

Bay-Friendly Landscaping is

a holistic approach to landscaping that works in harmony with the natural conditions of the San Francisco Bay Watershed.

Bay-Friendly practices foster soil health, and conserve water and other valuable resources while reducing waste and preventing pollution.

Bay-Friendly Landscaping is sustainable landscaping.



GET RECOGNIZED

The Bay-Friendly Landscaping Program will recognize all qualified landscape professionals who meet a standard for knowledge about Bay-Friendly principles and maintenance practices by:

- **Listing your name** on several popular websites, in a special supplement to the AT&T telephone directory, and in an environmental calendar that is distributed to 15,000 households in Marin.
- **Distributing a printed list** of qualified individuals to municipal staff in Marin's 11 cities/towns and unincorporated area.
- **Providing a certificate of qualification** and embroidered emblem with the Bay-Friendly Landscaping logo.
- **Helping you identify yourself** as a Bay-Friendly Qualified Landscape Professional by providing a personalized graphic for your own use.

"It's a good program that unifies a lot of concepts clearly – and it's a good way to meet people trying to do the same as you."

— Andrew Packer, Acorn Landscaping, Inc.

WHO SHOULD ATTEND

Public and private sector landscape professionals who design, construct or manage:

- Commercial landscapes
- Residential landscapes & gardens
- Municipal landscapes
- Schools, parks & recreational amenities

REQUIREMENTS FOR PARTICIPATION

- 1) Clients in Marin County
- 2) 1 year full time experience in the landscape industry OR completion of a 2 year curriculum in landscape horticulture

Training and qualification is for individuals, not companies (though company affiliation will be noted in promotional efforts).

SCHEDULE & REQUIREMENTS FOR QUALIFICATION

To be qualified as a Bay-Friendly Landscaper and receive a certificate of course completion, you will be required to attend all classes and pass a final exam. Classes will meet once a week for 7 weeks: Wednesdays from February 2 – March 16 from 3:30 p.m. to 7 p.m. (The certificate must be renewed in 2 years.)

WORKSHOP COST \$100 for Bay-Friendly Coalition members or \$125 for non-members. To become a member, go to www.BayFriendlyCoalition.org. Price is per person for 7 week course. (Low fee courtesy of sponsors.)

Bay-Friendly Landscape

Maintenance Training & Qualification Program

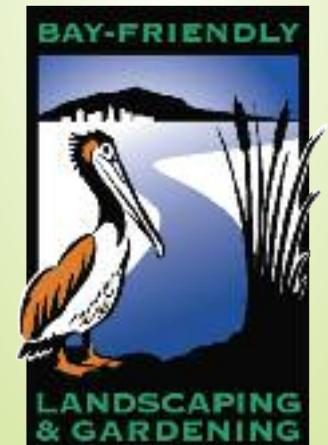
For the Professional Landscape Community

Offered in Marin County

February 2 - March 16, 2011

Continuing education units are pending from DPR, IA, and ISA.

Series endorsed by the North Coast Chapter of CLCA.



“Bay-Friendly” landscaping is an increasingly popular approach to the design, construction and maintenance of landscapes in both the public and private sectors. With this increased interest has come an increased need for professionals trained in environmentally friendly practices. After completing this series, you will be recognized as a “Bay-Friendly Landscaper”, and be promoted as such, by local public agencies.

SPONSORED BY

- Marin County Stormwater Pollution Prevention Program (MCSTOPPP)
- Marin Municipal Water District
- Marin Art and Garden Center



This fast-moving program includes professional speakers and hands-on demonstrations for experienced public and private landscape professionals who design, construct and/or manage landscapes in Marin County.

WHAT YOU’LL LEARN:

Become a recognized expert in Bay-Friendly Landscaping and gain a competitive advantage! Expand your business to offer cutting-edge sustainable maintenance practices. Network with peers. Learn to:

- Enhance soil biology to feed plants naturally
- Sheet mulch to reduce weeds, waste and water use
- Conserve water, minimize runoff and prevent pollution
- Communicate these innovative services to your clients
- Stay in compliance with local and State laws



COURSE TOPICS INCLUDE:

- Analyzing the job site
- Where, when and how to sample soil
- Weeds as indicators of soil quality
- Air quality and energy conservation
- Creating drought tolerant soils
- Irrigation techniques including use of smart controllers
- Integrated Pest Management (IPM)
- Innovations in non-toxic weed control
- Using mulch to stop runaway soil
- Choosing appropriate plants for different settings
- Attracting beneficial birds, bees and other organisms
- Low impact development strategies including swales, rain gardens and permeable pavement
- Connecting with local resources

All public events sponsored or conducted by the County of Marin are held in accessible sites. Requests for accommodations may be directed to (415) 473-4381 (voice) or (415) 473-3232 (TTY) at least **four work days** in advance. Copies of documents are available in alternative formats, upon written request.

Bay-Friendly Landscaping and Gardening is a trademark and servicemark owned by StopWaste.Org. Regional Bay-Friendly programming is made possible through the Bay-Friendly Landscaping and Gardening Regional Coalition. Find out more at www.BayFriendlyCoalition.org.



REGISTRATION INFORMATION

Please complete a registration form for EACH person attending. Cost is \$100 for Bay-Friendly Coalition members or \$125 for non-members. To become a member, go to www.BayFriendlyCoalition.org. Make check payable to County of Marin and reference “Bay-Friendly Series” on your check. Mail check and registration to:

Gina Purin, MCSTOPPP, P.O. Box 4186, San Rafael CA 94913-4186
Questions? Call (415) 499-3202 or email gpurin@co.marin.ca.us

Name _____ Business _____

Address _____ City/Zip _____

Telephone _____ Website (if applicable) _____

E-Mail _____

**Bay-Friendly Landscape Maintenance Training &
Qualification Program**

TABLE OF CONTENTS

February 2, 2011

CLASS 1: Overview of Bay-Friendly Practices and the Soil Foodweb

- Agenda
- Practice Questions for Class 1 (yellow sheet)
- Support Materials for Class 1
 - *Bay Friendly Landscape Guidelines* (Blue Book – use for all classes)
 - Excerpt from *Soil Biology Primer*
 - Soil Matters

February 9, 2011

CLASS 2: Soil Care and Plant Nutrition

- Preparing for Class 2 (green sheet)
- Agenda
- Practice Questions for Class 2 (yellow sheet)
- Support Materials for Class 2
 - Assessing Soil Samples
 - How's Your Soil Texture
 - Soil and Nutrition Management: Determining Square Footage
 - *A Bay-Friendly Landscaping Guide to Mulch*

February 16, 2011

CLASS 3: Water Management

- Preparing for Class 3 (green sheet)
- Agenda
- Practice Questions for Class 3 (yellow sheet)
- Support Materials for Class 3
 - Low Impact Development: A Sensible Approach to Land Development and Stormwater Management
 - Model Water Efficient Landscape Ordinance
 - Water Use Efficiency Ideas for Golf Courses, Parks and Commercial Landscapes
 - Lawn Watering Guide for California
 - Comparison of Smart Controllers
 - OWOW Fact Sheet: Pesticides and Water Pollution

February 23, 2011

CLASS 4: Waste Management

- Preparing for Class 4 (green sheet)
- Agenda
- Practice Questions for Class 4 (yellow sheet)
- Support Materials for Class 4
 - Seal of Testing Assurance
 - OWOW Fact Sheet: Use and Disposal of Pesticides
 - A Bay-Friendly Landscaping Guide to Recycled-Content and Salvaged Materials
 - Growing Gardens from Garbage (*found in binder pocket*)

March 2, 2011

CLASS 5: Landscaping Locally: Plant Choices

- Preparing for Class 5 (green sheet)
- Agenda
- Practice Questions for Class 5 (yellow sheet)
- Support Materials for Class 5
 - MMWD Recommended Water Wise Plant List
 - Gardening Near Native Oak Trees (Mostly Natives Nursery)
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 - Selected Native Plants of the Bay Area by Plant Community
 - Restoring Backyard Habitat in Marin and Sonoma Counties
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 - OWOW Fact Sheet: Tips For a Healthy, Beautiful Lawn
 - Environmental Effects for 30 Commonly Used Lawn Pesticides
 - Sustainable Turf Management
 - IPM for Turfgrass Insect Pests (BIRC)
 - A Bay-Friendly Landscapers Guide to Grasscycling
 - Go Native! (Includes riparian plant list) (*found in binder pocket*)

March 9, 2011

CLASS 6: Integrated Pest Management

- Preparing for Class 6 (green sheet)
- Agenda
- Practice Questions for Class 6 (yellow sheet)
- Support Materials for Class 6
 - IPM Decision-Making Process
 - Don't Plant a Pest: Suggested Alternatives for Invasive Garden Plants of the Greater SF Bay Area (*found in binder pocket*)
 - Don't Plant a Pest: Suggested Alternatives for Invasive Trees in California (*found in binder pocket*)
 - PlantRight: Invasive Plants of the North and Central Coast
 - OWOW Fact Sheets (Growing Healthy Gardens, Ants, Aphids, Roses, Snails/Slugs, Spiders, Weeds, Yellowjackets, Mosquitoes)
 - OWOW Store Partners
 - OWOW Product List By Pests
 - 10 Most Wanted Bugs in Your Garden (*found in binder pocket*)

March 16, 2011

CLASS 7: Air Quality & Energy Conservation

Gardening for Wildlife

Site Assessment & Analysis

FINAL EXAM

- Preparing for Class 7 (green sheet)
- Agenda
- Practice Questions for Class 7 (yellow sheet)
- Support Materials for Class 7
 - Site Analysis for Maintaining Bay-Friendly Landscapes form
 - Gardening For Wildlife with Native Plants
 - How to Choose a Landscape Professional (*found in binder pocket*)
 - Landscaping to Save Energy

APPENDIX

- **Glossary: Definition of Terms**
- **Resources (Delivered to you through e-mail – if you need a hard copy, just ask)**

2011 Marin County Bay-Friendly Landscape Maintenance Training and Qualification Program

For more information:
MCSTOPPP (415) 499-6528

AGENDA

Class 1: February 2, 2011

Overview of Bay-Friendly Landscaping (BFL) and the Training Program The Soil Foodweb

3:30 – 4:00 **Welcome and Introductions**

4:00 – 5:00 **Intro to Bay-Friendly Landscaping**

- Making the connection: watersheds, pollution and Bay-Friendly practices
- History of Bay-Friendly Landscaping, definition & 7 principles
- How BFL differs from conventional landscaping
- Landscaping “locally”
- Connections to LID, LEED & Green Building

Description of Training and Qualification Program

- Class outline, assignments, handouts, and requirements for qualification

5:00 – 5:15 **BREAK/Dialogue with Speakers**

5:15 – 6:45 **The Soil Foodweb**

- Role of healthy soil in the landscape
- The soil foodweb and landscaping practices
- Basics of compost tea

6:45 – 7:00 **Wrap-up & Prep for Class 2**



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Practice Questions from Class 1

1. List the 7 principles of Bay-Friendly Landscaping:

2. What does it mean to 'landscape locally'?

3. Why is the San Francisco Bay Area considered a Mediterranean climate? What are the implications of this for landscaping in this region?

