

NONPOINT SOURCES OF WATER POLLUTION: INTRODUCTION OF BEST MANAGEMENT PRACTICES

MS FOOD AND BEVERAGE INDUSTRY WORKSHOP

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LAWS

FEDERAL LEGISLATION



Clean Water Act



Water Quality Standards



Watershed Assessments



National Pollutant Discharge Elimination System
(NPDES)

IMPAIRED WATERS/TMDLS

- IMPAIRED WATERS ARE THOSE NOT MEETING WATER QUALITY STANDARDS AND DESIGNATED USES OF A WATER BODY.
- TOTAL MAXIMUM DAILY LOADS (TMDLS) ARE THE MAXIMUM AMOUNT OF A POLLUTANT LOADING THAT A WATER BODY CAN RECEIVE AND BE HEALTHY.
- WATERSHED POLLUTANT LOADS MUST BE REDUCED TO MEET THE TMDL.



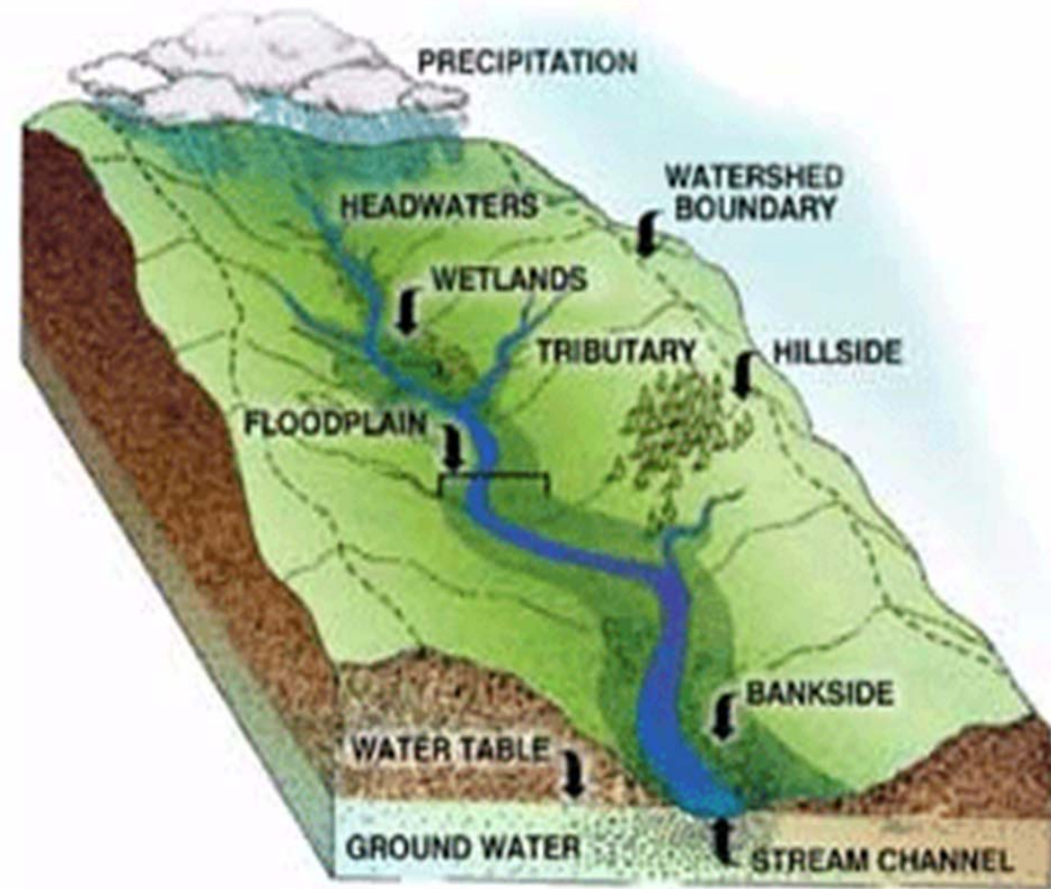
MISSISSIPPI WATERS

- MISSISSIPPI IS FORTUNATE TO HAVE ABUNDANT WATER RESOURCES.
- MS HAS ~ 86,000 MILES OF STREAMS
- WATER IS A NON-RENEWABLE RESOURCE



