

Landscape Practices that Improve Water Quality



Southwest Florida
Water Management District



**TAMPA
BAY
WATER**

Water Quality Impacts from Stormwater Runoff

➤ Nonpoint Source Pollution

Water running off your yard, driveway, and street can carry soil, debris, trash, pet droppings, fertilizer, pesticides, and chemicals that may harm water quality.

Water Quality Impacts from Stormwater Runoff

➤ Soil & Debris (grass/leaves)

- Organic Decay Consumes Dissolved Oxygen
- Soil and Organic Materials Create Sediments

➤ Fertilizers

- Nitrogen & Phosphorus – nutrients for algae and other undesirable plants
- Reduces sunlight needed by seagrasses
- Contaminates Drink Water Sources

Water Quality Impacts from Stormwater Runoff

➤ Pesticides, Herbicides & Other Chemicals

- Toxic to aquatic plants and animals
- Contaminates drinking water sources

➤ Pet Wastes

- Adds significant fecal coliform bacteria to our waters
- May contribute to beach closings/shell fish bans during periods of heavy rain.

Stormwater Runoff

Nonpoint Source Pollution

➤ Reduction and Management

- Non-Structural Prevention Practices**
- Structural Improvements**

Reduction will help prevent pollution of your local watershed, Tampa Bay & the Gulf of Mexico.

Stormwater Runoff

Prevention Practices

- **Fertilize Appropriately**
- **Use Pesticides Responsibly**
- **Dispose of Pet Wastes Properly**
- **Recycle Yard Trimmings, Leaves, & Clippings**
- **Dispose of Household Chemicals Properly**
- **Do not Litter**



Fertilize Appropriately

Over-utilization of fertilizers can be detrimental to your yard and the environment. Use slow-release.

Look for “WIN”,
Water Insoluble
Nitrogen



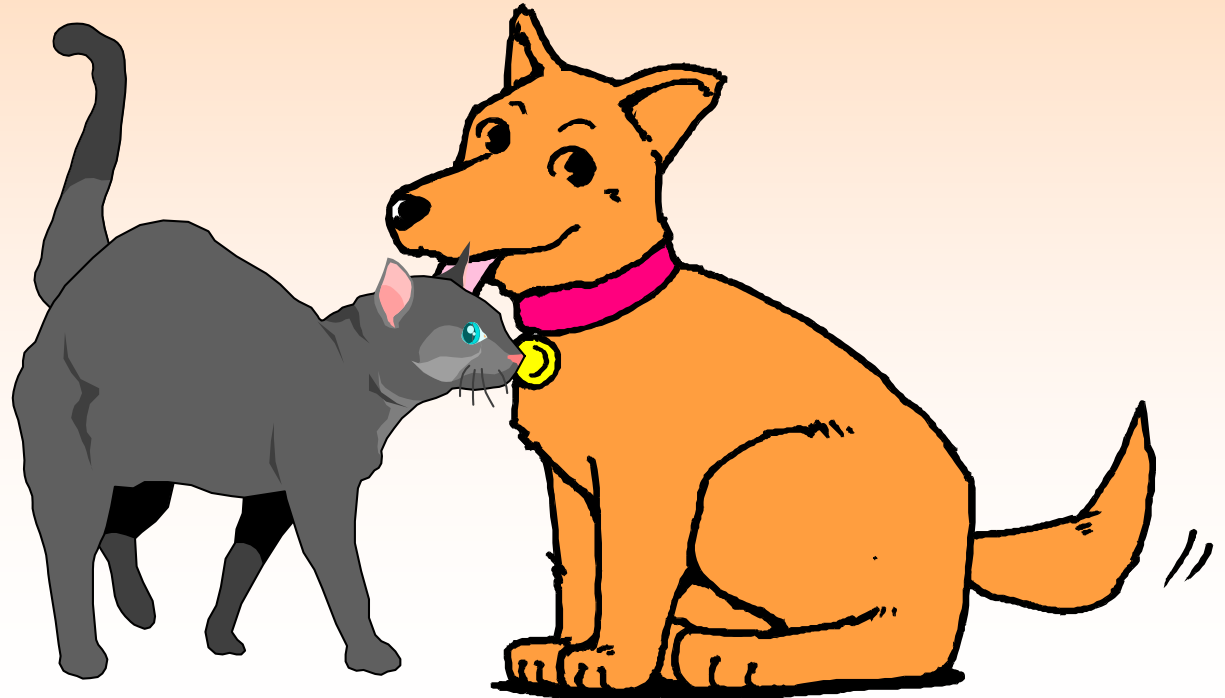
Control Pests Responsibly

Incorrect use & overuse of pesticides can harm people, pets, beneficial organisms, and the environment. Practice IPM.



