

Water Quality Parameters Analyzed in the McKenzie Watershed

The focus of this series is on some of the water quality parameters analyzed in the McKenzie River Watershed. Anyone interested in learning more or volunteering for water quality efforts is encouraged to contact the MWC at (541)687-9076.

Total Suspended Solids

As the name indicates, total suspended solids (TSS) is a measure of the amount of solid or particulate matter suspended in a solution. Total suspended solids differ from turbidity by the fact that they will settle out of solution when the water is not flowing.

TSS is a measure of the solids that can not pass through a filter with pores of a given size (typically 10.0-1.5 micron). In general, the high the amount of suspended solids, the greater the possibility of disturbance or erosion somewhere in the system. High solids in drinking water will have a bad taste. In addition, high solids makes chlorination less affective, thus requiring more chlorine to disinfect the water.

TSS cause the same problems as turbidity. Also, tiny share particles in the water can scrape gills on aquatic animals; they can smother fish eggs in spawning gravels; and frequently they contain excess nutrients like phosphorus or toxins like pesticides or heavy metals that disturb biological cycles

Causes:

- Frequently, high total suspended solids has the same causes as turbidity.
- Algal growth can be a source of TSS.
- TSS can come from erosion from agricultural fields or roads.
- Streambanks or landslides entering the stream are a direct cause of high total suspended solids.
- An urban source of TSS is runoff from hard surfaces like parking lots and roof tops.
- TSS can result from construction-related erosion.
- Sometimes particles are resuspended from the bottom of stream channels or ponds.
- Some of the TSS is organic, like leaf pieces and algal cells; some is inorganic, like clays.

Student Watershed Research Project: A Manual of Field and Lab Procedures. 3rd Edition, 1996. A Saturday Academy Publication Oregon Graduate Institute of Science and Technology.