

Water Quality Outreach Program to Nurseries in Orange County



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UC Cooperative Extension

History of Program

- Concerned citizens contact OC Coastkeeper.
- OC Coastkeeper conducts monitoring.
- OC Coastkeeper contacts Southern California Edison.
- Southern California Edison contacts UC Cooperative Extension for technical assistance.
- Outreach program planning initiated in late July.

Current Status of Outreach Program

- Developing contact list for SCE properties.
- Planning information meeting for early November.
- Developing outreach materials to provide to audience at November meeting.
- Include city or county inspectors in outreach training to assist them with high priority nurseries.

Potential Pollutants from Nurseries

- **Nutrients**
 - nitrogen, phosphorus
- **Pesticides**
 - herbicides, insecticides, fungicides, etc..
- **Sediment**
 - mobilizes some nutrients, pesticides, and pathogens
- **Pathogens**

Mitigation of Potential Pollutants from Nurseries



Irrigation Management

Potting Mix Spills



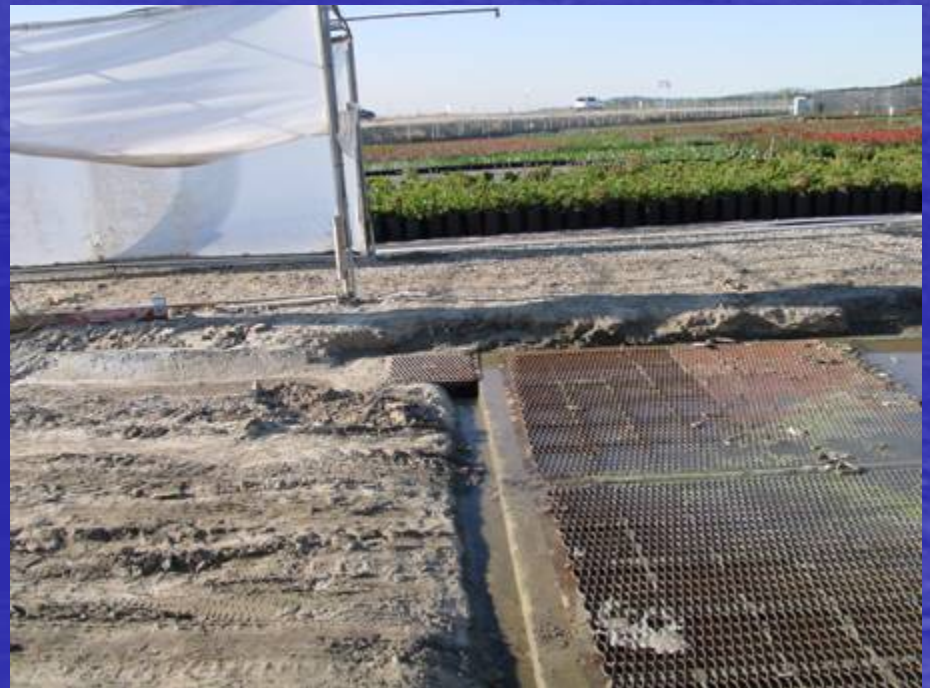
Mitigation of Potential Pollutants from Nurseries



Erosion and Sediment Management



Mitigation of Potential Pollutants from Nurseries



Polyacrylamides (PAM)

Pre-PAM Application



Post-PAM Application



Mitigation of Potential Pollutants from Nurseries



Mitigation of Potential Pollutants from Nurseries





Mitigation of Potential Pollutants from Nurseries



Small Reservoir \approx 70,000 gallons

Mitigation of Potential Pollutants from Nurseries

Examples of Tailwater Recycling Reservoirs



Mitigation of Potential Pollutants from Nurseries

Tailwater Recycling System



Mitigation of Potential Pollutants from Nurseries



Tailwater Recycling System



Successful Mitigation of Pollutants from Nurseries

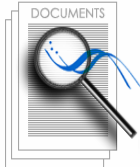
- Conduct a thorough assessment of nursery to:
 - Identify potential problem areas.
 - Identify Management Practices to address problem areas.
- Implement Management Practices.
- Conduct regular maintenance and checks to insure practices are working effectively.



Current Resources



- Introduction
- Storm Drain System
- Documents**
- Presentations
- Participating Cities
- Online Info. Service
- Resource Links



Documents

A number of documents are available on these pages that describe the regulations and programs aimed at preventing and controlling the discharge of pollutants to the municipal stormdrain system and receiving waters. Orange County lies within two different regions of the State Water Quality Control Board's jurisdiction: the Santa Ana Regional Water Quality Control Board and the San Diego Regional Water Quality Control Board.

