on the plants needs. The 5 and 15-gallon container plants are watered with drip emitters, and the 1-gallon containers are irrigated with overhead sprinklers that are closely spaced with low-pressure nozzles. For the 1-gallon plants, they use capillary mats, which are multilayered mats composed of drip tapes and absorbent sponge layers in between a non-permeable bottom and top tarp with small holes, which allow for water uptake by the plants roots. The irrigation system has uses computer controlled Variable Frequency Drive pumps, which save energy and provide the ability to irrigate in a short amount of time. This way, they can irrigate all the plants in the morning so the foliage is dry at night, which reduces plant diseases. Jim Marshall has found that this new closed-system irrigation method provides for greater control over nutrient management, while nearly eliminating soil erosion and run-off. In addition to implementing water-saving practices, Suncrest Nursery tractors are run on biodiesel, and the delivery fleet runs on partial biodiesel.

FOSTERING SUCCESS

After witnessing the success of the new water management system, Jim Marshall recommends that other operations be proactive about reducing water use. The increased efficiency of the operation has not only saved resources, but has allowed Suncrest to expand its business. Suncrest serves as a great example for nurseries all around California, from their promotion of drought-tolerant varieties and the innovative water management system to their success as a business.

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