4. What is a soil foodweb?

5. Why is it important to feed the soil rather than the plant?

6. How do you feed the soil microorganisms?

7. In addition to adding organic matter, how can you promote a healthy soil foodweb?

8. What landscaping practices can kill soil microorganisms?

Resources to help you answer the practice questions:

Bay-Friendly Landscape Guidelines

- pp. 2 - 6, Intro to BFL
- pp. 10 - 11, BFL Best Practices

Excerpt from *Soil Biology Primer*

“Soil Matters,” *Bay Nature Magazine*

9. A healthy soil with a diverse foodweb can:
- improve soil structure
 - help plants resist disease
 - supply nutrients to plants
 - filter pollutants out of water
 - all of the above
10. Compost tea is:
- a beverage consumed when maintaining a client's home-composting system
 - the excess water drained off from vegetables rotting in a worm bin
 - a liquid extract of mature compost
 - b and c above
 - none of the above
11. Compost tea is best used soon – within hours and no later than 1 day – after it is produced.
TRUE or FALSE

Preparing for Class 2

Read:

1. *Bay-Friendly Landscape Guidelines*
 - pp. 27-33, Nurture the Soil

To Discuss in Class:

1. Observe one mulched site and one similar site with bare soil – is there a noticeable difference in plant health, erosion or water retention on that site?
OR
2. Bring in a sample of some mulch that you use and would like to assess.

For More Information: (optional)

- Assessing Soil Samples
- How's Your Soil Texture
- Soil and Nutrition Management: Determining Square Footage
- *A Bay-Friendly Landscaping Guide to Mulch*



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AGENDA

Class 2: February 9, 2011

Soil Care and Plant Nutrition Mulch as a Bay-Friendly Practice

3:30 – 3:45 **Welcome/Review of Practice Questions**

3:45 – 5:00 **Keeping Plant Debris on Site: Mulch in the Landscape**

- Evaluating and choosing mulch
- Choosing mulch for problem sites
- Other ways to reduce green waste
- Sheet mulch demonstration

5:00 – 5:15 **BREAK/Dialogue with Speakers**

5:15 – 6:45 **Soil Basics and Biology**

- Soil characteristics: determining and understanding soil structure/texture and soil types
- Synthetic vs. organic soil amendments and fertilizers and their impact on soil health
- Protecting soil: erosion control, reducing compaction, hillside soils, impacts of removing vegetation
- Soil sampling: how to collect soil samples, where to have them tested, how to read and analyze soil sample test results.

6:45 – 7:00 **Prep for Class 3**



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Practice Questions from Class 2

1. List at least 2 limitations of urban soils:
2. What is the value of adding organic matter to the soil?
3. How does healthy, living soil help to prevent water pollution?
4. What are three ways to evaluate your soil?
5. What is the difference between soil structure and soil texture?
6. *Sand, silt, and clay* describe:
 - b. soil structure
 - c. soil texture
 - d. the way soil particles are arranged into aggregates
12. What are two ways to determine soil texture?
13. How long does it take to transition to a soil that has been intensively treated with pesticides and inorganic fertilizers to a living, Bay-Friendly soil? Why?

Resources to help you answer these questions

Bay-Friendly Landscape Guidelines

- pp. 27 – 33, Nurture the Soil

Assessing Soil Samples

How's Your Soil Texture

Soil and Nutrition Management:

Determining Square Footage

A Bay Friendly Landscaping Guide to Mulch

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14. What is the difference between synthetic and organic fertilizers or soil amendments?

15. What are the problems associated with synthetic, quick-release, high-nitrogen fertilizers, as well as with over-fertilizing in general?

16. What is mulching and why is it an important aspect of “landscaping for less to the landfill?”

17. What are the disadvantages of using rock as a mulch?

18. List the 5 steps to sheet mulching:

19. What are the benefits of taking a soil sample and sending it to a lab for analysis?

20. What should you request from a soil lab?

21. What does a site regularly infested with clover tell you about the soil?

Preparing for Class 3

Read:

1. *Bay-Friendly Landscape Guidelines*
 - pp. 34 - 37, Conserve Water

To Discuss in Class:

1. Write out one way you've modified an existing site to reduce water use.
OR
2. Conduct a "catch-can" test at one of the irrigated landscape sites that you manage (see instructions in "The Lawn Watering Guide for California").

For More Information: (optional)

- Low-Impact Development: A Sensible Approach to Land Development and Stormwater Management
- Model Water Efficient Landscape Ordinance
- Water Use Efficiency Ideas for Golf Courses, Parks and Commercial Landscapes
- Lawn Watering Guide for California
- Comparison of Irrigation Controllers
- OWOW Fact Sheet: Pesticides and Water Pollution



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AGENDA

Class 3: February 16, 2011 **Water Management**

3:30 – 3:45 **Welcome/Review of Practice Questions**

3:45 – 4:30 **Water Conservation Overview**

- Water conservation ordinances that impact landscapers
- Tools for calculating a water budget: hydrozoning, WUCOLS, WELO
- Tips for calculating water budgets
- Application rates & distribution uniformity
- Reading a water meter
- MMWD rebate programs

4:30 – 5:30 **Designing and Maintaining Efficient Irrigation Systems**

- Managing irrigation according to need (weather, soil, plant type, microclimate)
- Choosing irrigation methods and materials
- Choosing a smart controller
- Tools for high efficiency irrigation systems (smart controllers, drip, low flow, soil sensors etc.)
- Resources from local water agencies

5:30 – 5:45 **BREAK/Dialogue with Speakers**

5:45 – 6:00 **Stormwater Ordinance**

- Stormwater ordinances and implications for landscapers

6:00 – 6:55 **Techniques for Intercepting & Managing Stormwater**

- Managing runoff – innovative practices for containing water on site (bioswales, bio-retention & filtration, rain gardens, pervious surfaces)
- Maintaining Stormwater BMP's

6:55– 7:00 **Prep for Class 4**



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Practice Questions from Class 3

1. List at least 3 features that are important in selecting an appropriate smart irrigation controller.
2. How is irrigation efficiency defined and determined in the field?
3. What do you need to know about the soil to irrigate efficiently?
4. How can you monitor soil moisture content?
5. How can you create drought-resistant soil?
6. What does DU stand for?
7. A field test to determine uniformity of distribution, as well as how much water an irrigation system is delivering is known as a _____ test.
8. What does CIMIS stand for?
9. What is Eto? (Please define reference evapotranspiration)

Resources to help you answer these questions

Bay-Friendly Landscape Guidelines

- pp. 34 - 37, Conserve Water
- p. 41, Protect Water Quality

Low Impact Development: A Sensible Approach to Land Development and Stormwater Management

Model Water Efficiency Landscape Ordinance

“Water Use Efficiency Ideas for Golf Courses, Parks and Commercial Landscapes”

Lawn Watering Guide for California

Comparison of Smart Controllers

OWOW Fact Sheet: Pesticides & Water Pollution

Preparing for Class 4

Read:

1. *Bay-Friendly Landscape Guidelines*
 - pp. 20 - 26, Landscaping for Less to the Landfill

To Discuss in Class:

1. What are some of the ways you keep plant debris on site?
2. How do you incorporate recycled/salvaged materials into your landscapes? What are the pros and cons of the materials you have used?
3. Evaluate a compost sample (bagged, bulk or homemade) for its color, smell, moisture content and particle size; bring a small sample (sandwich sized baggie) for sharing with the class

For More Information: (optional)

- Seal of Testing Assurance
- OWOW Fact Sheet: Use and Disposal of Pesticides
- *A Bay-Friendly Landscaping Guide to Recycled-Content and Salvaged Materials*
- *Growing Gardens from Garbage: A Guide to Composting, Mulching and Grasscycling*



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AGENDA
NEW LOCATION:
Marin Sanitary, Environmental Classroom,
565 Jacoby Street, San Rafael

Class 4: February 23, 2011
Waste Management

- 2:30 – 3:30 **Take the Museum Bus on a Behind the Scenes Tour of the Recycling/Resource Recovery Facility (Optional)**
- 3:30 – 3:45 **Welcome/Review of Practice Questions**
- 3:45 – 4:30 **Waste as a Valuable Resource**
- Waste as a source of organic matter
 - Reducing and disposing of green waste
 - Disposal of pesticides and other chemicals
- 4:30 – 5:00 **Using Recycled & Salvaged Materials**
- Reducing embodied energy: keeping & reusing materials on site
 - Resources for locating or donating materials
- 5:00 – 5:15 **BREAK/Dialogue with Speakers**
- 5:15 – 6:15 **Reducing Green Waste: Composting**
- Composting basics
 - Keeping materials on site
 - Determining compost quality for purchase
 - Setting up/maintaining compost systems for clients
 - Finding bins and resources
- 6:15 – 6:55 **Putting BFL Practices into Action: Case Study**
- 6:55 – 7:00 **Prep for Class 5**



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Practice Questions from Class 4

1. Briefly explain how appropriate plant selection is related to “landscaping for less to the landfill.”

2. What is composting and why is it an important aspect of “landscaping for less to the landfill?”

3. What is the difference between compost and mulch?

4. Which of the following are important specifications of high-quality compost:

- a. C:N ratio is 25:1 or less
- b. dark brown color
- c. uniform particle size
- d. feedstock is no longer recognizable
- e. all of the above

5. STA is an assurance that compost is organic.
TRUE or FALSE

6. List at least 2 negative consequences of shearing:

Resources to help you answer these questions

Bay-Friendly Landscape Guidelines

- pp. 20 - 26, Landscape for Less to the Landfill

Seal of Testing Assurance

OWOW Fact Sheet: Use and Disposal of Pesticides

A Bay-Friendly Landscaping Guide to Recycled Content and Salvaged Materials

Growing Gardens From Garbage: A Guide to Composting, Mulching and Grasscycling

Preparing for Class 5

Read:

1. *Bay-Friendly Landscape Guidelines*
 - pp. 12 – 19, Landscape Locally

To Discuss in Class:

1. What are some native plants you have had success with on the sites you manage?
2. How do you currently manage turf, and what changes can you make to reflect a Bay-Friendly landscaping approach?

