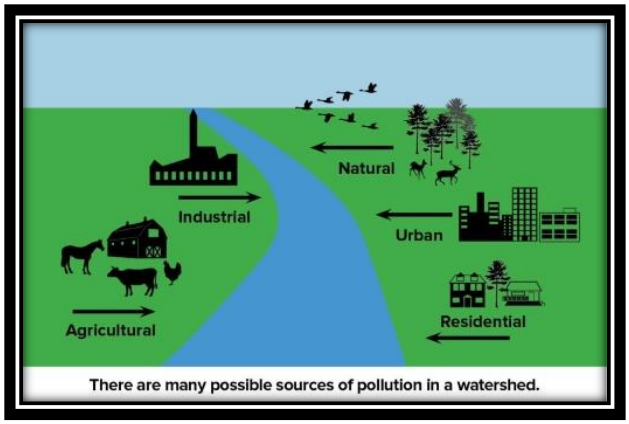
Non-point Source Pollution



NPS pollution generally results from land runoff, precipitation, atmospheric deposition, drainage, seepage or hydrologic modification. NPS pollution, unlike pollution from industrial and sewage treatment plants, comes from many diffuse sources. NPS pollution is caused by rainfall or snowmelt moving over and through the ground. As the runoff moves, it picks up and carries away natural and human-made pollutants, depositing them into lakes, rivers, wetlands, coastal waters and ground waters.

Nonpoint source pollution can include:

- 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
- Atmospheric deposition and hydromodification

States report that nonpoint source pollution is the leading remaining cause of water quality problems.

Nonpoint source pollution not only affects ecosystems; it can also have harmful effects on the economy. U.S. Coastal and marine waters support millions of jobs, generate billions in goods and services through activities like shipping, boating, and tourism, and contribute billions to the U.S. economy through recreational fishing alone. If pollution leads to mass die-offs of fish and dirty-looking water, deep financial losses often result.

Nonpoint source pollution affects the beauty and health of coastal lands and waters. If the physical and environmental well-being of these areas is diminished, people will naturally find it less appealing to visit the coast. Beaches will not provide the tranquility and leisure activities many people expect to experience. You can see how nonpoint source pollution plays an indirect, though powerful role in tourists' contributions to a coastal community's economic status.

What You Can Do to Prevent Nonpoint Source Pollution

Urban | **Mining** | **Forestry** | **Agriculture**

Urban Stormwater Runoff

- Keep litter, pet wastes, leaves and debris out of street gutters and storm drains—these outlets drain directly to lake, streams, rivers and wetlands.
- Apply lawn and garden chemicals sparingly and according to directions.
- Dispose of used oil, antifreeze, paints and other household chemicals properly—not in storm sewers or drains. If your community does not already have a program for collecting household hazardous wastes, ask your local government to establish one.
- Clean up spilled brake fluid, oil, grease and antifreeze. Do not hose them into the street where they can eventually reach local streams and lakes.
- Control soil erosion on your property by planting ground cover and stabilizing erosion-prone areas.
- Encourage local government officials to develop construction erosion and sediment control ordinances in your community.
- Have your septic system inspected and pumped, at a minimum every three to five years, so that it operates properly.
- Purchase household detergents and cleaners that are low in phosphorous to reduce the amount of nutrients discharged into our lakes, streams and coastal waters.

Mining

- Become involved in local mining issues by voicing your concerns about acid mine drainage and reclamation projects in your area.

Forestry

Use proper logging and erosion control practices on your forest lands by ensuring proper construction, maintenance, and closure of logging roads and skid trails.

- Report questionable logging practices to state and federal forestry and state water quality agencies.

Agriculture

- Manage animal waste to minimize contamination of surface water and ground water.
- Protect drinking water by using less pesticides and fertilizers.
- Reduce soil erosion by using conservation practices and other applicable best management practices.
- Use planned grazing systems on pasture and rangeland.
- Dispose of pesticides, containers, and tank rinsate in an approved manner.

- **Buffer strips** are strips of grass located between and around impervious paving materials such as parking lots and sidewalks, and a body of water. The buffer strip absorbs soil, fertilizers, pesticides, and other pollutants before they can reach the water.
- **Retention ponds** capture runoff and stormwater. Sediments and contaminants settle out of the water when they are trapped in the retention pond.
- **Constructed wetlands** are a recent innovation in which an area is made into a wetland; the land is then used to slow runoff and absorb sediments and contaminants. The constructed wetland also provides habitat for wildlife.

- **Porous paving materials** are used in parking lots and highways. The porous pavement allows rainwater and stormwater to drain into the ground beneath it, reducing runoff. In some cases, there is also a stone reservoir underneath the pavement to allow filtration of the water before it reaches the groundwater.
- **Sediment fences**, or knee-high black fabric fences, are often used at construction sites to trap large materials, filter sediment out of rainwater, and slow runoff.
- **Grass planting and laying** of straw around construction sites help reduce runoff and associated nonpoint source pollution.

Agricultural Operations

- **Buffer strips** are planted located between a farm field and a body of water. The buffer strip absorbs soil, fertilizers, pesticides, and other pollutants before they can reach the water.
- **Conservation tillage** involves leaving some crop residue from a previous harvest while planting a new crop. Less erosion occurs because the field is not plowed, and nutrients or pesticides are more likely to stay where they are applied.
- **Crop nutrient management** involves applying fertilizers sparingly to prevent excess nutrient runoff. Prior to the growing season, farmers test the fields to ensure that nutrients are applied only as needed.
- **Beneficial insects** can be used to control agricultural pests, reducing the need for pesticides. Common predators include ladybugs, praying mantises, and spiders, which feed on aphids, mites, and caterpillars. These natural predators help control infestations on valuable crops such as corn, soybeans, and tomatoes.