WE ALL LIVE IN A WATERSHED

- A WATERSHED IS AN AREA OF LAND THAT DRAINS TO A COMMON POINT ALONG A STREAM, RIVER, OR OTHER WATERBODY. “DRAINAGE BASIN”
- OUR ACTIVITIES ON LAND AFFECT THE HEALTH OF OUR LAKES, RIVERS AND STREAMS.
 - **HEALTHY WATERSHEDS:**
 - IMPROVE QUALITY OF LIFE
 - PRESERVE FISH AND WILDLIFE
 - IMPROVE PROPERTY VALUES
 - INCREASE THE POTENTIAL FOR ECONOMIC GROWTH

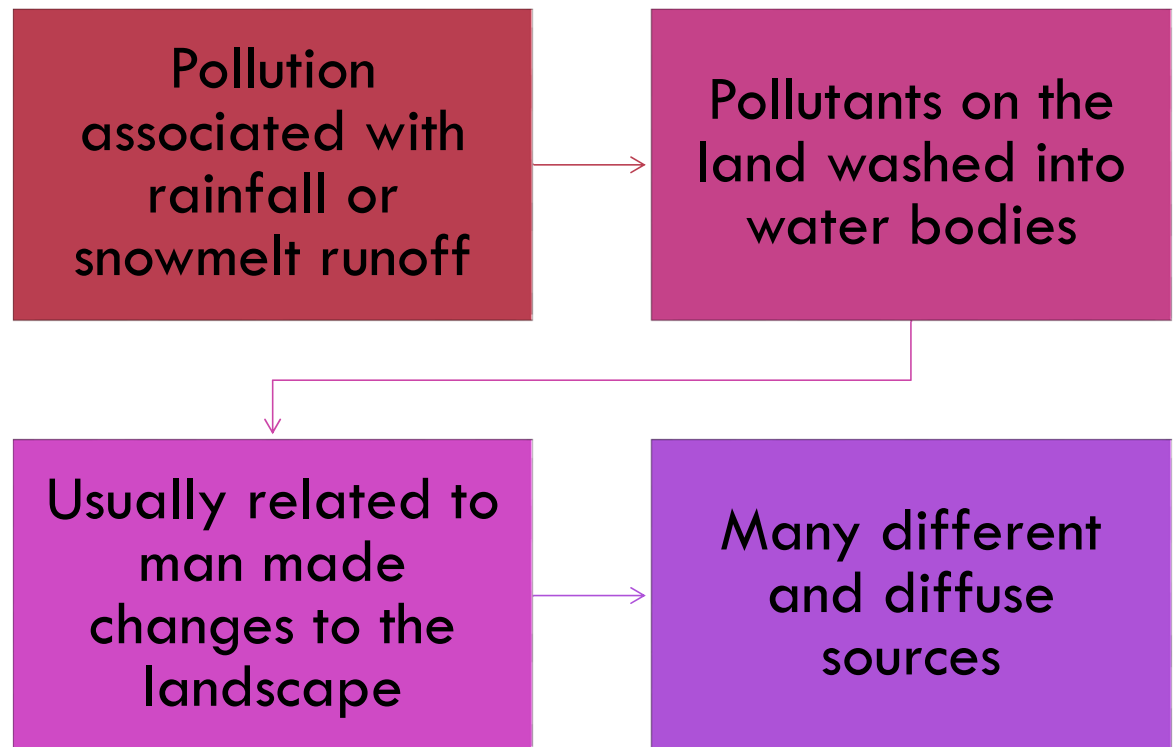


**Conceptual Watershed
Cross Section**



