

FLORIDA-FRIENDLY
BEST MANAGEMENT PRACTICES
FOR PROTECTION OF WATER RESOURCES
BY THE GREEN INDUSTRIES



GREEN INDUSTRIES BEST MANAGEMENT PRACTICES (GI-BMP)

MODULE 1: INTRODUCTION

06/2022

Direct everyone to their seats.

 **WELCOME**

This training is intended to enhance the professional knowledge and judgment of the green industry professionals.

The information presented should be used as general and educational guidance, but specific situations may require more restrictive measures to protect sites that are at particularly high risk for adverse effects on surface and ground water.

UF | **IFAS Extension**
UNIVERSITY of FLORIDA



Florida-Friendly
Landscaping™ GI-BMP
PROGRAM

The logo for the Florida-Friendly Landscaping Program, featuring a stylized map of Florida with a water drop and a plant icon.

Welcome on behalf of the Florida Department of Environmental Protection and UF/IFAS Extension Florida-Friendly Landscaping™ Program. Today's training is based on the concepts and recommendations found in the current version of the GI-BMP manual.

This program is funded in part by FDEP and UF/IFAS Extension with a Section 319 Nonpoint Source Management Program Grant from the U.S. Environmental Protection Agency.

It is important to note: this training is intended to enhance the professional knowledge and judgment of the green industry professionals. The information presented should be used as general and educational guidance; however, specific situations may require more restrictive measures to protect sites that are at particularly high risk for adverse effects on surface and ground water.



So let's get started: what, exactly, is meant by the phrase *by the Green Industries*?

Simply put, only you, the people working every day, mowing, pruning, planting, weeding, fertilizing, watering, taking care of pest problems, and teaching your customers how to properly care for their lawn, can make a difference in the effects our landscapes have on our natural resources.

Governments can regulate and educators can teach, but only the individual working in the landscape can actually make a difference. By the end of this training, you will be able to explain the role that Green Industries professionals perform in protecting Florida's water and environmental resources.



HOUSEKEEPING

- Sign-in
- Agenda
- Silence cell phones
- Restrooms
- Refreshments & lunch
- Recycling
- Take notes
- Relaxed atmosphere

Before we begin:

- Sign-in - If you are arriving late, or did not sign-in at the registration table, please do so after the pre-test session shortly after this introduction.
- Agenda – Your agenda should be located in your materials or (posted on the whiteboard).
- Silence Cell Phones by turning them off or putting them on vibrate. We ask that you exit the training room to continue your phone conversation during the presentations.
- Restrooms – (Host) provide details and directions
- Refreshments & Lunch - (Host) day's refreshments and lunch is provided (or not), so that we can stay on location for the day.
- Recycling – Please dispose of recyclable materials and trash appropriately (host directs to location)
- Take notes – (Host preference) we have provided handouts and/or note taking materials for you to use. These materials are located at your seat or registration desk upon request.
- Relaxed atmosphere – Please keep comments on topic and limit private chatter during the presentations. Raise your hand to speak to instructors.



WATER QUALITY PROGRAM



Many of Florida's water resources are particularly susceptible to pollution because of the state's unique geology and climate. Floridians obtain most of their drinking water from ground water via wells. Ground water supplies often lie near the surface and may be covered by nothing but sandy soil. Surface waters in Florida are very sensitive to even small additions of pollution, which have caused widespread ecosystem changes in our sensitive estuaries, lakes, rivers, and the Everglades. Today's presentation represents a collaborative effort towards protecting Florida's natural resources.



Landscape practices that make the best use of technology and practical professional experience can protect our water resources. The Green Industries Best Management Practices Training Program emphasizes four goals to reduce nonpoint source pollution and promote efficient water use.

Goal 1: Reduce the off-site transport of sediment, nutrients, and pesticides through surface water or ground water.



Goal 2: Use appropriate site design and plant selection by using the right plant in the right place to ensure healthy growth. Plant selection and location are the two most important factors in planning a lawn and landscape.



Use appropriate rates and methods of applying fertilizer and irrigation to prevent pollution, conserve water, and promote healthy plants.

