

Draining to the Ocean: The Effects of Stormwater Pollution on Coastal Waters

Significant Pollutants Found in Urban Stormwater

by Ted Morton, December 1997

| Contaminant | Major Sources | Effects |
|---|--|---|
| Nutrients Nitrogen Phosphorus | Fertilizers Animal waste Detergents Atmospheric deposition Leaking sewage pipes | Lowers oxygen levels Destroys habitat Promotes algal blooms Limits recreation Interferes with navigation |
| Pathogens Bacteria Viruses | Animal waste Illicit connections between storm sewers and sewage lines areas Leaking sewage pipes | Poses human health risks Closes beaches Closes shellfish harvesting |
| Hydrocarbons Oil Grease Petroleum-based products Polycyclic aromatic hydrocarbons (PAHs) | Parking lots Roads Automobile emissions Improper disposal of used motor oil Illicit connections between storm sewer conveyances | Lowers levels of dissolved oxygen Causes toxic impacts Damages habitat |
| Toxic Organics Pesticides Polychlorinated biphenyls (PCBs) | Lawn care Agricultural lands Industrial uses Illicit connections to storm sewer conveyances | Causes toxic impacts Leads to human and animal reproductive abnormalities Increases animal mortality rates |
| Sediments | Construction sites Agricultural lands (cloudiness) Logged forest lands Eroded stream banks | Increases water turbidity Alters water flows Destroys benthic habitat Blocks sunlight Attracts particulate forms of metals and nutrients |
| Metals Lead Copper Cadmium Zinc Mercury Chromium | Illicit sewage connections Automobile usage - emissions, brake pad residues Atmospheric deposition Industrial activities Commercial activities | Increases toxicity of sediment and water column Adds toxics to the food chain Causes genetic defects, reproductive abnormalities and increased mortality rates among fish and wildlife Increases risk of cancer, neurological disorders and birth defects. |