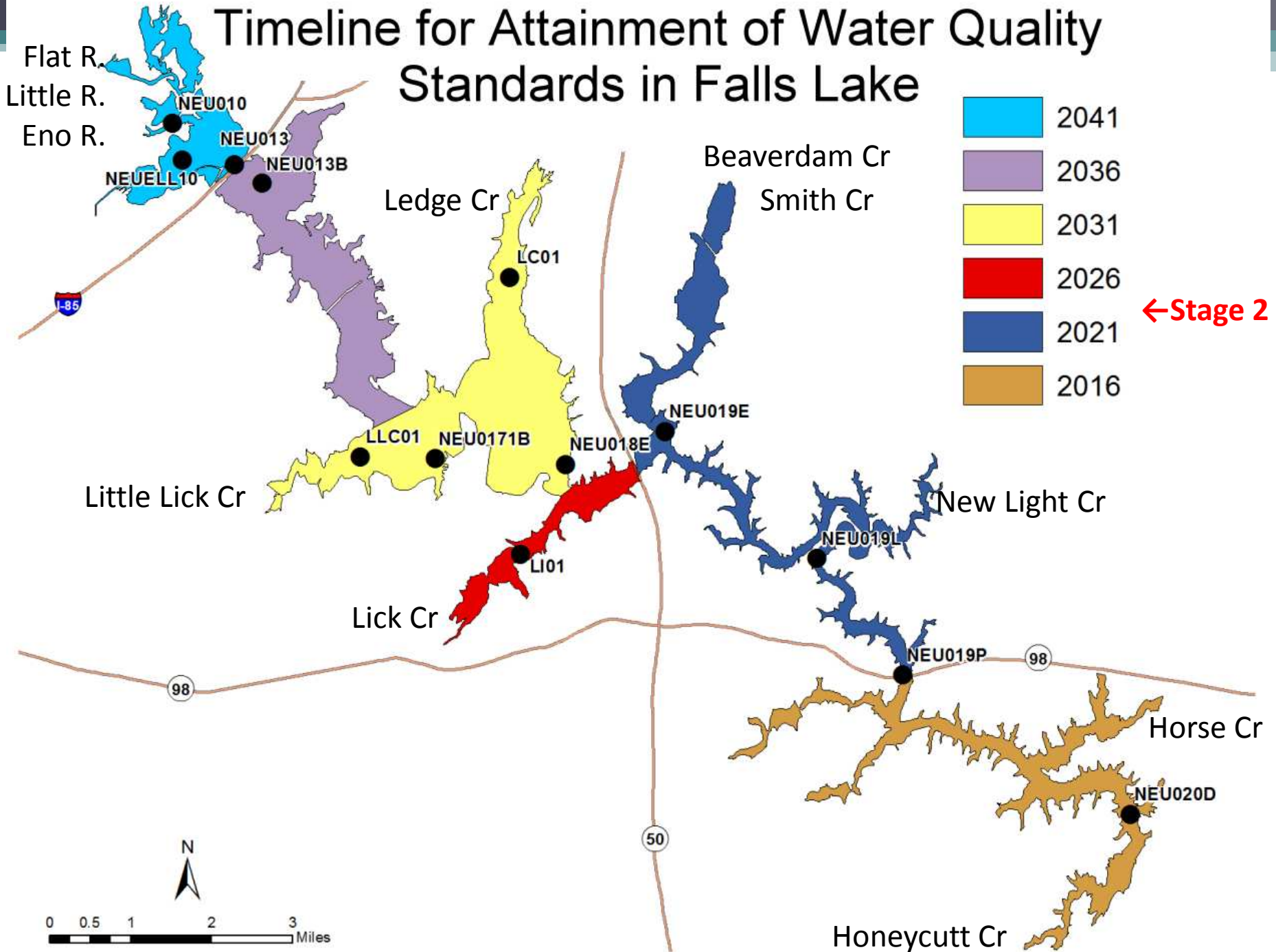


# Falls Lake Chlorophyll Insight for the 2016 NC Water Quality Assessment

Lake Water Quality Data  
2010, 2011, 2012, 2013, 2014  
5 year window

# Timeline for Attainment of Water Quality Standards in Falls Lake



# COMPARE

2014 Integrated Report – 305(b) & 303(d)  
**Predictions** for the 2016 Integrated Report

Chlorophyll results from Lake Monitoring  
2010, 2011, 2012, 2013, 2014  
541 chlorophyll observations