Goal 3: Use appropriate rates and methods of applying fertilizer and irrigation to prevent pollution, conserve water, and promote healthy plants.

BMPs to protect water quality can be affordable and easily implemented, and are effective in reducing the off-site transport of sediment and nutrients from inappropriate cultural practices. One should time fertilizer and irrigation applications to maximize plant use and minimize adverse environmental impacts.



Use integrated pest management (IPM) to minimize pests and apply chemicals only when appropriate

The last goal we will cover today: Use Integrated Pest Management (IPM) to decide when pesticide applications are needed to manage pests in the landscape.

The use of pesticides for controlling pests remains an important part of landscape plant management in Florida. Select pesticides that are the least toxic, least water soluble, least volatile, and most effective. The key to reducing pesticide use is to combine genetic, cultural, and biological management practices into an IPM program that focuses on the prevention of pest problems.



GI-BMP TRAINING



The GI-BMP training is designed to provide information in Best Management Practices (BMPs) for anyone working in the lawn, landscape, pest control, or municipal grounds areas.

The current training manual and program came about as an initiative by Green Industries Stakeholders to implement alternative measures to protect the environment. “By the Green Industries” on the program’s title highlights the active involvement of the Green Industries and their leading role in training, disseminating, and implementing these practices.

“Protection of water resources by the Green Industries” means that the Green Industries play a leading role in the protection of the Florida water resources by implementing the GI-BMPs. How each one of you does your job, every day, matters.



TODAY'S PROGRAM

45 minutes	Introduction and Pre-test
50 minutes	Overview of GI-BMPs for Protection of Water Resources in FL
10 minutes	Break
80 minutes	Lawn and Landscape BMPs
10 minutes	Break
50 minutes	Irrigation BMPs
35 minutes	Lunch
50 minutes	Fertilizer BMPs
10 minutes	Break
50 minutes	Pesticide BMPs
15 minutes	Review
30 minutes	Post-Test

It is important that we stay on time, we will follow this agenda and presentation format. Typically, the training will last six hours, which includes lunch and break times throughout the day. Continuing education units are offered for participating in today's training, consult with your host for more information .

The GI-BMP training consists of five modules, lunch and between module breaks:

Module 1: Introduction

Module 2: Overview of Nonpoint Source Pollution

Module 3: Lawn and Landscape

Module 4: Irrigation

Module 5: Fertilizer

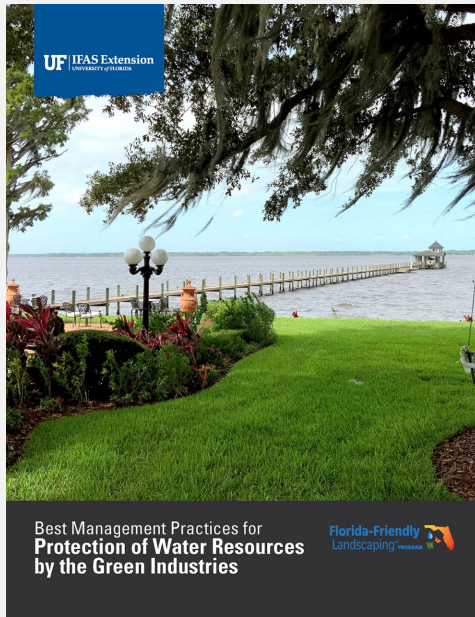
Module 6: Pesticides

Please note times and breaks list.

Any Questions?



GI-BMP MANUAL



At this time, locate your training manual. The GI-BMP manual is designed to be an educational guide for professional service providers and other interested parties. It does not substitute for the services of a landscape architect, engineer, or other design professional. Design issues are discussed as they apply to the service industry and their clients.

Remember, whether you are affected by the law or not, please use the practices discussed in the manual, and remember...*HOW YOU DO YOUR JOB EVERY DAY MAKES A DIFFERENCE.*



WHAT YOU WILL LEARN

- Practices that minimize Nonpoint Source Pollution (NPS).
- Efficient and effective landscape plant installation, establishment, and maintenance cultural practice.



This training program provides information and guidance on turfgrass and landscape management practices to minimize Nonpoint Source Pollution in order to conserve and protect Florida's water resources.