For More Information, Read: (optional)

- MMWD Recommended Water Wise Plant List
- Gardening Near Native Oak Trees (Mostly Natives Nursery)
- Sudden Oak Death
- Selected Native Plants of the Bay Area by Plant Community
- Restoring Backyard Habitat in Marin and Sonoma Counties
- Pet-Friendly Gardening
- OWOW Fact Sheet: Tips For a Healthy, Beautiful Lawn
- Environmental Effects for 30 Commonly Used Lawn Pesticides
- Sustainable Turf Management
- IPM for Turfgrass Insect Pests (BIRC)
- *A Bay-Friendly Landscaping Guide to Grasscycling*
- *Go Native!* (Includes riparian plant list)



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AGENDA

Class 5: March 2, 2011

Landscaping Locally: Plant Choices

- 3:30 – 3:45 **Welcome/Review of Practice Questions**
- 3:45 – 4:45 **Overview of Plant Choices for a Mediterranean Garden**
- Importance of right plant, right place: matching plant and landscape requirements and understanding climate zones
 - Choosing and caring for native, Mediterranean and water-wise plants
 - Landscaping challenges: deer, coastal/wind areas
 - Avoiding invasive landscape plants
- 4:45 – 5:30 **Caring for Oaks in the Landscape**
- Keeping oaks healthy: watering and cultivation tips
 - Planting around and under oaks
 - Pests and diseases of oaks/updates on Sudden Oak Death
- 5:30 – 5:45 **BREAK/Dialogue with Speakers**
- 5:45 – 6:45 **Lawn Care Strategies**
- Bay-Friendly practices and turf management
 - Turf alternatives
 - Grasscycling and turf health
- 6:45 – 7:00 **Prep for Class 6**



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Practice Questions from Class 5

1. In addition to reducing plant debris, what is an additional benefit of right plant, right place?
2. List at least 2 California native plants that provide food for beneficial insects:
3. Why are California native plants critical to creating wildlife habitat?
4. California native plants are drought conserving:
TRUE or FALSE
5. California native plants will always do better when panted from one gallon pots over plugs, 2 inch or 4 inch pots:
TRUE or FALSE
6. List two resources that can provide you with information on local native plant species:

Resources to help you answer these questions

Bay-Friendly Landscape Guidelines

- pp. 12 – 19, Landscape Locally

MMWD Recommended Water Wise Plant List

Gardening Near Native Oak Trees/Sudden Oak Death

Selected Plants of the Bay Area by Plant Community

Restoring Backyard Habitat in Marin & Sonoma Counties

OWOW Fact Sheet: Tips for a Healthy, Beautiful Lawn

Environmental Effects for 30 Commonly Used Lawn Pesticides

Sustainable Turf Management

IPM for Turfgrass Insect Pests (BIRC)

A Bay-Friendly Landscaping Guide to Grasscycling

Go Native!

7. It is never a good idea to amend soils with compost when planting California native species.
TRUE or FALSE

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8. What is grasscycling and why is it an important aspect of “landscaping for less to the landfill?”

9. What question would you ask yourself when trying to control a turf fungal infection?

10. What would you do differently when removing turf in a Bay-Friendly manner for one of your Clients?

Preparing for Class 6

Read:

Bay-Friendly Landscape Guidelines

- pp. 42 - 48, Integrated Pest Management

To Discuss in Class:

1. Think about one pest problem you have dealt with on a site you maintain, and be prepared to discuss how you managed the problem and what the results were.
2. In managing your landscapes, what weed(s) cause the most problems and how do you control/manage them?

For More Information: (optional)

- IPM Decision-Making Process
- Don't Plant a Pest: Suggested Alternatives for Invasive Garden Plants of the Greater SF Bay Area
- Don't Plant a Pest: Suggested Alternatives for Invasive Trees in California
- PlantRight: Invasive Plants of the North and Central Coast
- OWOW Fact Sheets (Growing Healthy Gardens, Ants, Aphids, Roses, Snails/Slugs, Spiders, Weeds, Yellowjackets, Mosquitoes)
- OWOW Store Partners
- OWOW Product List by Pest
- 10 Most Wanted Bugs in Your Garden



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AGENDA

Class 6: March 9, 2011 **Integrated Pest Management**

3:30 – 3:45 **Welcome/Review of Practice Questions**

3:45 – 5:00 **Overview of Integrated Pest Management (IPM)**

- Basic IPM Techniques
 - Prevention
 - Identification and Monitoring
 - Methods of control: cultural, physical, biological, chemical
 - IPM strategies for common landscape pests
- Weed Management
 - Introduction to common local weeds
 - Managing weeds using IPM
 - Assessing weed control tools and products
 - New weed control methods: hydromechanical, flamers, foam, etc.

5:00 – 5:15 **BREAK/Dialogue with Speakers**

5:15 – 6:15 **IPM Strategies for Pests/Choosing Products**

- Understanding product labels
- Design strategies for managing specific pests
- Identifying and locating least toxic products available
- Emerging Issues (pyrethroids, etc.)

6:15 – 6:45 **Role of Beneficial Insects**

- Identification of pests and beneficials
- Attracting beneficials to gardens

6:45 – 7:00 **Prep for Class 7**



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Practice Questions from Class 6

1. List 5 benefits of IPM.
2. How does IPM differ from organic landscape management?
3. List 5 practices for preventing pest infestations:
4. What role do California native plant species play in an integrated pest management approach to controlling aphids?
5. Why should timed, calendar-based sprays and weed and feed be avoided? (In other words, why is it better to use fertilizers and sprays based on need?)
6. A Bay-Friendly landscaper considers which of the following when selecting a pesticide:
 - a. potential harm to humans
 - b. potential harm to other organisms
 - c. potential for polluting the environment
 - d. mobility of the pesticide
 - e. target specificity
 - f. rate of breakdown
 - g. all of the above

Resources to help you answer these questions

Bay-Friendly Landscape Guidelines

- pp. 42-48, Integrated Pest management

IPM Decision Making Process

California Invasive Plant Council brochures "Don't Plant a Pest"

Plant Right

Our Water Our World (OWOW) Pest Fact Sheets

OWOW Store Partners

OWOW Product List

10 Most Wanted Bugs in Your Garden

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7. How does organic matter in soil increase a plant's ability to resist disease?
8. What are the practices that a Bay-Friendly landscaper employs when using pesticides near hardscapes? Why?
9. All naturally occurring pesticides are non-toxic.
TRUE or FALSE
10. Why are broad-spectrum pesticides best avoided when using an IPM approach to controlling pests?
11. What is Bt? Is it a biological or cultural control? Why?
12. Where can you get more information on specific pest problems?
13. Select an invasive weed and briefly describe 3 least-toxic methods for control, including time of year the control would be most effective:
14. How would you dispose of pesticide and fertilizer products that you no longer want?
15. Which of the following are considered highly invasive weeds in the San Francisco Bay Area?
 - a. Cortaderia selloana
 - b. Hedera helix
 - c. Vinca major
 - d. a and b
 - e. a, b, and c

Preparing for Class 7

Read:

Bay-Friendly Landscape Guidelines

- pp. 38- 40, Conserve Energy
- p. 7, The Link Between Bay-Friendly and Global Warming
- p. 41, Air Quality
- pp. 49 – 51, Create and Protect Wildlife Habitat
- pp. 60 - 65, How to Start Landscaping in a Bay-Friendly Way

To Discuss in Class:

1. Observe the way the trees are used on one of the sites you manage - how do they help (or not help) to conserve energy (shade house or parking, provide a wind break, deciduous to let sunlight through in winter, etc.)?
2. What are some ways that you might be able to maximize your ability to conserve energy and reduce emissions at the sites you manage? (Upgrade equipment, tune-up equipment, recycle plant debris instead of hauling, have employees carpool, use hand-powered equipment, etc.)
3. Choose one of the sites you manage – how does it provide (or doesn't provide) the wildlife habitat basics of food, water, shelter and nesting space?

For More Information: (optional)

- Site Analysis for Maintaining Bay-Friendly Landscapes form
- How to Choose a Landscape Professional (for distribution to your clients)
- Gardening for Wildlife with Native Plants, *Bay Nature Magazine*



2011 Marin County Bay-Friendly Landscape Maintenance Training and Qualification Program

For more information:
MCSTOPPP (415) 499-6528

AGENDA

Class 7: March 16, 2011

Air Quality & Energy Conservation Gardening for Wildlife Site Assessment & Analysis Final Exam

- 3:30 – 3:45 **Welcome/Review of Practice Questions**
- 3:45 – 4:00 **Connecting with the Green Business Program**
- 4:00 – 4:15 **Air Quality & Energy Conservation**
- Use of landscaping equipment: gas vs. electric blowers, etc.
 - Proper maintenance of equipment
 - Organizing your routes to minimize fuel consumption
 - Choosing trees/shrubs that provide shade, remove carbon dioxide and absorb air pollutants
 - Role of Bay-Friendly Landscaping in reducing greenhouse gas emissions
- 4:15 – 4:45 **Basics of Gardening for Wildlife**
- Environmental benefits of wildlife habitat
 - Incorporating basic wildlife needs into the landscape
 - Planting and maintaining wildlife habitat
- 4:45 – 5:00 **BREAK/Dialogue with Speakers**
- 5:00 - 5:45 **Using the BFL Site Analysis Tool**
- Analyzing conditions and features of landscape sites
 - Developing a Bay-friendly landscape plan
- 5:45 – ? **QUALIFICATION EXAM**



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Practice Questions from Class 7

1. How does Bay-Friendly landscaping help prevent air pollution?
2. What is the single largest pollutant in local waterways, and how can you prevent it?
3. List at least two ways that you, as a Bay-Friendly landscaper, can reduce greenhouse gas emissions:
4. If using gas powered equipment:
 - a. use the newest model-year
 - b. use 4 stroke when possible
 - c. be careful filling gas tanks
 - d. all of the above
5. Two hours on a weed whip pollutes more than a thousand miles of driving.
TRUE or FALSE
6. List at least 5 of the important characteristics that you need to know about a site in order to maintain the landscape in a Bay-Friendly manner?

