

## Presentation Notes

Presentation Understanding water qualityLesson 4.3

Notes from Presentation:

### Source and purpose

- Indicators of water quality vary based on the water source and purpose.
- Lakes and streams
  - Aquatic life
  - Monitored by USGS
  - Based on water quality index (WQI)
- Drinking water
  - Human health and safety
  - Monitored by EPA and local agencies
  - Based on drinking water standards

### Quality Indicators

- Temperature
  - o Cooler stream water is typically considered healthier
  - o Factors affecting water temperature
    - Air temperature, amount of shade, soil erosion increases turbidity, thermal pollution from human activity, confluence
  - o Effects of water temperature
    - Solubility of dissolved oxygen, rate of plant growth, metabolic rate of organisms, resistance
- pH
  - o Range of 6.5 to 8.2 is optimal for most organisms
  - o Factors affecting pH levels
    - Acidic rainfall, algal blooms, hard-water minerals, releases from industrial processes, acids produced in decomposition and respiration
- Turbidity
  - o A measure of water clarity
    - Cause of turbidity: soil erosion, urban runoff, industrial waste, organic materials, bottom-dwelling fish
    - Effects of turbidity: reduced water clarity, unattractive, decrease photosynthesis, increase temperature
- Total Solids
- Dissolved oxygen
  - o Necessary for respiration of aquatic life
  - o Factors affecting DO levels: temperature, aquatic plant populations, decaying organic material, stream flow, altitude/atmosphere pressure, human activities
  - o Sources of DO: diffusion from atmosphere, aeration as water moves over rocks and debris, aeration from wind and waves
  - o Measures ability of dissolved salts to conduct a current
    - Sources of TDS: fertilizer and urban runoff, salinity, acid rainfall, hard-water or limestone minerals
    - Effects of high TDS: dehydration of animals, mineral taste, change pH
- Biochemical oxygen demand

- Phosphates
- Nitrate
- Fecal Coliform
- Ammonium
- Alkalinity
- Total dissolved solids
- Calcium Hardness
- Total Hardness
- Chloride/Salinity
- Stream flow

# AFNR Reflection Page

List five key points that are important to remember from this presentation.

1. Quality Indicators
2. Types of quality indicators
3. Drinking water quality
4. Quality of water purpose
5. Quality of water source

List three ideas or concepts that this new information has in common with previous things learned.

1. Drinking water monitored by EPA and local agencies is necessary for human health.
2. PH level is a type of quality indicator.
3. Air temperature can effect water temperature.

List questions or ideas that remain unclear about the information presented that should be asked for clarity at the appropriate time.

N.A.