These practices cover both the establishment of new turf and landscapes and the care of existing turf and landscapes, including construction activities, irrigation, nutrient management, and pest management. Overall, this training is intended to enhance the professional knowledge of the green industries professional and educate your clients to make wise decisions that protect Florida's natural resources.



WHAT YOU WILL RECEIVE AFTER TODAY

Participants with a score of 75% or higher on the post-test will receive:

- GI-BMP Certificate of Completion
- A wallet card
- Qualification for the Limited Commercial Fertilizer Applicator Certificate (LCFAC)

*Continuing Education Units (CEUs)**



Upon completion of the GI-BMP training, class participants must take a post-test. Participants with a score of 75% or higher will receive a GI-BMP certificate of completion.

According to Florida law, all commercial fertilizer applicators need to obtain a FDACS Limited Commercial Fertilizer Applicator Certificate (LCFAC) by January 1, 2014. A copy of the GI-BMP certificate of completion is required to apply for this FDACS certification, and also may be required by some local governments to obtain a work permit.

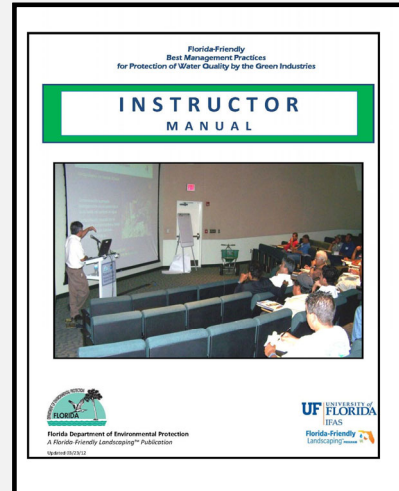
It is important to note: The GI-BMP Certificate of Completion merely states that you passed the class on a given date. Certificates of completion are non-renewable; however, we recommend that you revisit the GI-BMP training program every two to three years for new and updated information.

CEUs are currently available only for in-person training attendees. CEUs are provided by the hosting instructor or designated person.



CERTIFIED INSTRUCTOR TRAINING PROGRAM

1. Attend a GI-BMP class, pass the test with a minimum score of 90%.
2. Complete the GI-BMP Instructor Training Application form, meet the eligibility requirements.
3. Attend the GI-BMP Instructor Training class and pass test with a minimum score of 90%.
4. Co-train at least two classes.



Passing the post-test with a 90% or higher score qualifies you to become a GI-BMP training instructor. A GI-BMP certified instructor has the authority to organize and deliver GI-BMP classes, and proctor tests. To become a certified instructor you must meet the eligibility requirements detailed in this slide. If you have questions about how to become a certified instructor, please visit the GI-BMP website for more information.



VIDEO SCRIPT:

Many areas of the state are running low on freshwater supplies. Water conservation is one of the most crucial issues facing Florida in the future, and applying the best management practices described today in this program will help to conserve our precious freshwater. The protection of water resources is enhanced through turf and landscape care practices that make the best use of technology and the practical experience of professionals.

The Florida Friendly Landscaping™ Best Management Practices for Protection of Water Resources by the Green Industries, also known as the “GI-BMP” training program, plays an important part in the protection of surface and ground water resources.

The GI-BMP training program is considered a cost effective method to addressing nonpoint source pollution within the urban landscape by limiting the negative impacts from inappropriate landscape cultural practices.

There are many benefits to businesses using the recommended Green Industries Best Management Practices, such as more efficient use of resources, reduced maintenance costs, better educated workers, improved worker safety and increased profits.

Bottom line, Florida needs your help to protect its water for future generations. As Floridians, we have comfortably depended on natural eco-services to cleanse water; however, Florida’s natural ecosystem cannot keep up. Pollutants are quickly accumulating faster than they can be naturally removed. Landscape designers, installers and maintenance personnel have a greater responsibility to ensure that recommended BMPs and cultural practices are adopted as standard business procedures.

Today’s presentation will introduce necessary skills, judgment and recommendations designed to protect Florida’s natural resources as well as to promote healthy, functional Florida-Friendly Landscapes.