- **California Ocean Plan**
- **Basin Plans**
- **Orange County Third Term NPDES Municipal Stormwater Permits**
- **Orange County Stormwater Program 2003 Drainage Area Management Plan**
- **Best Management Practices (New Development/Significant Redevelopment, Construction, Industrial/Commercial, Residential)**

BMPs and Related Documents: Existing Development BMPs

Industrial/Commercial

BMP #BMP Name

- IC1 Airplane Maintenance & Repair
- IC2 Animal Handling Areas
- IC3 Building Maintenance
- IC4 Carpet Cleaning
- IC5 Concrete & Asphalt Production, Application, & Cutting
- IC6 Contaminated or Erodible Surface Areas
- IC7 Landscape Maintenance
- IC8 Nurseries & Greenhouses
- IC9 Outdoor Drainage from Indoor Areas
- IC10 Outdoor Loading/Unloading of Materials

Residential

BMP #BMP Name

- R-1 Automobile Repair & Maintenance
- R-2 Automobile Washing
- R-3 Automobile Parking
- R-4 Home & Garden Care Activities
- R-5 Disposal of Pet Waste
- R-6 Disposal of Green Waste
- R-7 Household Hazardous Waste
- R-8 Water Conservation



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Agwater quality program

Grower Resources

The following documents are PDF files which can be viewed and printed using Adobe Acrobat Reader. Download it free at <http://www.adobe.com>.

Self-Assessment for Greenhouses and Nurseries

This questionnaire provides a basis for assessing the runoff and contaminant potential for greenhouse and nursery operations.

Self-Assessment for Tree Crops

This questionnaire provides a basis for assessing the runoff and contaminant potential for tree crop operations.

Animal Agriculture

This questionnaire provides a basis for assessing the runoff and contaminant potential for animal agriculture operations.

Ag Water Quality Record Keeping

This notebook system is a useful guide for documenting water quality management efforts. Water quality record keeping is required for agricultural properties that are subject to storm water compliance inspections, and is recommended for all agricultural properties.

Management Options for Nonpoint Source Pollution: Greenhouse and Container Crop Industries

This manual was developed to provide the greenhouse and nursery crop industries with the best available management options for reducing nonpoint source pollution.



DEPARTMENT OF PUBLIC WORKS



Stormwater

- About DPW
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- Commissioners
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Watershed Protection

NURSERIES & GREENHOUSES

- [On-line Stormwater Complaint Form](#)
- [Your Regulatory Requirements](#)
- [General Stormwater BMP Brochure](#)



Fertilizers and pesticides are among the many [common stormwater pollutants](#) that can degrade water quality. Stormwater runoff from nursery and greenhouse operations has been found to contain high concentrations of organic wastes, fertilizers, pesticides, and soil that can leave your property. When these

materials wash into local waters they poison fish and contaminate the water. Soil and dirt washed from the grounds can also harm aquatic life by clogging the gills of fish, blocking light transmission, lowering water temperatures, and inhibiting photosynthesis.

▶ What can I do?

Use Best Management Practices (BMPs)!

BMPs are techniques or controls used to prevent or reduce the discharge of pollutants, such as fertilizers and pesticides, into the stormwater conveyance system also known as the storm drain system. Also consider [Integrated Pest Management](#) control.

Stormwater Documents:

- [Agriculture / Weights & Measures](#)
- [Agriculture Water Quality Program](#)
- [Wastewater Agencies](#)
- [CASQA BMP Handbooks](#)

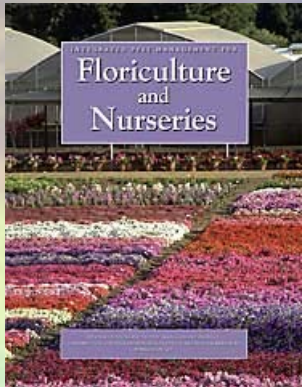
▶ Information:

-  Avoid over watering after fertilizer application.
-  Use less-toxic alternatives.

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If you have questions or would like additional information, call the County Stormwater hotline at **1(888) 916 0800** or email us at watersheds@edcounty.ca.gov

UC Publications



- **IPM for Floriculture and Nurseries**
- **Nutrient Management Goals and Management Practices for Nursery and Floriculture**
 - <http://anrcatalog.ucdavis.edu/InOrder/Shop/ItemDetails.asp?ItemNo=8122>
- **Sediment Management Goals and Management Practices for Nursery and Floriculture**
 - <http://anrcatalog.ucdavis.edu/InOrder/Shop/ItemDetails.asp?ItemNo=8124>