

## APPENDIX B

### Major Categories of Non-point Source Pollutants and Associated Impacts

#### **Sediments**

Source: Construction sites, agricultural lands and other disturbed and/or non-vegetated lands, including eroding stream banks.

Impacts: Once deposited, sediment can decrease the storage capacity of a water body, as well as smother organisms that dwell on the bottom and destroy their habitat. Suspended sediment can lower the transmission of light through water, and interfere with animal respiration and digestion. Contaminated sediments act as a reservoir for particulate forms of pollutants, such as organic matter, phosphorus, or metals that can be released later.

#### **Nutrients (e.g. Phosphorous and Nitrogen)**

Source: Septic systems, fertilizers, animal waste, detergents and plant debris.

Impacts: Slow moving waters become choked with nutrient induced algae and weeds that take up dissolved oxygen in the water needed by fish and other aquatic life. This reduction in dissolved oxygen can also cause pollutants trapped within sediments to be released back into the water column.

#### **Temperature Enhancement**

Source: Impervious surfaces collect heat and warm storm water as it passes over them and into receiving waterways. The creation of storage ponds and impoundments, and the removal of trees and other vegetation that shade streambanks increases the surface area of water exposed to solar heating.

Impacts: Temperature enhancement severely interferes with cold-water organisms such as trout and stoneflies, and may cause their extinction in intensively developed areas.

#### **Toxic Compounds**

Source: Pesticides, Road de-icing materials, motor vehicles, industrial activities, atmospheric deposition, and illicit dumping and sewage connections.

Impacts: Toxic substances can degrade the appearance of water surfaces, lower dissolved oxygen, stress sensitive flora and fauna and enter into the aquatic food chain.

#### **Bacteria**

Source: Animal waste (including pets and birds), failing septic systems and illicit sewer connections.

Impacts: Increased bacteria levels can pose health risks and close or restrict the use of recreational areas.

#### **Litter and Debris (Organic and non-organic)**

Source: Urban and suburban landscapes contribute grass clippings and leaves. Non-organic debris is generated by careless disposal practices, e.g. street litter.

Impacts: Litter, leaves and trash wash through the storm drain system, clogging pond outlets and creating large debris jams within streams and floodplains. In addition, organic materials require oxygen to decompose and so lower the level of dissolved oxygen available to aquatic life.