

## Town of Cary Jordan Lake Watershed Urban Transition Buffers

B. Everett Jordan reservoir (Jordan Lake) is a public water supply reservoir which supplies drinking water to Cary, Apex, Morrisville, and other municipalities. The NC Environmental Management Commission (EMC) has classified this lake as impaired under the federal Clean Water Act due to exceedances of the chlorophyll *a* standard. State and Federal laws required the Town of Cary (Town) and other municipalities that drain into the lake to decrease the nutrient loading, specifically nitrogen and phosphorus, which are major contributors to chlorophyll *a*. Therefore, the Town has modified their existing Land Development Ordinance (LDO) to comply with this state mandated legislation to protect existing riparian buffers. This legislation is incorporated into the Town's LDO under Section 7.2.14, Urban Transition Buffers (UTBs).

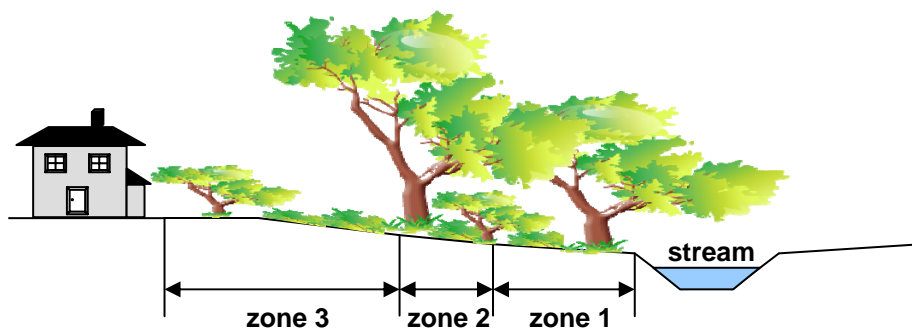
### Chlorophyll *a* and Water Quality

Chlorophyll is a naturally occurring pigment that allows plants, such as algae, to photosynthesize sunlight, thus allowing the plant to grow. Too many nutrients like nitrogen and phosphorus in lake water can create an overabundance of algae growth, spurring algae blooms. While being a nuisance in themselves, algae blooms can result in water quality impairments such as low dissolved oxygen conditions, poor water clarity, and an imbalance in the food chain of the lake. The North Carolina Division of Water Quality (DWQ) uses Chlorophyll *a* concentrations to assess whether Jordan Lake is meeting the State water quality criteria—poor water quality results as chlorophyll *a* concentrations increase.

### What is a Riparian Buffer?

A riparian buffer is the vegetated area adjacent to a stream or other water body that contains a mix of trees, shrubs and other herbaceous vegetation. Its purpose is to protect, or buffer, the effects of the adjacent landuses while serving as a floodplain and habitat for wildlife. The vegetation will help filter out pollutants such as nutrients and sediment while also stabilizing the soil. ***Riparian buffers are essential for protecting our drinking water supply in Jordan Lake.***

The UTB can be broken into three zones as follows:



- **Zone 1** is 30 ft of undisturbed vegetation from the top of bank or edge of water body. Development is severely restricted in this zone.
- **Zone 2** is 20 ft of vegetation from the outer edge of Zone 1. Development restrictions are strict in this area.
- **Zone 3** is 50 ft of vegetation from the outer edge of Zone 2 and development is moderately restricted.

## **The Effects of Development on Jordan Lake**

As development increases in the Jordan Lake watershed, so does the nutrient loading to the surface waters that feed into the lake. As a homeowner, there are several practices that you can adopt to help reduce the nutrients entering streams near your home including reducing runoff from your property:

- Before clearing trees and other vegetation or building any impervious surface within 100 ft of any channel on your property, contact the Town's Stormwater Engineering Department and request a "buffer call".
- Install and/or maintain a vegetated buffer around all surface water including streams, wetlands, ponds, lakes, etc...
- Sweep up excess fertilizer that may land on impervious surfaces such as your driveway and sidewalk.
- Reduce the amount of water leaving your property by using rain barrels and rain gardens.
- Plant vegetation or mulch any bare areas of your landscape to prevent erosion
- Pick up pet waste and dispose of properly
- When irrigating established lawns, water less frequently, but deeply (1 inch of water) to avoid shallow root systems.
- Install and maintain a rain sensor on automatic irrigation systems and adjust sprinkler heads to water only vegetated areas of the yard.
- Before applying fertilizer and lime, submit a soil test to NCDA for a free soil analysis and recommendations based on your soil. Contact your County Cooperative Extension Service for assistance.

For more information or to determine if the activity you are proposing requires a buffer call, contact the Town of Cary's Stormwater Engineering Department:

Jan Patterson, PE, CPESC

Tel: 919-460-4930

E-mail: [jan.patterson@townofcary.org](mailto:jan.patterson@townofcary.org)

Web: <http://www.townofcary.org/Departments/Engineering>

### **Additional Resources for Homeowners:**

Backyard Streambank Erosion:

<http://www.bae.ncsu.edu/resources/PR-info/subject-brochures/backyard-erosion.pdf>

Home\*A\*Syst: Stormwater Management for Homeowners

<http://www.soil.ncsu.edu/assist/homeassist/stormwater/>

Home\*A\*Syst: Improving Lawn Care and Gardening

<http://www.soil.ncsu.edu/assist/homeassist/lawn/>

NC State University has a list of Stormwater related publications on their website that can assist with runoff control; specifically, with installing rain gardens, rain barrels or cisterns.

<http://www.bae.ncsu.edu/stormwater/>