Resources to help you answer these questions

Bay-Friendly Landscape Guidelines

- pp. 38 - 40, Conserve Energy
- pp. 49 - 51, Create & Protect Wildlife Habitat
- pp. 61 - 65, How to Start Landscaping in a Bay-Friendly Way

“Site Analysis for Maintaining Bay-Friendly Landscapes”

“Gardening for Wildlife with Native Plants” *Bay Nature Magazine*

How to Choose a Landscape Professional

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7. Why is diversity in the landscape important?

8. Describe a diverse landscape (what are the features?)

9. Describe how you can encourage wildlife such as birds, bees and beneficial insects.

APPENDIX

- **Glossary: Definition of Terms**
- **Resources by Chapter** (Will be sent through e-mail unless a hard copy is requested)



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GLOSSARY

Antagonists - organisms that release toxins, or otherwise change conditions, so that activity or growth of other organisms (especially pests) is reduced.

Available Water - the water in soil that is available to plants.

Bay-Friendly Landscaping (BFL) - a whole systems approach to the design, construction, and maintenance of the landscape to support the integrity of one of California's most magnificent ecosystems, the San Francisco Bay.

Best Management Practices (BMP's) – strategies for preventing, controlling, removing or reducing pollution such as bioretention areas, bioswales, and infiltration planters.

Biodiesel - a diesel-equivalent, processed fuel derived from biological sources (such as vegetable oils), which can be used in *unmodified* vehicles with diesel engines.

Biological Control - the use of living organisms, such as predators, parasitoids, and pathogens, to control pest insects, weeds, or diseases.

Biopesticides - naturally-occurring substances that control pests (biochemical pesticides), microorganisms that control pests (microbial pesticides), and pesticidal substances produced by plants containing added genetic material (also known as Plant-Incorporated Protectants, or PIPs).

Bioretention Cells – depressions that contains soil amendments that promote infiltration of stormwater.

Bioswale - a landscape element designed to remove silt and pollution from surface runoff water.

CIMIS – California Irrigation Management Information System. A program of the California Dept. of Water Resources, CIMIS is a network of automated weather stations that provides information for estimating crop water use for irrigation scheduling.

“Clean Greens” - plant debris that is kept free of trash, rocks, plastic and other materials, including painted and treated wood, so that it can be composted.

Compost – the product of controlled biological decomposition of organic materials, including yard debris and food waste. It is an organic, nutrient-rich soil amendment that can help improve the chemical, physical and biological characteristics of soils.

Compost Blanket - a one- to four-inch surface application of compost used to protect bare soil surfaces from raindrop impact, prevent or reduce sediment loss, reduce surface water runoff, and promote seed growth for establishment of ground cover.

Compost Tea - a liquid extract of mature compost, applied as a foliar spray or directly to soil for fertilization. Worm castings are often used for compost tea to provide the highest levels of microorganisms.

Composting - the controlled biological process of decomposition and the recycling of organic material into a humus-rich, beneficial soil amendment known as compost. The process generates heat, which can kill disease-causing organisms and weed seeds, and stabilizes the organic matter. Composting produces *compost*, which is the product resulting from the controlled biological decomposition of organic material.

Dark Sky Certified – landscape lighting that has been certified by the International Dark-Sky Association, a third party that certifies lighting that minimizes glare, reduces light trespass and does not pollute the night sky. (<http://www.darksky.org>)

Detention Basin – constructed basins with drainage outlets that are designed to retain runoff from a storm for some minimum time to allow settling of sediment and pollutants.

Distribution Uniformity (DU) - a measure of how uniformly water is applied to the area being watered, expressed as a percentage.

Drought Resistant Soils – a soil that reduces the need for irrigation and that can withstand severity of drought or periods without rain. High aggregation, abundant surface residue, and a biologically active soil are keys to drought-proofing a soil.

Ecosystem Services – the essential goods and services that healthy ecosystems provide to humans and other living organisms including food, nutrient cycling, pollination, air and water purification, waste decomposition, climate regulation, habitat functions and watershed services.

Embodied Energy- the energy that is used during the entire life cycle of the commodity for manufacturing, transporting and disposing of the commodity, as well as the inherent energy captured within the product itself. (LEED New Construction Reference Guide)

Erosion - the displacement of soil, mud, rock and other particles by the agents of wind, water or ice, by downward or down-slope movement in response to gravity.

ETWU – the estimated total water use of a landscape, used to calculate water budgets.

Evapotranspiration (ET_o) - the loss of water to the atmosphere by the combined processes of evaporation (from soil and plant surfaces) and transpiration (from plant tissues). It is an indicator of how much water is needed by crops, lawn, garden, and trees for healthy growth and productivity.

Exotic - A non-native species that does not threaten wildlands, often introduced by humans for agricultural and garden use.

Fertilizer - compounds given to plants to promote growth; usually applied either via the soil, for uptake by plant roots, or by foliar feeding, for uptake through leaves. Can be organic (composed of organic matter) or inorganic (containing simple, inorganic chemicals).

Field Capacity - the amount of water a soil can hold after excess water has drained away.

FSC Certified Wood – sustainable harvested lumber that is certified in accordance with the Forest Stewardship Council's criteria.

Grasscycling – leaving the clippings on the lawn after mowing so that they decompose and release nutrients back into the soil.

Grassy Swale – vegetated channels that slow stormwater runoff and promote infiltration, traps sediment, and helps treat pollutants.

Graywater – waste water from sinks, showers, bathtubs and washing machines that is not contaminated by human waste; can be used for subsurface irrigation of trees and shrubs.

Green Building – an environmentally sound and sensitive approach to building and site development that uses the 4 'R's': Reduce, Reuse, Recycle, Rebuy. Sustainable landscaping is required for green building certification.

Green Business – are certified for complying with environmental regulations and taking extra steps to conserve energy and water, reduce waste, and prevent pollution.

Green Waste – the plant debris that is generated during demolition, installation or maintenance phases of a project.

Heat Island Effect – the warmer temperatures that occur in urban landscapes resulting from the retention of solar energy on constructed surfaces such as streets, sidewalks, parking lots and buildings.

Herbicide - a pesticide used to kill or control unwanted plants.

Household Hazardous Waste Collection Facility - a place to take unwanted or out-dated hazardous waste for safe management. In Marin, there are two facilities: one for Novato residents (892-7344) and another for the rest of the County (485-6806). Businesses in Novato should call 892-6395, businesses in other areas of Marin should call 485-5648. This facility is free to households, businesses are charged a fee.

Hydro Mechanical Obliteration - a mechanical weed abatement tool that uses pressurized water to control unwanted plants.

Hydrozoning - a landscape practice that groups plants with similar water requirements together in an effort to conserve water.

Impervious Surface – the surfaces on a developed site that inhibit the infiltration of stormwater, such as driveways, parking lots, sidewalks, roadways and rooftops.

Infiltration Planter – a planter designed to treat stormwater by catching rainfall and draining through a filter.

Integrated Pest Management (IPM) - a decision-making process that uses many approaches, including reduced-risk pesticides. When treatment is needed, IPM looks at physical controls (e.g. sticky traps, vacuuming), horticultural controls (e.g. mowing the lawn to a proper height, using slow-release fertilizers), biological controls (e.g. using beneficial insects) and, as a last resort, the least toxic chemicals available.

Invasive – An introduced species that takes over natural landscapes. Invasive plants are able to grow unassisted in California's natural areas (including home gardens), and can have a negative impact on the environment or economy of the areas they colonize by replacing natives, reducing biodiversity, choking waterways and increasing fire risk.

Landscaping for Less to the Landfill - reducing plant debris by first, not generating it in the first place and secondly, keeping grass clippings, prunings and leaves on site as mulch or compost

Landscaping Locally - applying landscape practices that respect the natural attributes of the region and contribute to the health, diversity and sustainability of the San Francisco Bay ecosystem.

LEED – Leadership in Energy and Environmental Design. A voluntary program for rating the environmental impacts and sustainability for both new and existing building projects, developed by the U.S. Green Building Council (www.usgbc.org).

LID – Low Impact Development. A land planning and stormwater management approach that emphasizes water conservation and maintaining the natural hydrologic patterns of a site.

MAWA – the Maximum Applied Water Allowance – used to calculate a water budget.

Mediterranean Climate - weather patterns occurring between 30 and 40 degrees latitude on the western limits of a continent, defined by mild temperatures and an absence of rain for half the year.

Microorganism - or *microbe* is an organism -- often single-celled -- that is microscopic (too small to be visible to the human eye).

Mulch – any material spread over the surface of the soil to reduce evaporation and erosion and enhance the growth of plants and appearance of the landscape. It may be organic (wood chips, compost, etc) or inorganic (rocks).

Mulching – the process of spreading material over the surface of the soil to protect soil and water infiltration and provide plant nutrients.

Native – A naturally occurring species. Many California native species of plants are specific to one particular or climate zone within the state, and may not do well in other areas in California.

Natural Enemy – organisms that kill or decrease the reproductive potential of pest organisms. Natural enemies that limit pests are a key component of integrated pest management.

Non-Native - Non-native plants are species that were brought to an area either intentionally or unintentionally by human action. Most non-native plants are not invasive.

Nonpoint Source Pollution - unlike pollution from industrial and sewage treatment plants, non-point source pollution (NSP) comes from many diffuse sources. When rainfall, irrigation water or snowmelt runs off and through the ground, it picks up and carries away natural and human-made pollutants, finally depositing them into lakes, rivers, wetlands, coastal waters, and even our underground sources of drinking water. These pollutants include:

- Excess fertilizers, herbicides, and insecticides
- Oil, grease, and toxic chemicals from urban runoff and energy production
- Sediment from construction sites, crop & forest lands, and eroding streambanks
- Salt from irrigation practices and acid drainage from abandoned mines
- Bacteria and nutrients from livestock, pet wastes, and faulty septic systems

Organic Landscaping - an approach to the design, installation and maintenance of landscapes that is uses naturally-derived material inputs and prohibits the use of synthetic fertilizers and pesticides.

Organic Materials Research Institute (OMRI) – Provides organic certifiers, growers, manufacturers, and suppliers with an independent review of products intended for use in certified organic production, handling, production and processing. The OMRI Generic Materials List is a catalog of over 900 substances that are allowed, restricted or prohibited for use in organic agriculture and food processing. (http://omri.org/OMRI_generic_list.html)

Organic Matter - plant and animal debris in various stages of decay.

