**Turbidity**

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| Day 1 | Day 2 | Day 3 | Day 4 | Day 5 | Day 6 | Day 7 | Day 8 | Day 9 | Day 10 | Day 11 | Day 12 |
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**WHAT IS TURBIDITY?**

Turbidity measures the degree of light traveling through water that's scattered by the suspended organic and inorganic particles. In other words, it's the cloudiness of the water. The amount of light let in may determine many things. Limited light penetration might limit plant growth, which in turn affects the fish and things that thrive off of those plants. Turbidity is usually measured in Nephelometric Turbidity Units (NTU), but can be measured in Jackson Turbidity Units (JTU). Turbidity is caused by silt, chemicals, microorganisms, and plant material. On the other hand, the most frequent causes of turbidity are algae and inorganic material from soil weathering and erosion.

**WHY IS TURBIDITY IMPORTANT?**

The velocity of the water largely determines the make up of the suspended load that's carried in both the slow and fast currents in water. High levels of turbidity will cause the water to lose its ability to support a large variety aquatic organisms. Where there is less light entering the water, there will be less photosynthesis which reduces the level of oxygen in the water. In addition, high levels of turbidity will cause the water to become warmer (suspended material absorbs heat from the sun) and this also will decrease dissolved oxygen levels in the water.

**INSTRUCTIONS TO FIND TURBIDITY:**

Turbidity is normally measured by an instrument called a Nephelometer which determines the scattering of light and is measured in standard Nephelometric Turbidity Units (NTU). Normal levels of turbidity can range from >1 in clear streams to greater than 200 NTU in murky waters after floods.

Obtain a proper kit and a schecci disc

Get a water sample in the given vial and place it in the kit to compare.

Place the schecci disc in the water as a control, place it about a meter deep

Look at the color and note which one it comes closest to, that is your turbidity reading

**HEALTH EFFECTS:**

Turbidity can be composed of organic and/or inorganic components. Organic particles may harbor microorganisms. Thus, turbid conditions may increase the chances for waterborne disease. Inorganic components have no significant health effects.

**INSDUSTRIAL EFFECTS:**

Turbid water may not be suitable for industrial uses or processes. A high amount of suspended solids may clog pipes and/or machinery.

**RECREATIONAL EFFECTS:**

Water with high turbidity might be hazardous to swimmers and boaters. Turbidity may hide potentially dangerous objects hiding in the water like logs or rocks. The organic material of turbid waters may cause higher concentrations of bacteria and viruses.

**ENVIRONMENTAL EFFECTS:**

Changes in turbidity can alter the make up of the aquatic habitat. First, turbidity will reduce light entering the water, suppressing photosynthetic activity of algae and other plants. If turbidity is largely due to algae, light can't penetrate very deep into the water, and primary production will be limited to the upper layers of water. Excess turbidity leads to fewer photosynthetic organisms present to serve as food sources for other organisms and animals. Because of this, those animals and organisms that feed off of that photosythetic material will decline which could lead to decrease in the fish popluation. In addition, dissolved oxygen levels may decline. The excess nutrients available will promote microbial breakdown, a process needing dissolved oxygen. Furthermore, excess nutrients could result in more algae growth.

**TURBIDITY SOURCES:**

Turbidity is due to silt, clay, and other organic material given off by rains, and land overflow. Furthermore, turbidity is often caused by excessive phytoplankton production which is heightened when nutrients are released from bottom sediments during seasonal changes and water current changes. High sediment inputs also contribute to murky waters and therefore high turbidity levels.

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