

Total Suspended Solids

Total Suspended Solids (TSS) refer to the sediments in water that could be caught in a filter. Silt, soil erosion, decaying organic material, sewage, as well as agricultural, urban, and industrial wastes all contribute to TSS levels in water. Total suspended solids in water are often associated with excessive amounts of nutrients and harmful bacteria that can attach themselves to sediment. Heavy rainfalls pick up these sediments which run off into surface water. High concentrations of these sediments are problematic for the health and quality of aquatic systems.



Variations of total suspended solids (Fondriest Environmental Inc., 2014)

Problems

Aquatic plants are affected by solids that block the light from reaching them, which is needed for photosynthesis (Murphy 2007). If TSS accumulate in surface waters and block sunlight, the plants can not undergo photosynthesis, can no longer produce oxygen, and die. Fish are greatly effected by the decreased levels of oxygen that takes place after aquatic plants die. In addition, suspended sediments can clog fish gills, make them more prone to disease, and prevent egg development. TSS accumulation in surface water also reduces the amount of storage capacity for these streams and water bodies to capture and store runoff. If storage capacity is reduced, areas near the surface water are more prone to flooding.

The USEPA does not specify standards for TSS in the drinking supply, although the contaminants which are able to dissolve and infiltrate into our drinking supply by sediments should be looked at and managed to protect overall human health.

Solutions

Water quality management of sediment and contaminants should be revised and implemented in sensitive areas heavily used by people. In addition to conservation best management practices, local communities and organizations can raise awareness to clean and protect water bodies that have already been afflicted by high levels of sedimentation. Implementing projects that increase the growth rates of fish populations, revitalize aquatic plant life, or remove and redirect TSS.