Manage Pet Wastes

- **Walk Pets in Grassy Areas, then**
- **Collect Waste for Proper Disposal**



Dispose of Yard Wastes Properly

- Do not blow or sweep debris into the street or storm drains
- Recycle - use as mulch or compost



Dispose of Chemicals Properly

- **Paint, solvents, household cleaners, oil, pesticide, fertilizer, etc.**
 - **Never pour old or unwanted chemicals into stormdrain**
 - **Pinellas County Recycling Drop-off Information at 464-7500**

Trash

- **Marine Debris – 92% is from Shoreline and Recreational Activities. Top Ten Items:**
 - Cigarettes/Cigarette Filters
 - Caps & Lids
 - Food Wrappers & Containers
 - Glass Beverage Bottles
 - Beverage Cans
 - Plastic Beverage Bottles
 - Straws & Stirrers
 - Cups/Plates/Forks/Knives/Spoons
 - Bags
 - Cigar Tips

*Source: The Ocean Conservancy,
2003 International Coastal Cleanup,
Florida Summary Report*



Trash

Decomposition Time - Selected Marine Debris

- **Cardboard Box** **2 months**
- **Cotton Rope** **3-5 years**
- **Cigarette Filters** **up to 13 years**
- **Tin Can** **50 years**
- **Styrofoam Cup** **200 years**
- **Aluminum Can** **400 years**
- **Six-pack Ring** **450 years**
- **Disposable Diaper** **450 years**
- **Glass Bottle/Jar** **Undetermined**

Stormwater Management

Structural Improvements –
impact stormwater velocity, quantity,
and quality

- **Swales/Berms**
- **Porous Parking Areas**
- **Retention Ponds**
- **Detention Ponds**

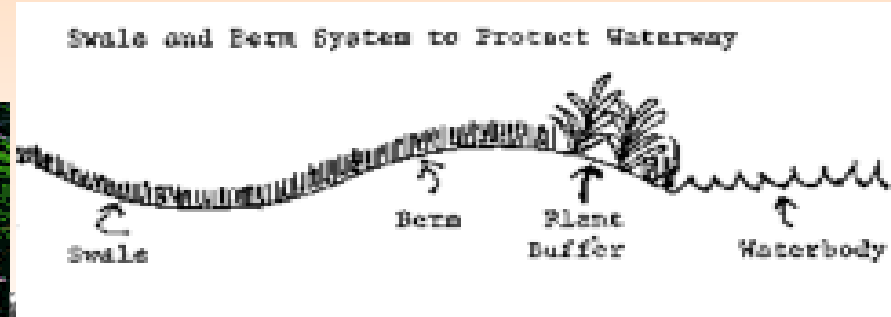


Structural Improvements for Pollution Prevention

- **Swales, Berms, Terracing,
Porus Construction Materials,
Stormwater Ponds, etc.**

Structural Improvements for Pollution Prevention

- Swales, Berms, Depressions, Trenches, Terracing, etc.



Structural Improvements for Pollution Prevention

- **Porous Construction Materials**

- Brick
- Gravel
- Stone
- Mulch
- Porous Concrete



Structural Improvements for Pollution Prevention

- **Make Downspouts Drain to Pervious Areas, use Rainbarrels**



Stormwater Management

Retention Ponds

- Normally dry between storm events
- Water retained on-site (24 hrs) in pond
- Soil beneath is capable of percolation
- Pond stores a specific runoff volume - the first 1/2" of rain over the watershed
- Additional water may go to detention pond or to surface water
- Pollution control
- Ground water recharge

Stormwater Management

Detention Ponds

- Debris storage, temporary water storage, and permanent pool of water
- Water table maintains permanent pool
- Vegetative areas in at least 30% of water
- Downstream water quality is improved
 - Sediment removal before discharge
 - Plant uptake of nutrients
 - Capture/Bio-remediate pollutants

Stormwater Management

Detention Pond - Potential Problems

- **Water quality issues**
 - algal growth, turbidity, cloudy, odors
- **Eroded banks, sparse vegetation**
- **Excessive sediment deposition**
- **Limited biotic community**
 - Habitat
 - Lack of clean water
 - Adjacent expanses of grass is typical

Protecting the Waterfront

Non-Point Source Pollution, whether into a bay, river, stream, pond, or beach, directly impacts the watershed.



With your help, we can have more of these



Protect all of this... Your Watershed!!



You are the solution to pollution.

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