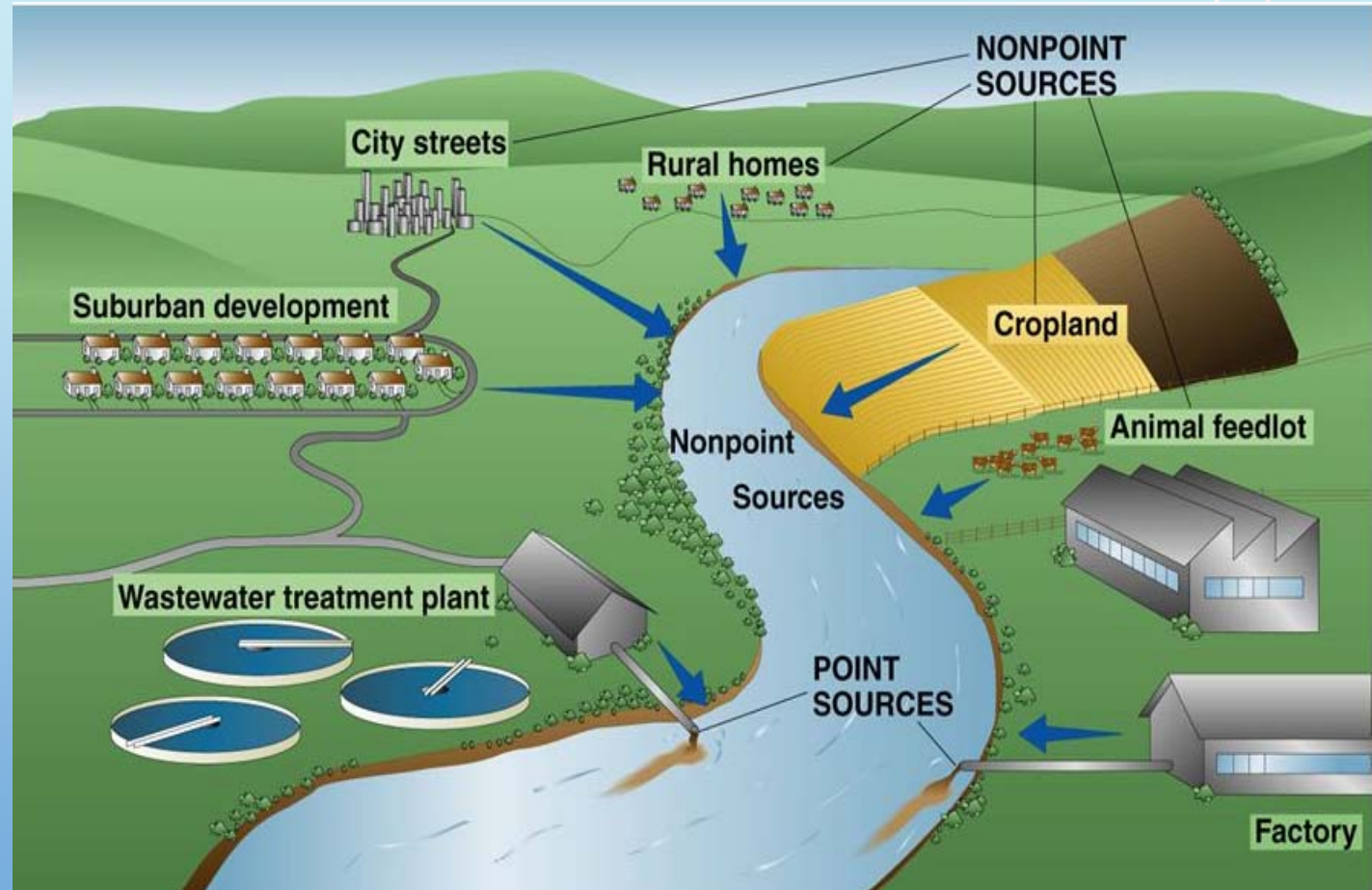
NON POINT SOURCE POLLUTION

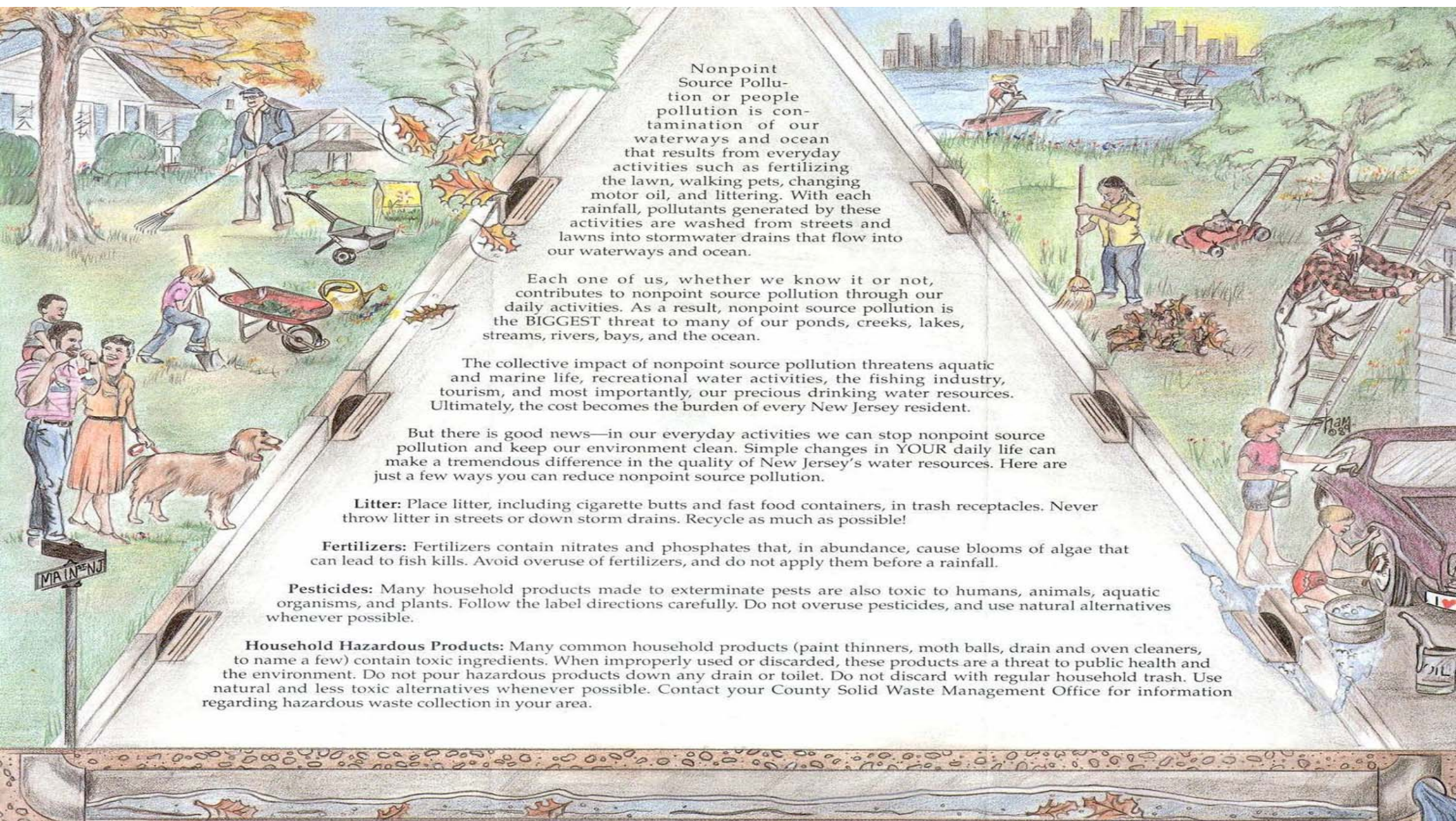
WHAT IS NONPOINT SOURCE POLLUTION



Pollution that cannot be traced to a specific origin or starting point.