Permanent Wilting Point - the soil wetness at which a plant wilts and can no longer recover its turgidity when placed in a saturated atmosphere for 12 hours

Permeable Surface - a hardscape or paving material that allows water to permeate into the soil.

Parasite - an organism that grows, feeds, and is sheltered on, or in, a different organism while contributing nothing to the survival of its host.

Parasitoid - an organism that feeds on a host in a manner that results in the death of the host.

Persistent Pesticide – a pesticide resistant to degradation that remains unchanged in the environment for long periods of time; can build up over time in the environment.

Pesticide - any substance or mixture intended for preventing, destroying, repelling, killing, or mitigating problems caused by any insects, rodents, weeds, nematodes, fungi, or other pests; any other substance or mixture intended for use as a plant growth regulator, defoliant, or desiccant.

pH - a measure of the acidity of a solution. The measure of soil acidity or alkalinity plays a major role in determining which nutrients are available to plants.

Porous Pavement – concrete or asphalt that allows rain to infiltrate, thereby reducing runoff and promoting groundwater recharge.

Precautionary Principle – a less harmful, cost-effective substitute is selected if there is a question of human or environmental harm from a practice, method or product.

Precipitation Rate - the rate at which sprinklers apply water to the landscape

Predator - an animal that attacks and feeds on other animals, normally killing several individuals during its life cycle.

Pressure Treated Lumber – wood that is subjected to high pressure and filled with a chemical preservative that deters pests and slows down weathering; not generally recommended for use around gardens with food crops.

Pyrethroids – synthetic chemical compounds. They are similar to natural chemical pyrethrins - made from chrysanthemum flowers. Products made from synthetic pyrethroids often contain the word “thrin” in their name. (For example, Permethrin) Pyrethroids can be a threat to water quality and can be toxic to aquatic insects and crustaceans.

Rain Garden – See Bioretention Cells.

Recycled Content Products – products made from materials derived from discarded goods.

Reference ET – (ET_o) - ET_o stands for reference evapotranspiration. ET_o is an estimate of the amount of water used by water evaporated from both the soil and the amount used by well-irrigated grass (transpiration). It is calculated based on weather data measured on site, at DWR's CIMIS weather station and retrieved daily by a central computer in Sacramento.

Re-refined oil – equal in quality to virgin oil and is certified by the American Petroleum Institute (API). Also used on the NASCAR race circuit.

Resource conservation – using less water, energy, equipment & other materials, and protecting the resources we have from overuse, chemical contamination and erosion.

Salvaged Materials – items put to a new use after their initial use, without being remanufactured between uses.

Sediment - any particulate matter transported by water, which eventually is deposited on the bottom of a body of water.

Shearing – a method of pruning used to form and maintain plants or hedges of uniform shape by routinely cutting them back with hedge shears and resulting in a geometric growth habit.

Sheet mulching - a layered mulching system which optimizes the benefits of mulch. Sheet mulching suppresses weed growth, composts plant debris in place, encourages worms and other soil organisms and conserves water.

Smart controller – an irrigation controller that reduces outdoor water use by monitoring and using information about environmental conditions (such as soil moisture, rain, wind, slope, soil and plant type, etc.), and applying just the right amount of water based on those factors

Soil - the combined effect of physical, chemical, and biological processes on soil parent material resulting in the formation of layers. Soil is made up of minerals, air, water, soil organisms, and organic matter.

Soil Amendment - any material added to soil to improve its physical properties, such as water retention, permeability, water infiltration, drainage, aeration, and structure.

Soil Foodweb - a thriving community of organisms living all or part of their lives in the soil.

Soil Structure - the arrangement of soil particles into aggregates.

Soil Texture - the composition of sand, silt, and clay in a soil.

STA - US Composting Council's Standard Testing Assurance program for compost.

Sustainable Landscaping - an environmentally-sound, economically-viable and socially-just approach to the design, installation and maintenance of landscapes that seeks to reduce consumption of resources, maximize on-site capture of energy and minimize waste.

Synthetic Pesticide - a manufactured chemical substance that is used to kill, debilitate, or repel a pest.

Threshold - the acceptable level of pests or damage that will determine the necessity of further controls.

Topdressing – a method of applying fertilizers, minerals or compost by spreading a thin layer over the top of soil or directly to turf or other groundcovers.

Urban Runoff - rain and other water that moves out of a landscape site into the stormdrain system -- untreated -- and eventually, to creeks and the Bay.

Urbanite – Reclaimed and /or recycled concrete.

Vegetated Swales (bioswales) – open shallow channels with thick vegetation covering the side slopes and bottom, designed to collect and slowly convey runoff to downstream discharge points.

Vermiculture – raising earthworms for the production of their castings (droppings) as fertilizer.

Waipuna – weed control system that uses a non-toxic, organic hot foam (made from corn and coconut) to manage weeds.

Water-holding Capacity - the amount of water that soil can hold above oven-dry, expressed as inches per feet.

Watershed - A watershed is all the land in a region from which rain collects and drains into a common creek, river, lake or bay.

Wattle – one of many erosion control practices typically used to reduce sediment in water runoff. It is often constructed of natural plant materials such as straw but can also be made from compost.

Wildlife Corridor – Wildlife habitat areas that connect wildlife populations divided by human activities such as roads and development. Corridors are essential for biodiversity, allowing populations to interbreed and access resources.

WUCOLS - stands for *Water Use Classifications of Landscape Species*. It is a University of California Cooperative Extension Publication. The project was developed by the San Francisco and San Mateo County Office in cooperation with 32 landscape professionals. The purpose and intended use is to provide guidance to landscape professionals when selecting plant material, while taking into consideration water needs. It also serves as a guide to assist in developing irrigation schedules for existing landscapes.

BFL Training Evaluation – CLASS 1 – February 2, 2011 (20 responders)

	Agree	Neutral	Disagree	COMMENTS
Most, if not all, of today's speaker(s) were well organized, informative & engaging	19		1	Fun!; GREAT!; Lots of good information; But the second one was repeating too much;
There were enough opportunities to ask questions & participate	15	5		Not enough time for questions really but I'm not complaining!;
Time allotted for topics was sufficient	16	3	2	More time!; Although 2 more hours would have been great!; Would or could have listened for a long time – Alane was GREAT;
I gained new and/or valuable information from this class.	20			Would like more practical application details for day-to-day gardening; Soil food web info was great; Absolutely; Yes, you were really well-prepared with handouts

Where did you hear about this program (e.g. MCSTOPPP, MMWD, CLC, etc.):

MMWD – 6

MCSTOPPP – 2

Thru employer - 4

Co-workers took class - 2

BFL Training Evaluation – CLASS 2 February 9, 2011 (24 responders)

	Agree	Neutral	Disagree	COMMENTS
Most, if not all, of today's speaker(s) were well organized, informative & engaging	24			The guest speakers are highly motivated with great knowledge; very good speakers – lots of info; yes but I disagree with the 1 st speaker about the way that he or his people plant after adding or putting down sheet mulching; great info from both speakers
There were enough opportunities to ask questions & participate	24			Very informative; more questions periodically
Time allotted for topics was sufficient	21	2		More time would help; is there ever enough time to explore gardening matters; more in this case is better; very informative (#1); need more time – maybe 3 – 9 pm;
I gained new and valuable information from this class.	23	1		Very good; so easy to do; Stephen was great – loved soil lecture

What information did you find most useful in Classes 1 and 2? Soil structure – understanding soil biology; sheet mulch demo really valuable (lass 2) and soil biota info in class 1; All; learning about the soil food web and benefits of using rolls of corrugated for sheet mulching; soil testing info; how to care for soil and its components – the importance of compost and mulch is key and that was well presented in both classes; all info on compost/compost tea/mulch/sheet mulch and soil composition; soil food web, sheet mulching demo and soil texturing – hands on; the sheet mulching technique of watering land and the soil info; how efficient it is/sheet mulch hands on to understand soil; sheet mulching and compost tea; Geoff's technique of applying sheet mulch and understanding the benefits of compost tea; food poop, loved the lecture on soil,, learning about soil structure; specifics of how to do sheet mulching, where to buy compost, mulch samples; It's been decades since I took a soils clad – it's important to remember this stuff – VERY practical info about sheet mulching; mulch

What would you change or improve about Classes 1 and 2? Instead of having 7 days of class, add more days; N/A; Nothing – it was great; None; well done as is; handouts of powerpoint presentations; Nothing – loved the class; second speaker didn't seem to have "real world" landscape maintenance experience – too much science and not enough real world know how; close the doors – end class at 6:30/7 pm too late for concentration; None; Nothing; Would like more specific connection to how to or where to find how to; N/A; how to take a soil sample depth and how to extract;

BFL Training Evaluation – CLASS 3

Name (optional):

	Agree	Neutral	Disagree	COMMENTS
Most, if not all, of today's speaker(s) were well organized, informative & engaging	22	3		
There were enough opportunities to ask questions & participate	16	7	2	More time – go to 9!; more time for questions
Time allotted for topics was sufficient	12	9	5	MCSTOPPP; just barely; could needed time for 3 rd speaker; more time;
I gained new and valuable information from this class.	24	1		Oh yeah;

What information did you find most useful in Class 3?

CIMIS and ordinance info; all good – want to know more about rainwater harvesting and greywater – I know it's hard to fit so much in the 7 weeks, but more time for each subject; bio-retention techniques to slow it, spread it, sink it; swales and rain gardens; stormwater management; MCSTOPPP; info on different types of resources; measures for applying proper water, Eto and learning about collecting rainwater and rain

gardens; bioswales – really interesting – irrigation difficult – MMWD speaker dull speaker; I wanted to hear more about greywater systems; rain catching techniques

What would you change or improve about Class 3?

More time allotted to speakers possibly by reducing number per class session; have handouts for Patrick’s talk; less lecture on soil – too much repeat; overhead light is out – had to read in low light area of room – end class at 6:30; the third speaker could’ve used more time

BFL Training Evaluation – CLASS 4

Respondents: 23

	Agree	Neutral	Disagree	COMMENTS
Most, if not all, of today’s speaker(s) were well organized, informative & engaging	22	1		
There were enough opportunities to ask questions & participate	23			
Time allotted for topics was sufficient	22	1		Time sufficient for questions;
I gained new and valuable information from this class.	23			

What information did you find most useful in Classes 4?