# Assessment Categories

**1** Meeting criteria

**2**

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**3** Inconclusive or No Data

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**4**

**Exceeding Criteria**

***303(d)***  
***List***

**5**

# 2014 assessment categories

- **1b**-supporting standard and management strategy in place.
- **3b1**->10% exceeded standard  
<90% statistical confidence  
management strategy in place
- **4b**- exceeding standard w/ 90% conf.  
management strategy in place

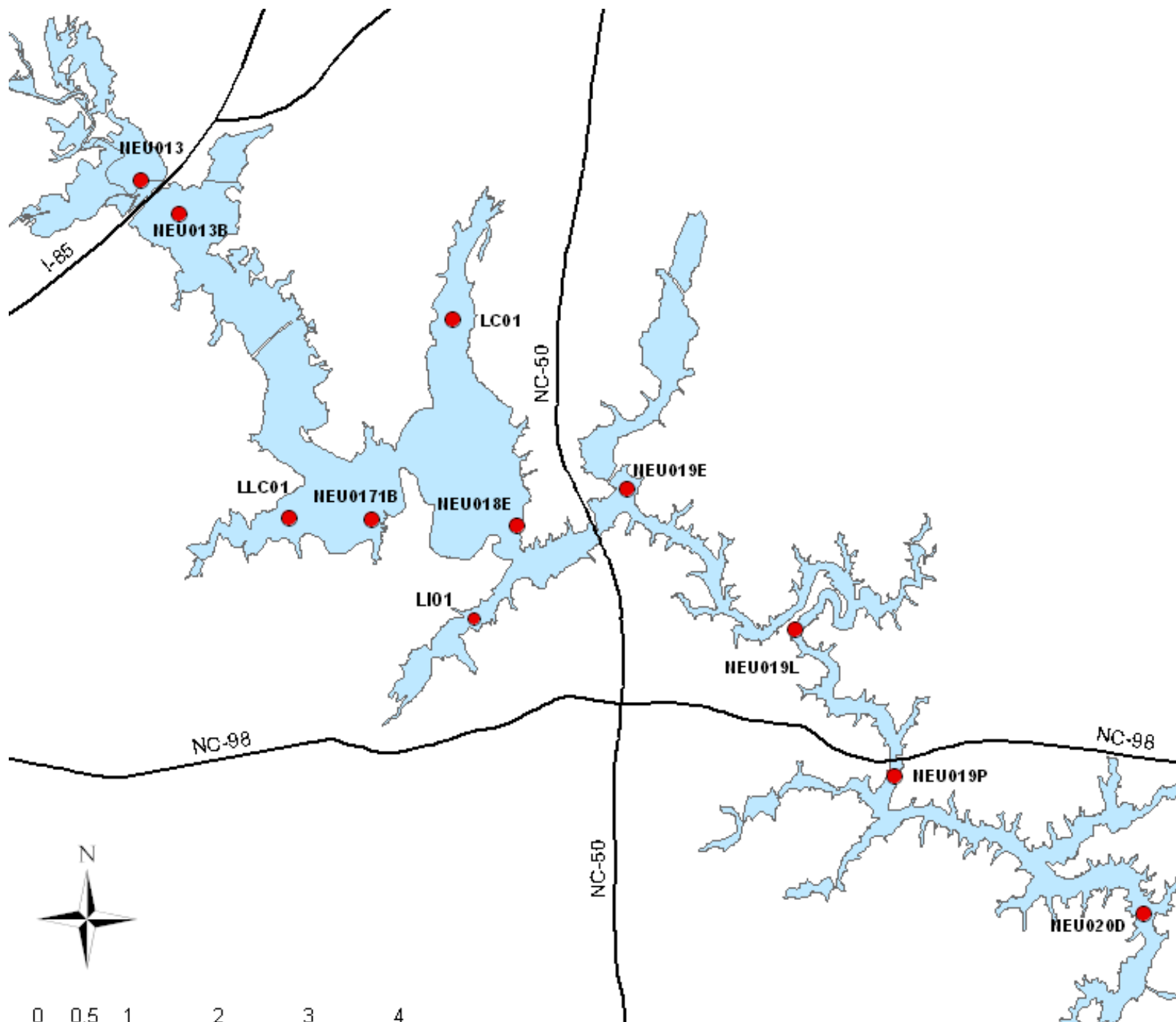
# 2014 Falls Lake IR segments

- from source to I-85 Bridge (1)
- from I-85 Bridge to Panther Creek (1)
- fr Panther Cr Arm to Ledge Cr Arm (2)
- ➔ • Ledge Creek Arm (1)
- ➔ • fr Ledge Cr Arm to Lick Creek Arm (1)
- from Lick Creek Arm to Falls Dam (5)