WHERE DOES
NONPOINT
SOURCE
POLLUTION
COME FROM?





Nonpoint Source Pollution or people pollution is contamination of our waterways and ocean that results from everyday activities such as fertilizing the lawn, walking pets, changing motor oil, and littering. With each rainfall, pollutants generated by these activities are washed from streets and lawns into stormwater drains that flow into our waterways and ocean.

Each one of us, whether we know it or not, contributes to nonpoint source pollution through our daily activities. As a result, nonpoint source pollution is the **BIGGEST** threat to many of our ponds, creeks, lakes, streams, rivers, bays, and the ocean.

The collective impact of nonpoint source pollution threatens aquatic and marine life, recreational water activities, the fishing industry, tourism, and most importantly, our precious drinking water resources. Ultimately, the cost becomes the burden of every New Jersey resident.

But there is good news—in our everyday activities we can stop nonpoint source pollution and keep our environment clean. Simple changes in **YOUR** daily life can make a tremendous difference in the quality of New Jersey's water resources. Here are just a few ways you can reduce nonpoint source pollution.

Litter: Place litter, including cigarette butts and fast food containers, in trash receptacles. Never throw litter in streets or down storm drains. Recycle as much as possible!

Fertilizers: Fertilizers contain nitrates and phosphates that, in abundance, cause blooms of algae that can lead to fish kills. Avoid overuse of fertilizers, and do not apply them before a rainfall.

Pesticides: Many household products made to exterminate pests are also toxic to humans, animals, aquatic organisms, and plants. Follow the label directions carefully. Do not overuse pesticides, and use natural alternatives whenever possible.

Household Hazardous Products: Many common household products (paint thinners, moth balls, drain and oven cleaners, to name a few) contain toxic ingredients. When improperly used or discarded, these products are a threat to public health and the environment. Do not pour hazardous products down any drain or toilet. Do not discard with regular household trash. Use natural and less toxic alternatives whenever possible. Contact your County Solid Waste Management Office for information regarding hazardous waste collection in your area.

POTENTIAL NPS POLLUTANTS

- OIL & GREASE FROM CARS
- EXCESS FERTILIZERS
- ANIMAL WASTE
- SEPTIC SYSTEM FAILURES
- SEDIMENT
- PESTICIDES, HERBICIDES, INSECTICIDES
- SEWAGE & CLEANERS FROM BOATS
- HOUSEHOLD CLEANING PRODUCTS
- LITTER
- GRASS CLIPPINGS
- TOXIC CHEMICALS



