

# Development of Irrigation Runoff Self Assessments for the Greenhouse and Nursery Industry in San Diego County

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## Introduction

San Diego County has a large and thriving greenhouse and nursery industry. Although land, labor and water prices are high, the climate in San Diego makes it an ideal growing area for horticultural crops. Last year, the horticultural industry contributed approximately \$700 million dollars to \$1.3 billion dollar agricultural economy in the county.

The greenhouse and nursery industry in San Diego County and other areas of the state is dealing with increasing regulatory pressure regarding irrigation runoff, implementation of TMDL's and renewals of the Agricultural Waiver process. All of these regulatory programs require the growers to minimize or eliminate any runoff leaving their property, and entering any stream, pond, storm drain system or any other conveyance system. This situation is extremely difficult for growers, who are managing nurseries often designed many years ago with improper attention paid to runoff issues. As part of our Agricultural Water Quality Program, we developed a "Runoff and Non-point Source Pollution Self-Assessment" for the Greenhouse and Container Nurseries.

## Goal

This project was designed to assist the growers in reviewing their own properties and looking for growing practices that contribute to degradation of water quality.

After visiting horticultural producers on a regular basis and assisting them in meeting the requirements of water quality regulations, it was apparent that growers needed a fresh look at their properties and their practices. Our Self-Assessment requires that growers look at their properties and review areas and practices that they may otherwise overlook.

In addition to assisting the growers in meeting regulatory requirements, we hoped to use the Self-Assessment as an educational tool, to provide growers with information on the types of practices and activities that can lead to water quality degradation. Some traditional practices can be modified slightly and with a minimum of cost to achieve improvements in water quality and minimize runoff.

We also needed to provide the Self-Assessment to growers in a variety of formats-on our website, in hard copy, and on CD.

## Methods

The following information was utilized when developing the Greenhouse and Nursery Water Quality Self Assessment:

- Basic knowledge of water quality issues held by local greenhouse and nursery operators
- Regulatory requirements
- Inspection documents and programs-our local Agriculture, Weights and Measures/Agricultural Commissioner's office is the enforcement agency for the countywide water quality regulations. It was vitally important that the growers be aware of areas that could be problematic when they were inspected.



Typical greenhouse operation with potential for runoff. Growers would benefit from assessing their irrigation system and increasing the efficiency.

Proximity of waste piles to watersheds is a concern of regulatory personnel, due to the potential for contamination with sediment, nutrients and other plant associated materials that can be found on the plant and soil material.



## Results

As was requested by the growers, the format of the Self Assessment is very simple and requires only a yes or no answer to questions covering the multiple practices that will be subject to inspection. If the answer to a question is "no", then the area of concern may be problematic.

The Self-Assessment covers the following areas:

- Property Management
- Roads Management
- Irrigation Practices
- Leaching and Runoff
- Nutrient Assessment and Fertilizer Management
- Integrated Pest Management

The Self-Assessment is 14 pages in length, and it takes most growers approximately 30 minutes to complete.

The Self Assessment has been used by over 300 growers locally, and has been endorsed by our local Department of Agriculture, Weights and Measures It is often used by the growers in preparation for their annual water quality inspection.



Use of tensiometers assists growers in applying appropriate amounts of water, and in turn will minimize runoff due to over watering.



Making sure the irrigation system is working efficiently will avoid "orphan" emitters and minimize standing water that can cause disease and insect problems.

## For more information...

The Irrigation Runoff Self Assessment for the Greenhouse and Nursery Industry in San Diego County has also been adapted for use in a larger resource document that is currently under review in Ventura County.

We have also produced the following Self Assessments for additional agricultural activities:

- Animal Agriculture
- Tree Crops
- Field and Row Crops

Additional resources are available through our Agriculture Water Quality Program and include:

- Management Options for Greenhouse and Container Crops
- Employee Training Modules (English and Spanish) for Water Quality

## Conclusion

These resources have been widely used by local growers, and are available on our website. To view these documents, please access them at the following address:

[www.cesandiego.ucdavis.edu](http://www.cesandiego.ucdavis.edu)

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