Good recycling info and Tour – good practical compost info, pics of finished landscapes a great idea; MS new food scrapes service since I am in the area, the process of making compost; the tour was great and useful; enjoyed the trip and Patti Garbarino; composting organic matter and recycling, mulching, mulching, compost, compost; it’s important to me to know ways to compost/re-use the plant material, resources for salvage and local compost invaluable, Loved the resource recovery tour – I think it should be a part of the class but understand time is severely limited; how commercial

compost is made, tour of MSS resource recovery facility; how to compost – tour was insightful and knowledgeable; info on composting; Tour – YES – valuable; compost info – could talk longer, tour really good – makes you aware of the volume that never stops; composting and mulching differences, zero waste – where Marin Recycling is now – Tour was great; All; compost, mulch - I really liked the garden photos; Will from Sonoma Compost was excellent – how important Joe Garbarino’s operation is to our area and community; how to make compost;

What would you change or improve about Class 4?

Loved the tour – yes, it’s worth doing!; handouts of presentations; first speaker not too informative on recycled materials – more on design/plants; end class at 6:30 – 7 too late; Tour was a very informative useless element to the evening program;

ADDITIONAL COMMENTS MAY BE PLACED ON REVERSE SIDE OF PAPER!

BFL Training Evaluation – CLASS 5

Respondents: 24

	Agree	Neutral	Disagree	COMMENTS
Most, if not all, of today’s speaker(s) were well organized, informative & engaging	24			
There were enough opportunities to ask questions & participate	20	4		
Time allotted for topics was sufficient	22	3		
I gained new and valuable information from this class.	24			

What information did you find most useful in Class 5?

Useful info on native plants; native plant solutions for homeowners, how to keep oaks healthy; Dave Phelps – new “no mows”, native sold alternatives, feather-meal fertilizers; enjoyed Janice Alexander the most; lawn care; muy bien; everything was fine and clear; all; what to look for to ID sudden oak; everything was helpful and very well thought out; lawn info an unfortunate necessity; sudden oak death; plant communities of the bay area; sod info; great native plant list, concise, good summary of how to deal with sod – and making peace with lawn is good because not everybody is willing to give them up

What would you change or improve about Class 5?

Lawn care too long but informative and thorough; Have Patrice show pictures of the ENTIRE plant in the landscape; more question time; more handouts of presentations; end doors at 6:30 – too tired; everything was covered very well; I’d like a list of plants deer love for exclusionary purposes; little too much soil info repeat;

BFL Training Evaluation – CLASS 6

Responses: 22

	Agree	Neutral	Disagree	COMMENTS
Most, if not all, of today’s speaker(s) were well organized, informative & engaging	21	1		Time management of speakers use insufficient – hurried pace; yes but the speaker with the microphone was too loud
There were enough opportunities to ask questions & participate	21			S. Ash – no time available, otherwise yes.
Time allotted for topics was sufficient	22			
I gained new and valuable information from this class.	21	1		

What information did you find most useful in Class 6?

Learned something new about powdery mildew – slides of larvae rally helpful; beneficials – plants to have in a garden – pests – ants, aphids and what to do; it was good; IPM strategies for controlling pests with beneficials vs. pesticides; liked seeing

the beneficial bugs in your garden; IPM; second speaker – product info; other ways to eliminate unwanted insects; information on beneficial insects; protecting beneficial insects; IPM; info about beneficials; whole class; very much – learned new ways to talk clients not to use chemicals

What would you change or improve about Class 6?

First speaker too general; end class at 6:30; nothing; heard all the bug info; more time on subjects

BFL Training Evaluation – CLASS 7 Registrants Responding: 27

	Agree	Neutral	Disagree	COMMENTS
Most, if not all, of today's speaker(s) were well organized, informative & engaging	26	1		Armanino spoke too fast and did not engage the group with questions about what we do and who we are in the landscape industry.
There were enough opportunities to ask questions & participate	27			
Time allotted for topics was sufficient	26	1		
I gained new and valuable information from this class.	27			And from all calsses

What information did you find most useful in Class 7?

How to attract wildlife; I felt the thorough discussion of diversity in the landscape was helpful.; Wildlife habitat; tools needed to have wildlife in a garden; native plant info; sheet mulching and soils; how to reduce green house emissions; new ways to create wildlife habitats; how to crate a diverse landscape which attracts wildlife; putting into practice bay friendly techniques; learning about the different plants that will being a

variety of animals, bees, hummingbirds, etc.; re-cap plant diversity, us of natives, useful website info; list of books; the green business certification; Something that I really liked was the information that Dana Armanino gave us about how to enroll in Green Business. Another thing that I liked was the review that Debi gave us because it included a lot of the seven classes we had.; landscape diversity; Discussion about diversity in the landscape; Landscaping for wildlife in landscaped areas. Installing native plants to attract birds and wildlife; Top 10 most Wanted; How to create and protect wildlife habitat; Planting in groups, attracting wildlife, how many insects wildlife eats; Creating “edges” and consider wildlife corridors; Wildlife habitat creation in landscapes

What would you change or improve about Class 7?

Nothing; Nothing; test beginning of class; Add more pictures of Ca natives; end the class at 6:30; more time for subject; material was very interesting – last class – just test – not a training; sorry – no ideas; Probably just to add more pictures about habitat gardens, native gardens, Mediterranean gardens, succulent gardens, But everything was spectacular.; combine topic within the first 6 series and leave test date as a separate/isolated day alone to itself; N/A; Nothing; Perhaps a list of “small things which make big differences” for wildlife in landscapes

Can you give us a name(s) and contact information for someone you think would be a good speaker on a particular topic? This includes yourself!

No, I don't; Daniel Levy: 510-439-3710 is a great speaker on soil; none; Jeff Jungsten of Caletts Jungsten Construction (Andy Johnson suggested him); Daniel Levy, Gardeners Guild on soil/sustainability – he's superb – 510-439-3710; I wish – I felt exposed to many great thinkers in sustainability; Someone from The Hungry Owl Project or other bird organization; Marie Miller (415-250-2290 or 415-482-8985) and Quinn Allis for plant ID (info provided by Nery Gonzalez of 233-3146); no; Malcolm Morrison of Pacific Landscapes at 707-829-8064 specializes in compost tea – all facets. Biodiversity in the landscapes areas. Please indicate James Ambuehl referred him to your group.; Linda J. Novy at 415-457-5268; Barry Coates for Oaks and Arthur Baker for Pruning (from Carey Egger Diaz); Wendy Johnson, teacher, farmer-extraordinaire at College of Marin, IVC Farm; Jan Gross – designing with the client's s needs and BF guidelines in balance

Do you know of other Associations we should contact for continuing education credit?

Merritt College and APLD; ISA, P.A.P.A., Sonoma County Ag; Planet; no; none; PLANET and CLCA; Roger – specialist in irrigation at 497-6806 (Nery might have meant this to be placed above); no; CLCA, QWEL

In this course, did you learn a few things that will.....

I felt the class was helpful being trained in more “classical” gardening practices.; Help provide habitat; yes; help me implement the best practices of bay friendly landscaping; absolutely; I learned many great things that will help me to take care of our bay.; help me be better and aware of our surrounding and how fragile our ecosystem is; Yes, I will be more knowledgeable to my clients and can promote BFL practices in my work; how to help the bay are in breaking the old wasys of maintaining and installing landscapes; all the information in these classes was new. As HR, I have little contact with the landscape practices. I wanted to learn what our landscapers were doing and support our business. I REALLY enou these classes. ; Great – yes – very inspiring; YES!; change the way I do business. Oh boy YES. We are currently thinking how to put all our clients on a compost-pnly diet (the yards, that is). We now realize better the huge importance of healthy soil and bringing back to life all those dead soils and how to do it. You’ve made grasscyclers of us.; How to plant natives and local plants for wildlife habitat such as ceanothus, coffeeberry, elderberry, Manzanita, etc. Also we have to have a water source for birds too.; This was a total change in perspective for me. Learned quite a bit but the speakers were a bit too fast for me to grasp all info but as a whole – ECELLENT – Thank you; That will inspire me to utilize BFL practices where I Otherwise might have continued with “business as usual”.; Provide me with knowledge to make smarter decisions in the landscaped areas I maintain. Better plants, better irrigation systems.; Yes – about soil health and the importance of compost and mulch; Change the way I will design new landscapes; Many, many new things that will reduce our use of hight N fertilizers and adding to the landfill; Yes, of course; Yes, ddefinitely

Is there anything we can do in the future that would improve this series and make it more valuable to you?

Nope; I still think a Saturday morning would be a good option. It is difficult to take time off from work. Economic impact for hourly people.; change the time – otherwise, no; It's perfect like that; at the end of class is there were handouts e-mailed to you or a place to go online and look them up; talk more about native plant types and show pictures and how they are used in the field; all great info – just too late in evening; I wish class was given in Spanish so many Hispanic landscapers could take it and understand; none; Perhaps have conserve energy with another class and homve only test on the last day.; I think the classes were so worthwhile. Speakers were enthusiastic and highly informed. Very contagious green philosophies!; As a (hopeful) BFL graduate, I'd love to see a bunch of seminars and workshops to attend. As a newbie to the industry I found it incredibly valuable as is.; This class was very inspiring and reinforced many things that I sorta knew, but was reminded how important they really are. And that small things make a big difference. Great reference materials and resources to look up things in the future. I will recommend this class – thank you.; Just to have a continuation of this program and probably adding a little bit more topics, I mean adding 3 more classes. Such as how to make or design special gardens for children, green roof. I'm really happy about BFL because the whole incorporation is educating to tall of us (gardeners, landscapers, and our clients). This program was really good for me because I have learned a lot form the professional speakers and also I'm putting them in practice already. Thank you very much Debi, Purin, BFL , professional speakers and to our classmates too because we learned a lot from each other. Nery Gonzalez 415-233-3146.; Have no more than 2 speakers per session. Spend a bit more time discussing practice questions. Gina and Debi – Thank you both for all the ffoert you have both put into educating me on BFL....much appreciated.; A site visit to a ocation using California native plantings would be a nice addition. Even if just to a nursery? Thanks you for an enjoyable course; no; Thank you; I think it was great! Informative! Educational! Very practical! Information will make landscaping more simplified rather than more complex; Yes, an intermediate course or an advances course; Can't think of any

Marin's Stormwater Ordinances (They are Bay-Friendly!)