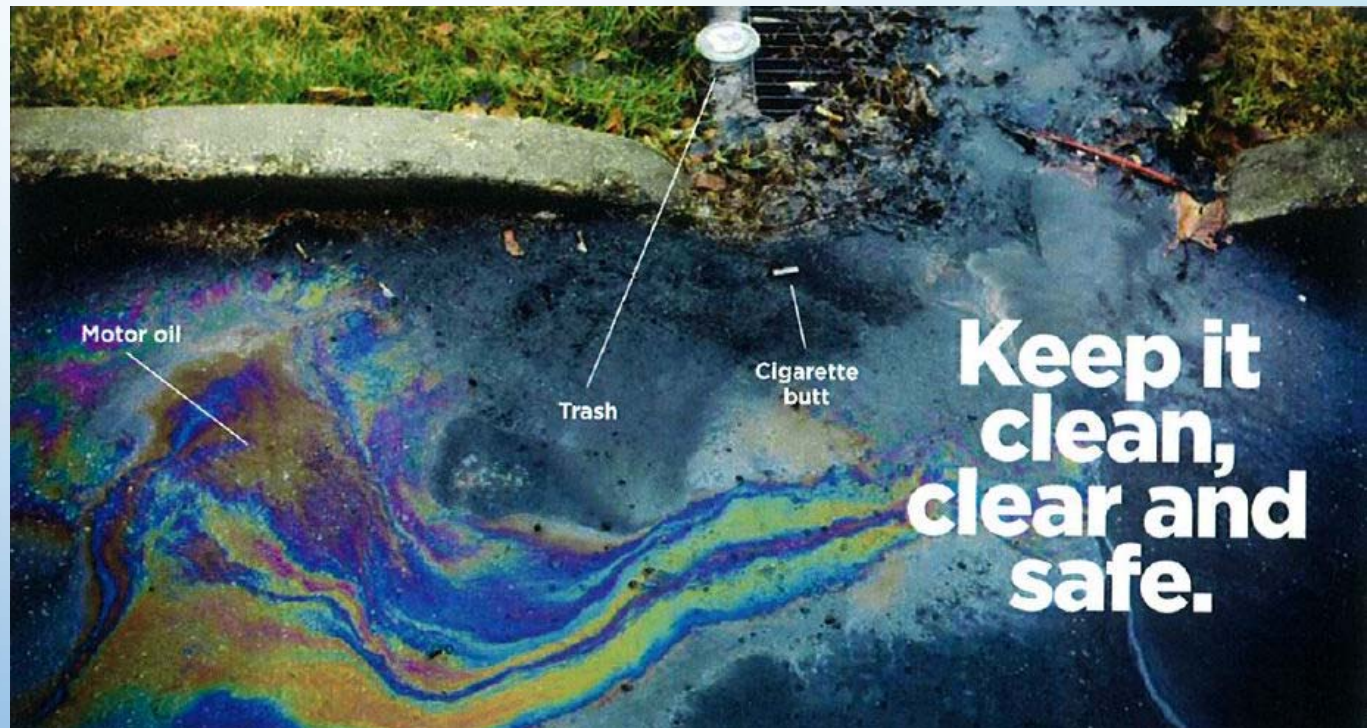
WHAT DOES NPS POLLUTION AFFECT?

- DRINKING WATER
- RECREATION
- FISHERIES
- WILDLIFE



NPS WATER QUALITY IMPACTS


- TURBIDITY
 - LOW VISIBILITY
- LOW DISSOLVED OXYGEN
 - FISH KILLS
- HIGHER NUTRIENTS
 - ALGAL BLOOMS
- FECAL COLIFORM BACTERIA
 - HEALTH RISKS
- HEAVY METALS
 - TOXICITY



IMPERVIOUS SURFACES



STORMWATER RUNOFF

- **STORM WATER** PICKS UP: DEBRIS, CHEMICALS, DIRT, & OTHER POLLUTANTS.
- **POLLUTANTS**  (STORM DRAIN) **ARE DISCHARGED UNTREATED INTO WATER** (LAKES, STREAMS, RIVERS OR COASTAL WATERS) **WE USE FOR RECREATION AND DRINKING**



BEST MANAGEMENT PRACTICES

- BEST MANAGEMENT PRACTICES (BMPS) ARE POLLUTION CONTROL MEASURES DESIGNED TO PREVENT OR REDUCE THE EFFECTS OF POLLUTANTS ON STATE WATERS.
- THESE PRACTICES OR COMBINATION OF PRACTICES ARE:
 - DETERMINED BY THE COORDINATING AGENCIES
 - BASED ON RESEARCH, FIELD TESTING AND EXPERT REVIEW TO BE THE MOST EFFECTIVE, PRACTICABLE AND ECONOMICALLY FEASIBLE FOR IMPROVING WATER QUALITY



Coir Wattles

The background is a light blue gradient with several water bubbles of various sizes scattered across it. The bubbles are rendered with a white highlight and a dark blue shadow, giving them a 3D effect. The text is centered in the middle of the slide.

