

February 11, 2015

Warm-Up

Today you will need your notebook and pencil.
 Computer Lab Tomorrow! HW an Test Corrections due Thursday.

- **Create:** Make a list of as many types/forms of water pollution that you can think of!

Possible Answers:

- **PS:**
 - Oil Spills, pipe leaks, sewage leaks, waste from a factory, thermal pollution
- **NPS:**
 - Excess fertilizers, herbicides and insecticides from agricultural lands and residential areas
 - Oil, grease and toxic chemicals from urban runoff and energy production
 - Sediment from improperly managed construction sites, crop and 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


Point Source & Non-Point Source Pollution

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Point Source Pollution

- **Defined:**
 - Any single identifiable source of pollution from which pollutants are discharged
- **Examples:**
 - Pipe leak, oil spill, waste from a factory

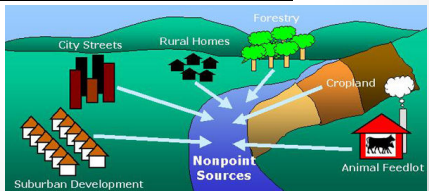
You can label the exact "point" of the problem!



Non-Point Source (NPS) Pollution

- **Defined:**
 - Where there is no single point of pollution
- **Example:**
 - Runoff from rainfall or snowmelt that picks up contaminants on route to water sources

Pollution comes from all over, cannot label a single starting point.



Let's Go Back To Our List!

Non-Point Source

Point Source

Set-Up Your Whiteboards!

Most Common Types of NPS:

1. Sediments
2. Fertilizers/ Nutrients
3. Petroleum (oil) Products



Sediments

- **Sediments** can come from:
 - construction sites
 - poorly managed farmlands
 - logging sites
 - eroded stream banks
- Damage to
 - aquatic life by clogging gills of fish
 - fill in pore spaces taking away homes of macroinvertebrates
 - harbor nutrients that cause **algae blooms**
- Sediments also **increase turbidity**



Fertilizers/Nutrients

- Excessive nutrients can be the result of:
 - Improper disposal of human/pet waste
 - Runoff from farmlands, lawns or gardens
- When it rains, excess fertilizers can run into streams and storm drains
- Applying fertilizer in the minimum amount necessary, or fertilizing with compost from recycled animal waste help control nutrient levels



NPS Are Very Common

- However, we don't see this in the news!

'Neighbor cited for dumping used motor oil down the drain!'

Read all about it!

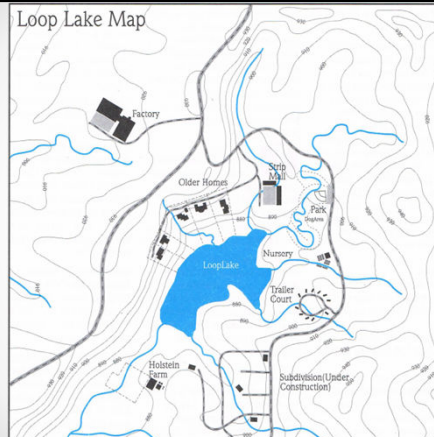
- Because we all contribute to the problem
- We can all contribute to the solution as well



Today's Lab!

- **The Problem:**
- Determine the cause of the pollution at Loop Lake and decide whether it is from a point or non-point source
- **Directions:**
- Part 1: Use the expo marker to draw on your map
- Part 2: Read the story in your baskets
- Part 3: Graph "Water Quality Data" on your page
- Part 4: Write and share your conclusions with your group

Turn In at the End of Class!



Demonstration of NPS

- How does this demonstration illustrate non-point source solution?

Helpful Reminders

- Tomorrow we are in the computer lab.
- Did you turn in your biotic index card lab?
- Don't forget that Homework 3 and Test Corrections are due tomorrow