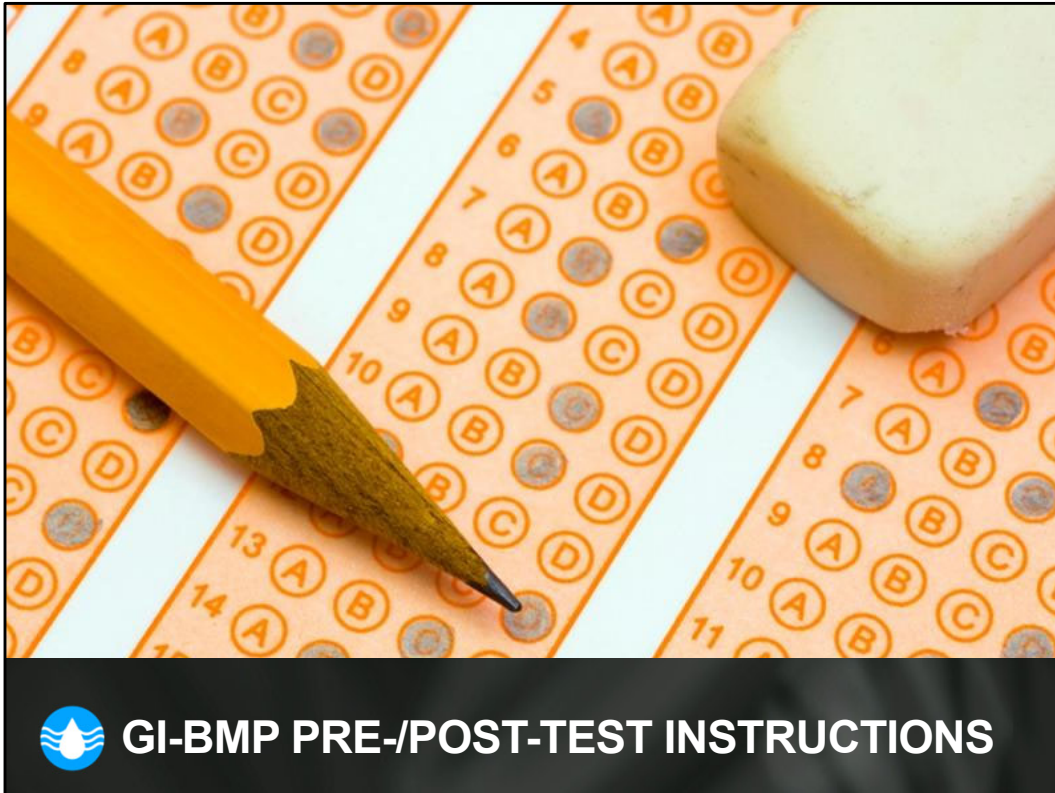
Your training is about to begin. We hope that you will find this information useful and practical in your daily operation. We want to remind you that you are an important part of Florida’s strategy to reduce nonpoint source pollution. Welcome to the Green Industries Best Management Practices Training Program.



KEEP IT CLEAN...IT MATTERS



To summarize, keep it clean...it matters. Water is the primary mechanism for the transport of dissolved chemicals through the soil. Nonpoint source pollution may not be obvious until a rainfall event occurs, leading to stormwater runoff from roads, parking lots, suburban areas, and farms. As Florida's population has soared, this type of pollution has become an increasingly important issue in the state. So remember, "Let only rain down the storm drain".



This concludes the introduction module of the Green Industries Best Management Practices training program.



GUIDELINES

- Pre-/post-test – before (red) and after (blue) training.
- **30-minute** time limit for both pre-test and post-test.
- **Closed book** – no notes or materials may be used.
- **75%** is minimum passing score (30 out of 40 questions).
- Must use **pencil**.
- Test form must be filled out correctly.

Before we begin, let's review the instructions required to successfully take the pre-/post-test.