LEADING CONTRIBUTORS OF NONPOINT SOURCE POLLUTION & BMP PREVENTION



Before



After

AGRICULTURE

POULTRY



Dry Stack Building for Poultry Litter



CONSTRUCTION



CONSTRUCTION

CONSTRUCTION BMP



URBAN STORMWATER RUNOFF



PELAHATCHIE BAY – ROSS BARNETT RESERVOIR



PARKING LOTS



GREEN PARKING LOTS



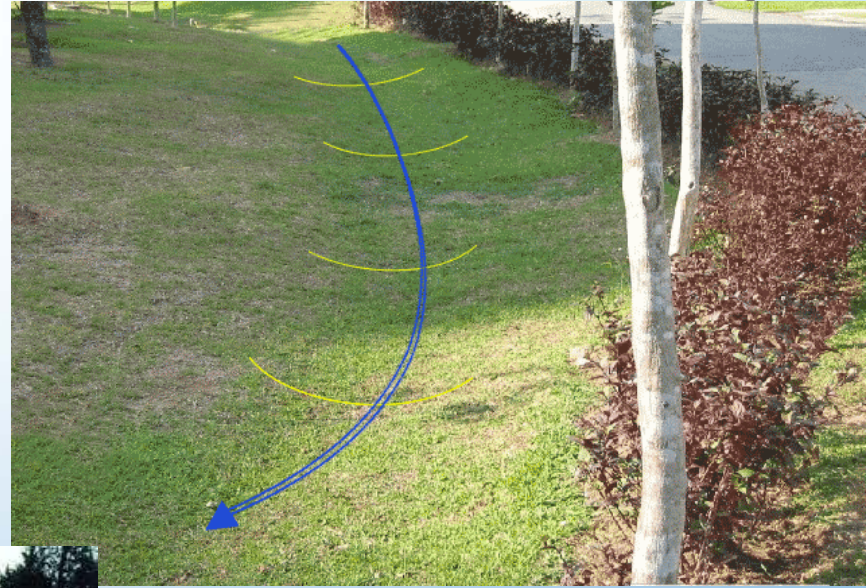


SWALES

Granite Rip Rap Rock Drainage Swale



Grassed Swale



Grass Swale with Check Dams





EROSION

EROSION CONTROL- GABIAN BASKETS



EROSION CONTROL-RIP RAP



EROSION CONTROL-GREEN PRACTICES



Brush Layering



Coir Logs

HYDROSEEDING



INDUSTRIAL WASTE



FOOD AND RESTAURANT POLLUTION PREVENTION



FOOD AND RESTAURANT POLLUTION PREVENTION

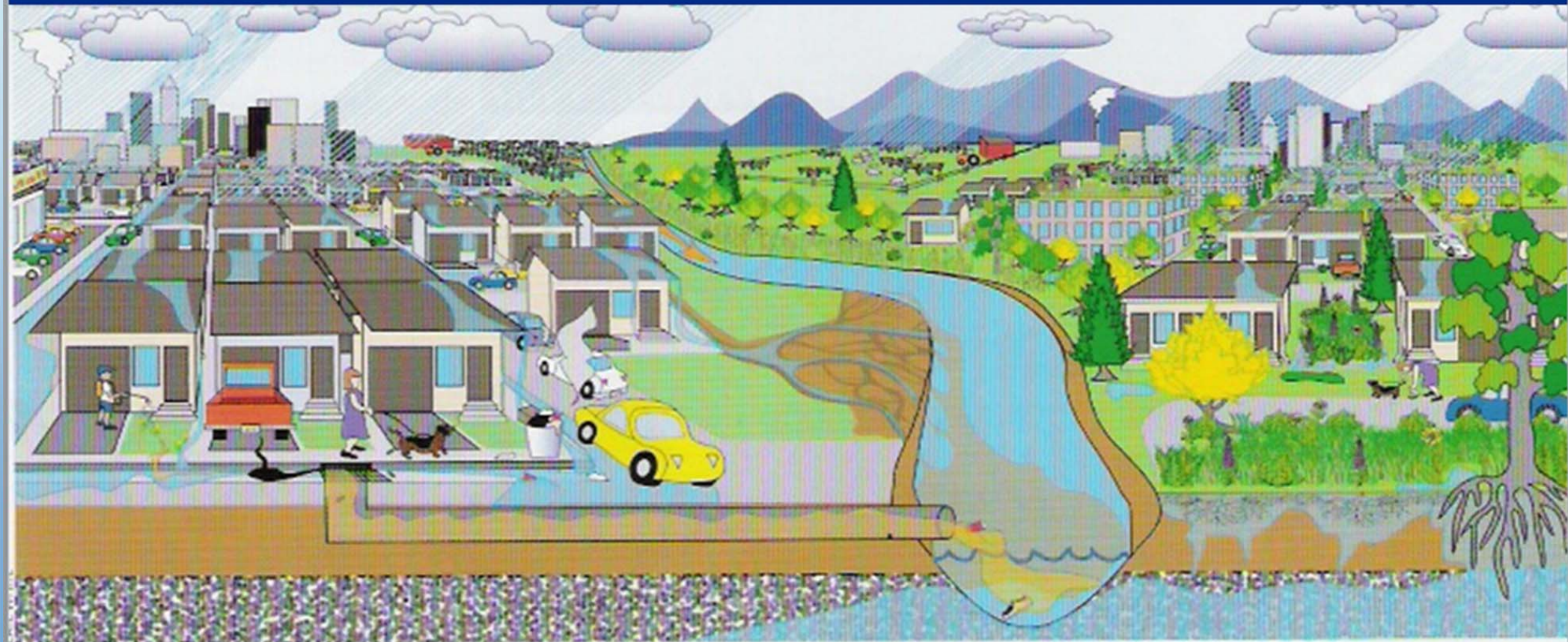


ONSITE WASTEWATER SYSTEMS



How does pollution move in our watershed?

- Oil, antifreeze, gas, detergents, pesticides, pet wastes



DEFINE YOUR WATERSHED ADDRESS

- **ACTIVITY:** USE THE INTERNET TO DETERMINE THE STREAM TO WHICH THE FACILITY ULTIMATELY DRAINS TO, AS WELL AS THE LARGER WATERSHED IN WHICH IT RESIDES
