



# Total Nitrogen

**Total Nitrogen** is an essential nutrient for plants and animals. However, an excess amount of nitrogen in a waterway may lead to low levels of dissolved oxygen and negatively alter various plant life and organisms. Sources of nitrogen include: wastewater treatment plants, runoff from fertilized lawns and croplands, failing septic systems, runoff from animal manure and storage areas, and industrial discharges that contain corrosion inhibitors.



*Storm runoff from a cattle operation can increase Total Nitrogen levels in a water body.*

**Understanding Total Nitrogen:** There are three forms of nitrogen that are commonly measured in water bodies: ammonia, nitrates and nitrites. Total nitrogen is the sum of total kjeldahl nitrogen (ammonia, organic and reduced nitrogen) and nitrate-nitrite. It can be derived by monitoring for organic nitrogen compounds, free-ammonia, and nitrate-nitrite individually and adding the components together. An acceptable range of total nitrogen is 2 mg/L to 6 mg/L, though it is recommended to check tribal, state, or federal standards for an adequate comparison of your data.



*Trash areas like this may leach chemicals that can increase Total Nitrogen during a storm event into a water body.*

**Monitoring Equipment:** Depending upon monitoring objectives set forth in an environmental program, the following equipment options are commonly used to collect total nitrogen data from the field.

Readily available and economically priced:

- Total Nitrogen Kits

For each component of total nitrogen, the following can be used and are of greater precision and higher cost:

- Meters
- Multiparameter Probes
- Contract Laboratories (if necessary)

For additional information:

[www.epa.gov/owow/monitoring/volunteer/stream](http://www.epa.gov/owow/monitoring/volunteer/stream)