- Use the appropriate pre-/post-test – the before training or pretest is Red. The pre-test is designed to provide you, the student, a practice run. It also determines your current knowledge/preparedness for the training. The after training or post-test is Blue. It is most important and required to receive your certificate of completion.
- Time limit for both pre-/post-test is 30-minutes
- This is a closed book test, so no notes or materials may be used
- 75% is passing minimum score (30 out of 40 questions)
- Must use pencil
- Test form must be filled out correctly to avoid delays in grading and posting your certificate of completion.

Do you have any questions?



EXAMPLE TEST FORM

EXAMPLE TEST

Green Industries Best Management Practices

A. CLASS DATE: June 6, 2022

INSTRUCTIONS:

- A. Write today's date at the top.
- B. Print your full name clearly.
- C. Write the first 3 letters of your last name, one letter in each blank. Color in the circle with the matching letter below each blank.
- D. Write your date of birth, putting one number in each small blank. Color in the circle with the matching number below each blank.

The test has 40 questions. For each question, fill in the circle beside the one best answer.

- Fill the circle completely.
- Correct: ● Incorrect: ☒ ☓ ☖
- Do not write or make any other marks on the test.
- Erase completely to change your answer.

B. FULL NAME: John Michael Smith, Jr

C. FIRST 3 LETTERS OF LAST NAME: S M I

D. DATE OF BIRTH: MONTH 04 DAY 01 YEAR 1984

C. FIRST 3 LETTERS OF LAST NAME			D. DATE OF BIRTH		
S	M	I	MONTH	DAY	YEAR
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<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

1. Rain falls to the earth as water.
 - True
 - False
2. Rain is a form of what substance?
 - Soil
 - Water
 - Air
 - Cloud
3. Rain falls from the sky in the form of _____.
 - Ice
 - Fog
 - Liquid
 - Steam
4. The GI-BMP training is a _____ quality program.
 - Fertilizer
 - Mowing
 - Education
 - Water

Here is an example of a properly filled test form. We will now look at each required section to input information.



MARKING INSTRUCTIONS

- Mark only one answer.
- Completely fill in the answer “bubble”.
- Do not make any other marks.
- Erase completely if changing answer.

The test has 40 questions. For each question, fill in the circle beside the one best answer.

- Fill the circle completely.

Correct: ● Incorrect: ✓ ✗ ⊘

- Do not write or make any other marks on the test.
- Erase completely to change your answer.

To ensure proper grading and posting of your score, marking instructions must be followed correctly.

Let's review the necessary steps:

- Completely fill in the “bubble” correct answer
- Mark only one answer
- Erase completely if changing answer
- Do not make any other marks



STEP 1: TODAY'S DATE AND FULL NAME

Month – Day – Year

or

00-00-0000
(06-06-2022)

Management Practices

A. CLASS DATE: June 6, 2022

B. FULL NAME:

John Michael Smith, Jr.

Print your full name

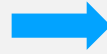
- Must match name on “Training Record” form

Step 1. Write today's date and your full name and at the top of the form. Your name is used to match the test form to the training record, so both pre and post test forms must have the exact same name as on your training record form.



STEP 2. FIRST 3 LETTERS OF LAST NAME

Write first 3 letters of last name



C. FIRST 3 LETTERS OF LAST NAME

S	M	I
---	---	---

Example: for Smith write S M I

Color in the circle that matches the letter above.



C. FIRST 3 LETTERS OF LAST NAME		
(A) (N)	(A) (N)	(A) (N)
(B) (O)	(B) (O)	(B) (O)
(C) (P)	(C) (P)	(C) (P)
(D) (Q)	(D) (Q)	(D) (Q)
(E) (R)	(E) (R)	(E) (R)
(F) (S) <input checked="" type="radio"/>	(F) (S)	(F) (S)
(G) (T)	(G) (T)	(G) (T)
(H) (U)	(H) (U)	(H) (U)
(I) (V)	(I) (V)	(I) (V) <input checked="" type="radio"/>
(J) (W)	(J) (W)	(J) (W)
(K) (Z)	(K) (Z)	(K) (Z)
(L) (Y)	(L) (Y)	(L) (Y)
(M) (Z)	(M) (Z) <input checked="" type="radio"/>	(M) (Z)

Note: If you use two last names, use the letters that come first:

Example: for Garcia Perez write G A R

Next, write the first three letters of your last name in the box. Then for each letter, find the matching letter in the columns under the blank and fill it in.