Terri Fashing, MCSTOPPP Program Manager
Bay Friendly Landscaper Series – MCSTOPPP & MMWD
February 16, 2011

1

TOPICS



- MCSTOPPP
- Phase II Municipal Stormwater Permit
- Ordinances in Marin
- MCSTOPPP stormwater coordinators
- What are we protecting?
- Bay-Friendly Landscape Pros
- Post-construction requirements overview

2



MCSTOPPP

- Joint effort of Marin's cities, towns and unincorporated areas
- Program's goals
 - Prevent stormwater pollution
 - Protect water quality in creeks and wetlands
 - Comply with State and Federal regulations
 - Preserve beneficial uses of local waterways



3

Marin's Municipalities Are Regulated



- Clean Water Act => NPDES
- Statewide Phase II NPDES Municipal Stormwater Permit
- Stormwater Management Plan
- Reduce the discharge of pollutants



Stormwater Ordinances

- **All Marin County Municipalities**
 - Focus on education and outreach!
 - Prohibit non-stormwater discharges to storm drains
 - Prohibit discharges to creeks and wetlands
 - Prohibit destruction of riparian habitat and creek bed or bank alteration
 - Require responsible parties to abate pollution (or restore creeks...)
 - Enforce ordinances
 - Control runoff from new developments

5




****To Report an Illegal Discharge Click Here****

MCSTOPPP Local Stormwater Coordinators

Area	Contact	Phone	Email
Belvedere	Scott Derdenger	435-3838	sderdenger@cityofbelvedere.org
Corte Madera	Kevin Kramer	927-5057	kkramer@ci.corte-madera.ca.us
County Unincorporated	Howard Bunce	499-3748	hbunce@co.marin.ca.us
Fairfax	Kathy Wilkie	453-0291	kwilkie@townoffairfax.org
Larkspur	Mike Myers	927-5028	mmyers@larkspurcityhall.org
Mill Valley	Jill Barnes	388-4033 (ext. 116)	jbarnes@cityofmillvalley.org
Novato	Dave Harlan	899-8948	dharlan@ci.novato.ca.us
Ross	Rob Maccario	453-8287 (ext. 163)	rmaccario@townofross.org
San Anselmo	Steve Myrter	258-4616	smyrter@ci.san-anselmo.ca.us
San Rafael	Jim Forsythe	485-3375	jim.forsythe@ci.san-rafael.ca.us
	Alt - Diane Decicio	485-3355	diane.decicio@ci.san-rafael.ca.us
	Alt - Nader Mansourian	485-3355	nader.mansourian@ci.san-rafael.ca.us
Sausalito	Todd Teachout	289-4111	tteachout@ci.sausalito.ca.us
Tiburon	Matt Swalberg	435-7354	mswalberg@ci.tiburon.ca.us

Other MCSTOPPP Agency Staff Committee

County of Marin - MCSTOPPP	Terri Fashing - Program Manager	499-6583	tfashing@co.marin.ca.us
County of Marin - MCSTOPPP	Gina Punin - PIP	499-3202	gpunin@co.marin.ca.us
Dan Cloak Environmental Consulting	Dan Cloak - Consultant	(510) 705-1635	danc@dancloak.com

[City of Belvedere](#)
Title 8 HEALTH AND SAFETY-Chapter 8.36 URBAN RUNOFF POLLUTION PREVENTION

[Town of Corte Madera](#)
Title 9 PEACE, SAFETY AND MORALS-Chapter 9.33 URBAN RUNOFF POLLUTION PREVENTION

[Town of Fairfax](#)
Title 8 HEALTH AND SAFETY- Chapters [8.28](#), WATERCOURSES and [8.32](#), URBAN RUNOFF POLLUTION PREVENTION

[City of Larkspur](#)
Title 9 PUBLIC PEACE, SAFETY AND MORALS-Chapter 9.12 WATERCOURSES
Title 15 BUILDING REGULATIONS-Chapter 15.48 URBAN RUNOFF POLLUTION PREVENTION

[County of Marin, Unincorporated](#)
Title 23 NATURAL RESOURCES-Chapter 23.18 URBAN RUNOFF POLLUTION PREVENTION
Title 11 HARBORS AND WATERWAYS-Chapter 11.08 WATERCOURSE DIVISION OR OBSTRUCTION

[City of Mill Valley](#)
Title 17 SEWERS-Chapter 17.06 URBAN RUNOFF POLLUTION PREVENTION

[City of Novato](#)
Title 7 HEALTH-Chapter 7.4 URBAN RUNOFF POLLUTION PREVENTION

[Town of Ross](#)
Title 12 STREETS AND SIDEWALKS-Chapter [12.28](#) URBAN RUNOFF POLLUTION PREVENTION
Title 13 WATER AND SEWERS-Chapter [13.16](#) OBSTRUCTION OF WATERCOURSES

[Town of San Anselmo](#)
Title 5 SANITATION AND HEALTH-Chapter 8 URBAN RUNOFF POLLUTION PREVENTION
Title 7 PUBLIC WORKS-Chapter 12 WATERCOURSES

[City of San Rafael](#)
Title 9 HEALTH AND SANITATION-Chapter 9.3 URBAN RUNOFF POLLUTION PREVENTION
Title 11 PUBLIC WORKS-Chapter 11.30 WATERCOURSES
Title 17 WATERS AND WATERWAYS-Chapter 17.10 DUMPING, DREDGING, AND CONSTRUCTION WITHIN TIDAL WATERWAYS

[City of Sausalito](#)
Title 8 BUILDINGS AND CONSTRUCTION-Chapter 8.48 FLOODPLAIN MANAGEMENT
Title 11 ENVIRONMENTAL PROTECTION-Chapter 11.17 URBAN RUNOFF POLLUTION PREVENTION

[Town of Tiburon](#)
Title 6 PUBLIC HEALTH, SAFETY AND WELFARE-Chapter 20A URBAN RUNOFF POLLUTION PREVENTION

PROTECT BENEFICIAL USES



Steelhead

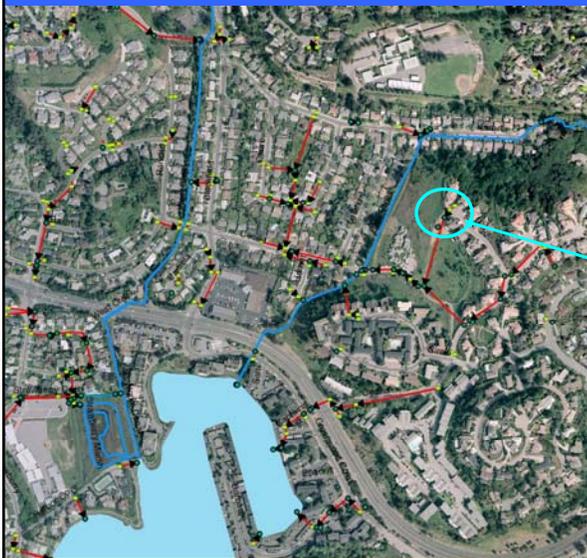
Photo Credit: Thomas L. Taylor

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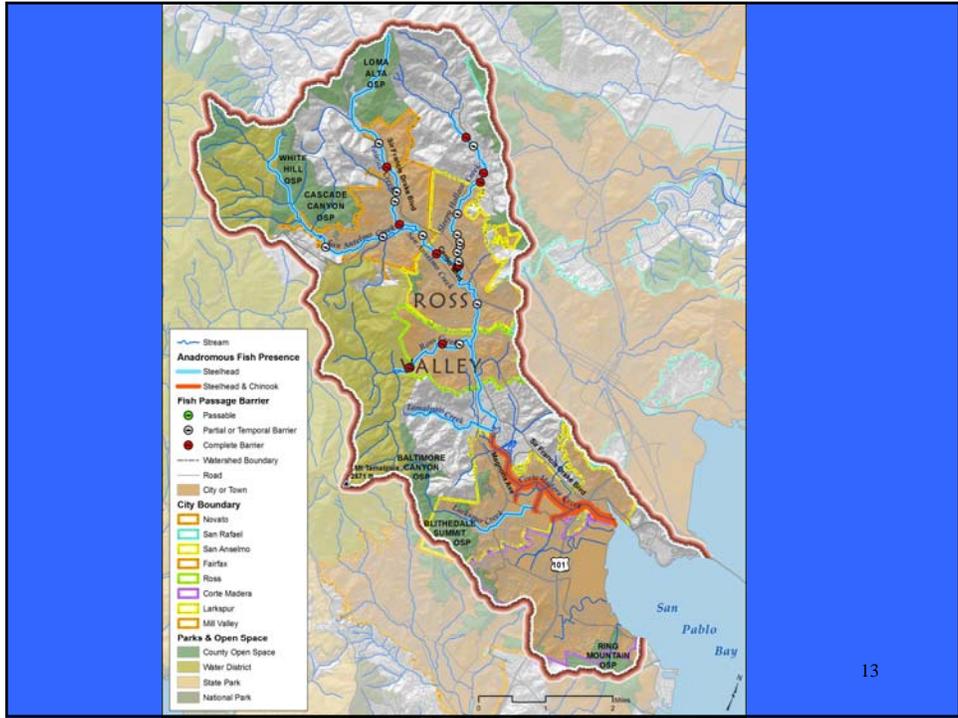
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Storm drain network conveys stormwater...