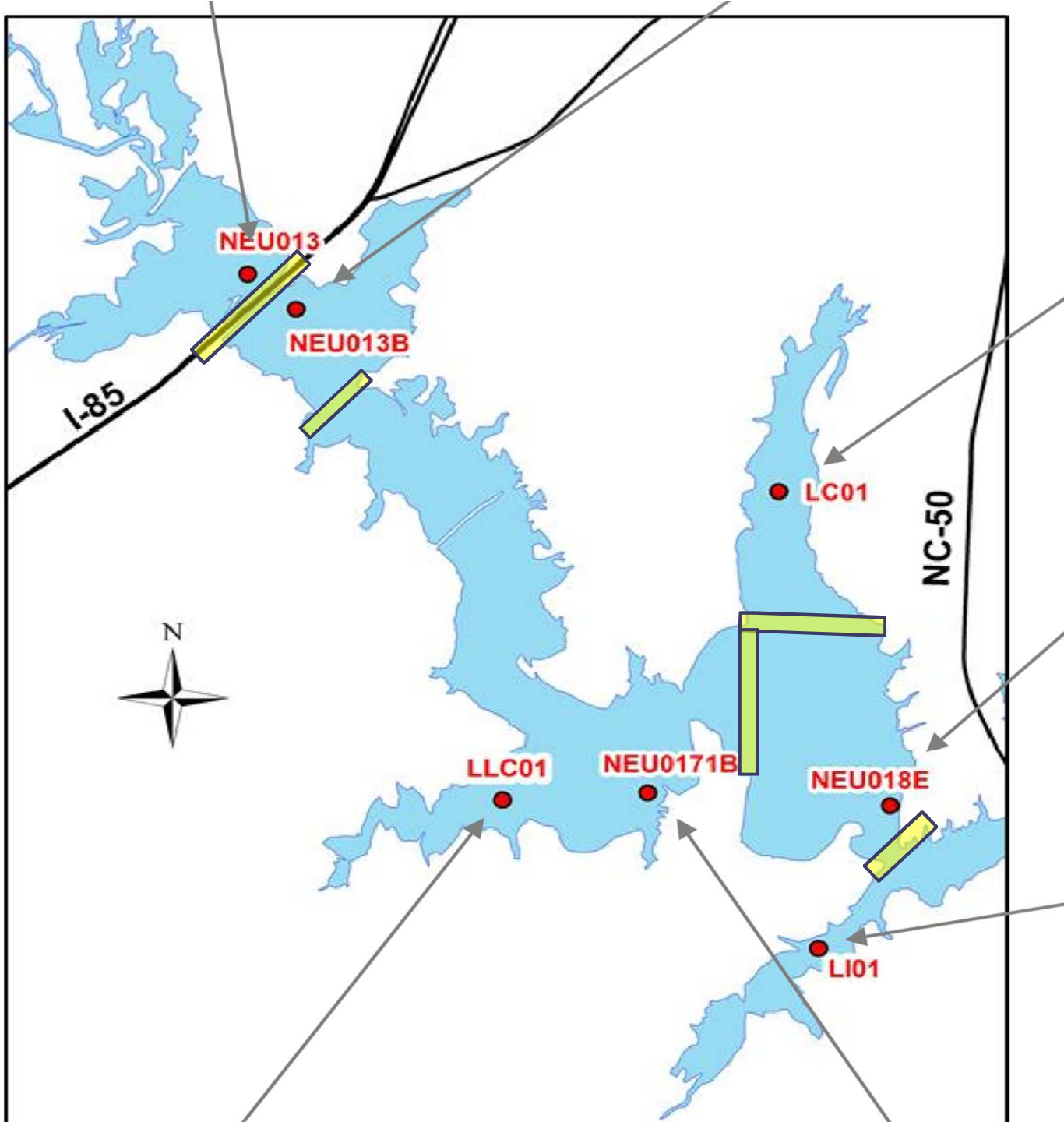
# *So, How Do you want it?*

*The Crystal Ball  
Mumbo Jumbo  
or Statistical  
Probability?*









## Ledge Creek Arm 2010-2014