 - GOOGLE EARTH TO FIND LOCATION OF THE FACILITY IN RELATION TO NEAREST STREAM AND WATERSHED
 - DO A WEB SEARCH TO IDENTIFY LOCAL OR REGIONAL WATERSHED GROUPS
 - CONTACT THEM TO LEARN MORE ABOUT KEY WATER QUALITY AND HABITAT ISSUES



ENCOURAGE EMPLOYEE STEWARDSHIP

- **ACTIVITY:** INVOLVE EMPLOYEES TO INCREASE STORMWATER POLLUTION PREVENTION
 - INCLUDE THEM IN ASSESSMENTS
 - ENCOURAGE PERSONAL STEWARDSHIP
 - PROVIDE INCENTIVES
 - CREATE AN INVENTORY OF STORMWATER POLLUTION HOTSPOTS
 - CREATE TIMELINE FOR INSPECTIONS



PREVENT RUNOFF FROM OUTDOOR STORAGE

- **ACTIVITY:** WALK THE SITE TO LOOK FOR MATERIALS STORED OUTSIDE ON A TEMPORARY OR PERMANENT BASIS THAT COULD COME INTO CONTACT WITH RAINFALL
 - **WHAT CAN YOU DO?:**
 - PLACE MATERIALS ON PALLETS
 - TEMPORARY COVER
 - SECONDARY CONTAINMENT AND BERMS
 - NO STREAK OR STAIN LINES ON WAY TO STORM DRAIN





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THANK YOU!!!

Water Quality! It's not our Goal, It's Our Future!