STEP 3. DATE OF BIRTH

Write your Date of Birth in the blanks.

- 2 numbers for MONTH
- 2 numbers for DAY
- 4 numbers for YEAR

Example: April 1st 1984

Write: 04 01 1984

Below each number, color in the circle with that number.

D. DATE OF BIRTH

MONTH	DAY	YEAR
04	01	1984
<input type="radio"/> 0	<input type="radio"/> 0	<input type="radio"/> 0
<input type="radio"/> 1	<input type="radio"/> 1	<input type="radio"/> 2
<input type="radio"/> 2	<input type="radio"/> 2	<input type="radio"/> 3
<input type="radio"/> 3	<input type="radio"/> 3	<input type="radio"/> 4
<input type="radio"/> 4	<input type="radio"/> 4	<input type="radio"/> 5
<input type="radio"/> 5	<input type="radio"/> 5	<input type="radio"/> 6
<input type="radio"/> 6	<input type="radio"/> 6	<input type="radio"/> 7
<input type="radio"/> 7	<input type="radio"/> 7	<input type="radio"/> 8
<input type="radio"/> 8	<input type="radio"/> 8	<input type="radio"/> 9
<input type="radio"/> 9	<input type="radio"/> 9	<input type="radio"/> 9

To verify your name and reduce duplication, we need your date of birth. Write one number in each blank, then below it color in the circle with the matching number.

For January through September, you will need to put a 0 in front on the number, as in the Example – April is the 4th month, so it is 04. Likewise, if the day is less than 10, you put start with 0 – so the first day of the month is 01.



TEST QUESTION AND ANSWERS

Type of questions to expect:

- True or False
- Multiple Choice: Best or Correct Answer
- Sentence Completion: “Fill in the blank”

For many of you, it may have been years since you have taken this kind of test, so we want to make it easy by going over what to expect.

Today’s test includes the following:

- True or False
- Multiple Choice: Best or Correct Answer
- Sentence Completion: “fill in the blank”



EXAMPLE 1: TRUE OR FALSE

There can only be **one** correct answer.

Testing strategy:

- Assume statements are true unless you know they are false.
- If any part of a statement is false, then the whole statement is false.

1. Rain falls to the earth as water.

- True
 False

http://www.marshall.tstc.edu/welcome/pdf/Strategies_for_True_False_Questions.pdf

For True or False questions, you select one answer from two possible answers.

Testing strategy includes:

- Assume statements are true unless you know they are false.
- If any part of a statement is false, then the whole statement is false.



EXAMPLE 2: MULTIPLE CHOICE

Choose the **one best answer**.

Testing strategies:

- Cover possible answers, read the question, and try to answer.
- Select the option that most closely matches your answer.
- Give each option a “true-false test.”

2. Rain is a form of what substance?

- (A) Soil
- (B) Water
- (C) Air
- (D) Cloud

Multiple choice questions require you to mark the best or correct answer from four choices.

Testing strategies include:

- Cover possible answers, read the question, and try to answer.
- Select the option that most closely matches your answer.
- Give each option a “true-false test”.



EXAMPLE 3: SENTENCE COMPLETION

Pick **one** word or phrase that best completes the statement.

Testing Strategy:

- Give each option a “true-false test”.
- If any part of a statement is false, then the whole statement is false.

3. Rain falls from the sky in the form of _____.

- (A) Ice
- (B) Fog
- (C) Liquid
- (D) Steam

Last, sentence completion or “fill in the blank” questions give a statement with a blank in it. You choose which of the 4 options best completes the statement. You still mark your answer by filling in the circle – don’t write the answer into the blank.

Testing Strategy:

- Give each option a “true-false test”.
- If any part of a statement is false, then the whole statement is false.



QUESTIONS?

This concludes the introduction presentation, please remain in your seats. We will begin the pre test shortly. Do you have any questions regarding the information about the program or test instructions?

This program is funded in part by FDEP with a Section 319 Nonpoint Source Management Program Grant from the U.S. Environmental Protection Agency.



THANK YOU



At this time we will begin the pre test.