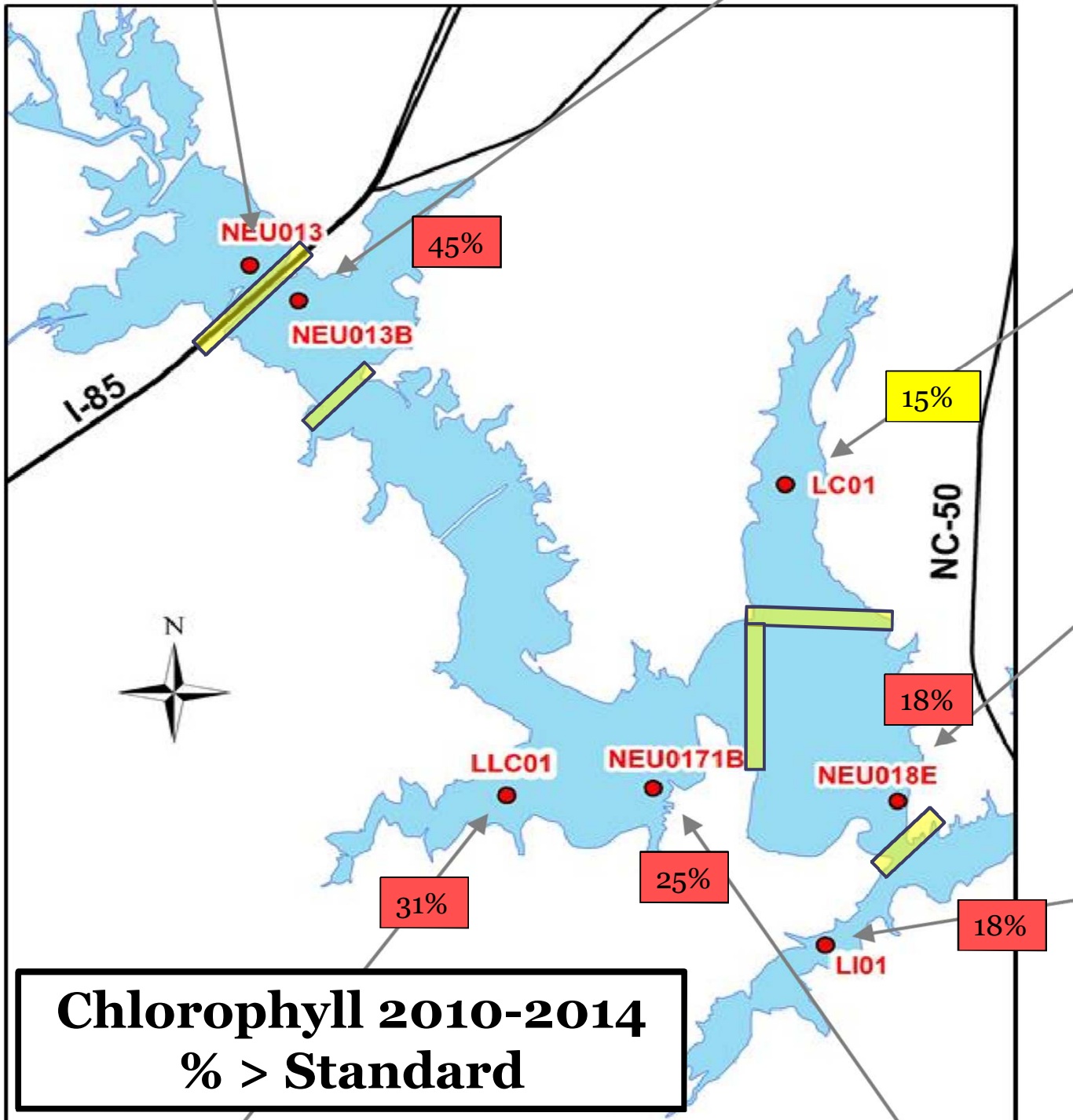
	<u>#obs</u>	<u># &gt; 40</u>	<u>% &gt; 40</u>
2010	8	0	0%
2011	11	1	9%
2012	12	1	8%
2013	11	5	45%
2014	12	1	9%
<b>Total</b>	<b>54</b>	<b>8</b>	<b>15%</b>