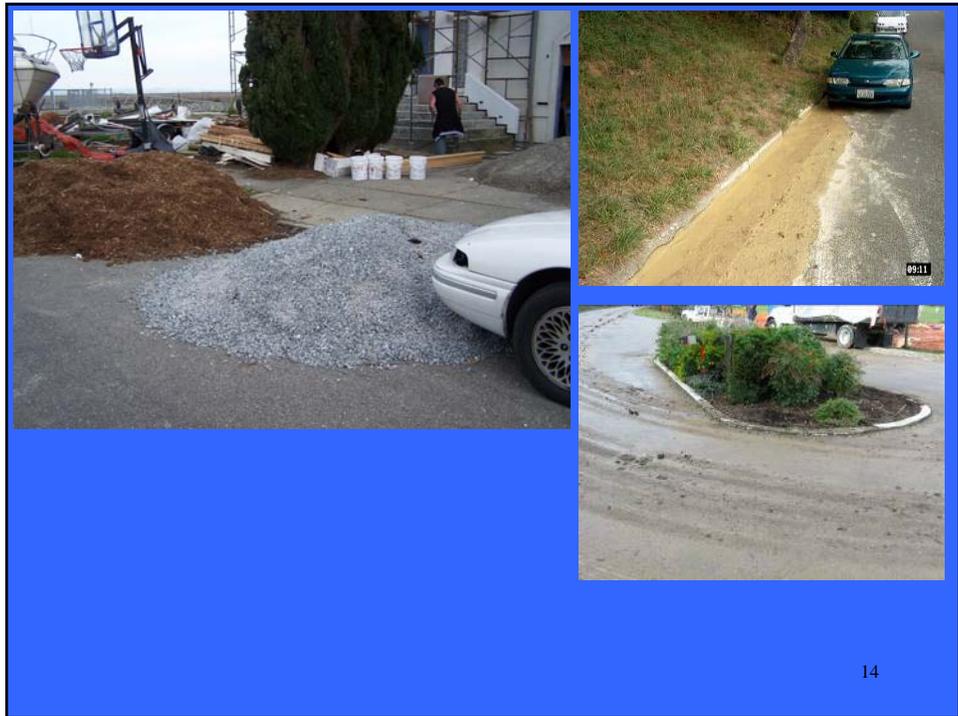


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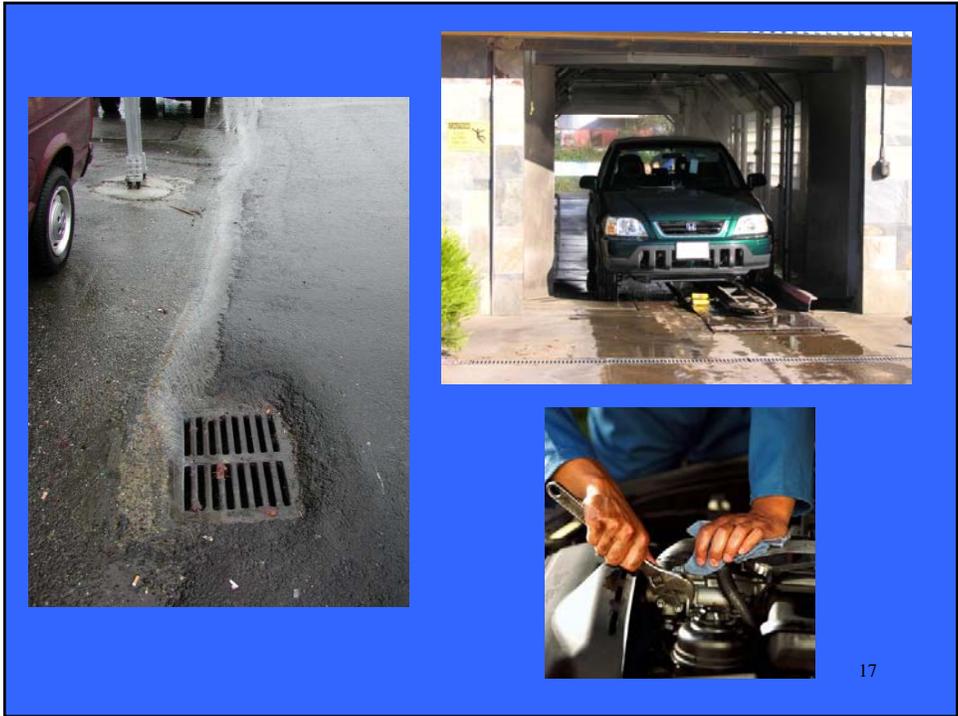
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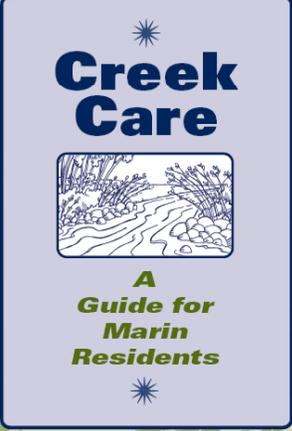


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Bay-Friendly Landscape Pros

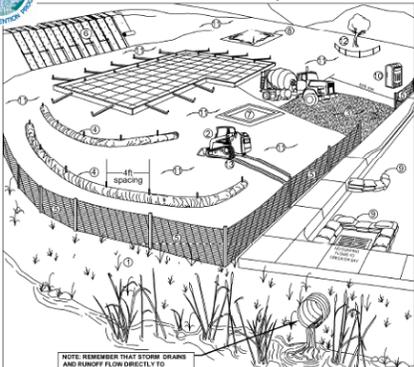
- Compost, Compost, Compost!
- Plant raingardens
- Use less toxic alternatives for pest and weed management
- Plant native plants
- Control over-watering – conserve water
- Create and follow an erosion and sediment control plans
- Keep lawn clippings/compost piles out of creeks and banks
- Protect native riparian vegetation
- Remove non-native riparian vegetation with a planting/slope stabilization plan in place



Creek Care

A Guide for Marin Residents

Marin County Stormwater Pollution Prevention Program
Minimum Erosion/Sediment Control Measures
For Small Construction Projects



NOTE: REMEMBER THAT STORM DRAINS AND RUNOFF FLOW DIRECTLY TO CREEKS, RIVERS AND BAYS UNTREATED

- (1) Check with your local Planning and Public Works departments for erosion control requirements. Grading and/or building may be needed where erosion occurs.
- (2) During grading phase, track-walk up and down slopes (not parallel to them).
- (3) Stabilize site entrance and temporary driveway -- use 3-4" crushed rock for a minimum of 50' (or as far as possible) to prevent tracking soil onto site. This can be used in conjunction with a log wash or rubber plates.
- (4) Use straw wattles along contours of short slopes or slopes 3:1 or flatter, keyed into ground at least 3" deep (typically 2' apart).
- (5) Install silt fence along contours as a secondary measure to trap sediment onsite and to minimize vehicle and foot traffic beyond limits of site disturbance. Silt fencing must be keyed in.
- (6) Install erosion control blankets for stabilized on any disturbed site with 3:1 slopes or steeper, keyed into the ground at least 3".
- (7) Construct a concrete washout site adjacent to stabilized entrance. Clean as needed and remove at end of project.
- (8) Cover all stockpiles and landscape material and burn properly with straw wattles or sand bags. Keep behind silt fence, away from water bodies. Hazardous materials must be kept in closed containers that are covered and utilize secondary containment, not directly on soil.
- (9) Use pea-gravel bags, for similar product) around storm inlets located both onsite and in gutter on a last line of defense.
- (10) Place port-a-potty near stabilized site entrances, behind the curb and away from gutters, storm drain inlets, and water bodies.
- (11) Cover all exposed soil with straw mulch and tackifier (see attachments).
- (12) Existing vegetation should be preserved as much as possible. Areas of disturbed soil/vegetation should be revegetated as soon as practical.
- (13) Prevent equipment mud tracks onto ground by placing strip pans or plastic tarps under equipment.

Note: Schedule construction activities to reduce erosion potential. Sediment and erosion control shall be continually maintained throughout the rainy season (October 15th - April 15th) and must remain effective through the construction and landscape phases. Inspect and maintain Best Management Practices (BMPs) before and after rain events. See reverse for detail drawings. Visit www.mcstoppp.org for more information on construction site management.

Post Construction Stormwater Treatment and Control

- Municipal stormwater programs must address runoff from development
- For applicable projects, developers must apply **design standards**, including runoff treatment and control
- Attachment 4 of the Phase II Permit-
- MCSTOPPP *Guidance for Applicants*



<http://www.mcstoppp.org/newdevresources.htm>

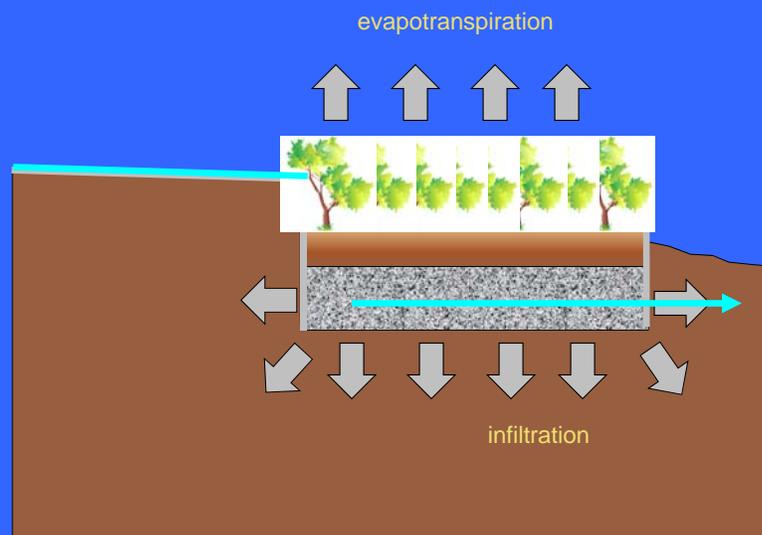
Low Impact Development

- Design the site to mimic natural drainage.
- Disperse runoff to landscape where possible.
- Use Bioretention Facilities distributed around the site.



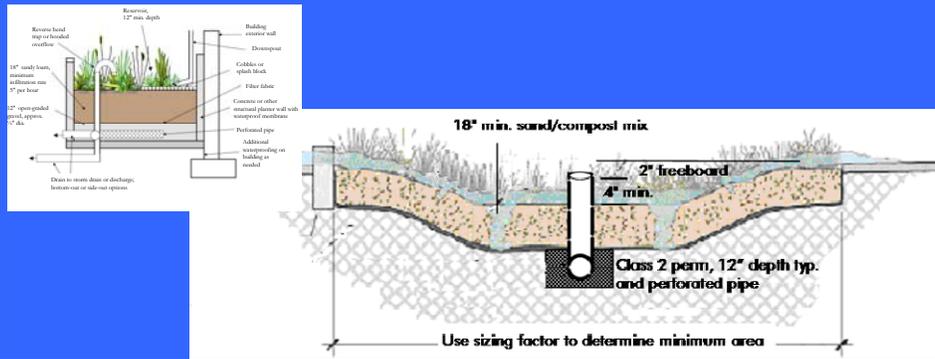
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Bioretention



Design Criteria for Facilities

- 18 inches sand/compost mix
- Class 2 permeable drainage layer
- Perforated pipe underdrain
- Overflow at least 4" above soil surface



Bay Area Soil Specifications

- Long-term, in-place infiltration rate of at least 5 inches per hour
- Support vigorous plant growth.
- Mixture of fine sand, and compost, measured on a volume basis:
 - 60%-70% Sand
 - 30%-40% Compost





Thank you



For more info: WWW.MCSTOPPP.ORG

- Under **“About MCSTOPPP”**
 - **“Stormwater Ordinances”** and **“Action Plan 2010”**
- Under **“Resources for”**
 - **“New Development/Construction”**
 - **“Businesses”**