

# Ackerly Creek Map Water Quality Parameters

**Nitrogen** appears in many forms in the water. It is an important nutrient for plants, but not all forms are equally usable.

- **Nitrite** ( $\text{NO}_2$ ) is usually found in low levels in streams because it is rapidly converted to nitrate ( $\text{NO}_3$ ).
- **Nitrate** ( $\text{NO}_3$ ) is an important nutrient for algae and higher plants. It is a major ingredient in fertilizers for both farm and lawn. It can also find its way into waterways as runoff from farm livestock and leaking septic systems. Excessive amounts can trigger algae or waterweed blooms. Clean waters usually have less than 1.0 mg/L
- **Ammonia** ( $\text{NH}_3$ ) is a toxic form that should be less than 0.1 mg/L in non-polluted waters. At 0.2 mg/L sensitive fish such as trout begin to die.

**Phosphorous** is often the limiting factor in aquatic ecosystems. Plants require their major nutrients in the following ratio: 40 Carbon: 7 Nitrogen: 1 Phosphorus. This makes phosphorous a fertilizer in short supply, and plants will usually respond to increased levels with a rapid increase in growth. Phosphates exist in three forms: orthophosphate, polyphosphate, and organically bound phosphate, each with a different chemical formula. Ortho forms are produced by natural processes and are found in wastewater. Poly forms are used in detergents and can change to the ortho form in water. Organic phosphates are important in nature and also may result from the breakdown of organic pesticides that contain phosphates. Non-polluted waters will have a total phosphorus of <0.1 mg/L. The form most available to plants is orthophosphate that should be present at <0.01 mg/L.