83% Statistical Confidence **NEULC01**  
**2016? Category 3b1** Change from 1b

## Falls Lake fr Ledge Cr to Lick Cr 2010-2014

	<u>#obs</u>	<u># &gt; 40</u>	<u>% &gt; 40</u>
2010	8	0	0%
2011	12	1	8%
2012	12	3	25%
2013	12	3	25%
2014	12	3	25%
<b>Total</b>	<b>56</b>	<b>10</b>	<b>18%</b>

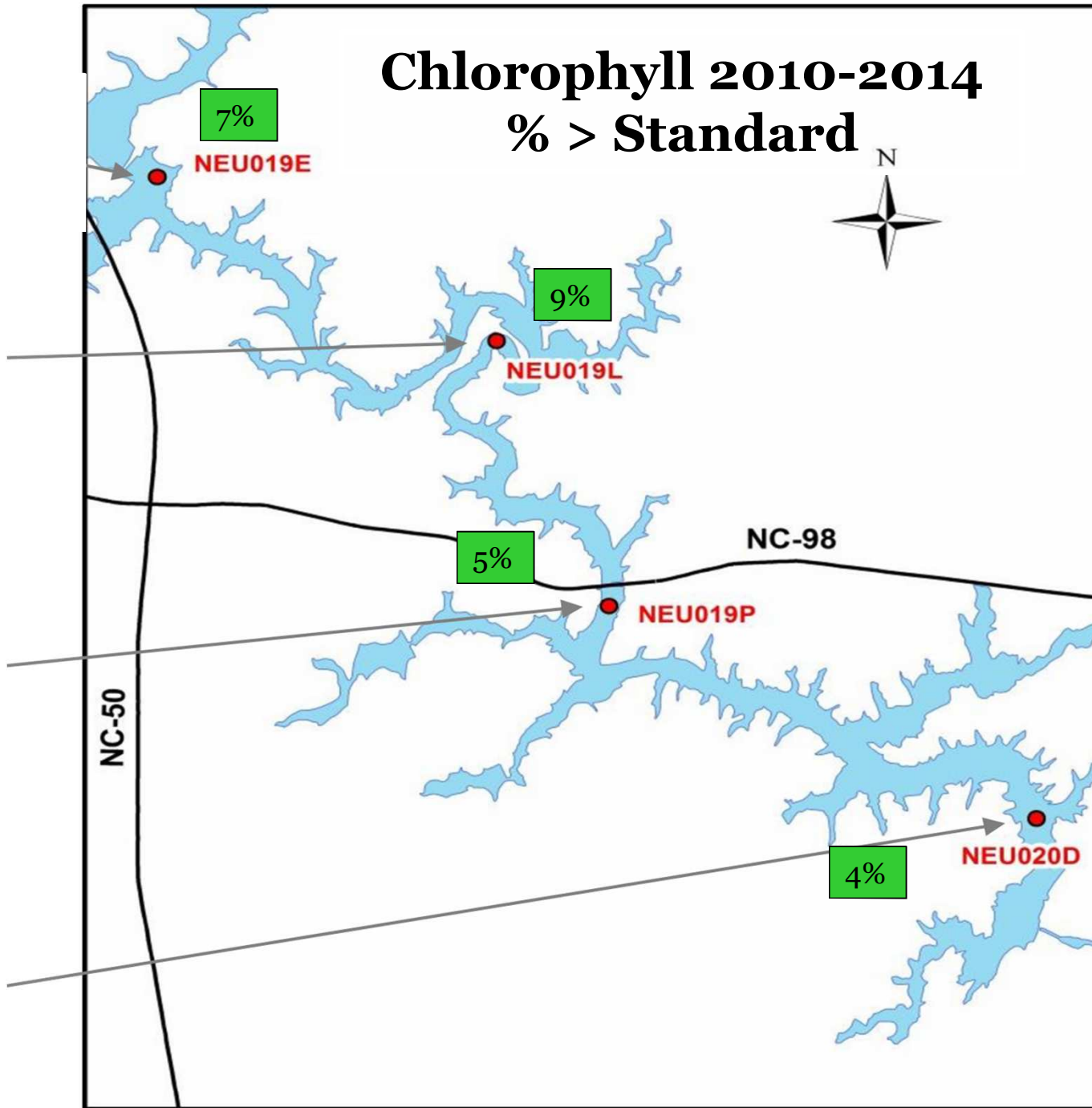
95% Statistical Confidence **NEU018E**  
**2016? Category 4b** change from 3b1



**Chlorophyll 2010-2014**  
**% > Standard**

18%  
LI01

# Chlorophyll 2010-2014 % > Standard



# Falls Lake ratings

**2014**    **2016 ?**

- |                                      |       |              |
|--------------------------------------|-------|--------------|
| • to I-85 Bridge <b>1</b>            | • 4b  | • 4b         |
| • I-85 Bridge to Panther Cr <b>1</b> | • 4b  | • 4b         |
| • Panther Cr to Ledge Cr <b>2</b>    | • 4b  | • 4b         |
| • Ledge Creek Arm <b>1</b>           | • 1b  | • <b>3b1</b> |
| • Ledge Cr to Lick Creek <b>1</b>    | • 3b1 | • <b>4b</b>  |
| • Lick Creek Arm to Dam <b>5</b>     | • 1b  | • 1b         |

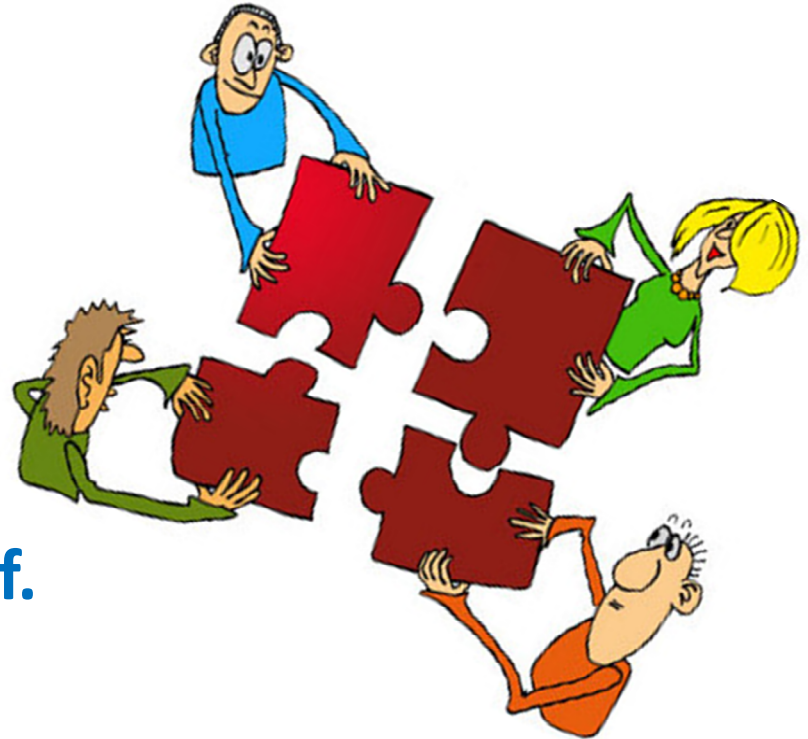
## Rules: Sustained maintenance

### Two consecutive use support assessments

- IR - Lick Creek Arm to the DAM
  - Category 1b 2014 Assessment
  - Category 1b 2016 Assessment – **almost certainly**
- Falls Rules Segments are not the same as IR

# 2016 uncertainty

- ~~➤ Listing method changes~~
- Segment changes
  - Lick Cr 18% >std. 93% conf.
- EMC Approvals
- Rule changes
- EPA Guidance changes
- ✓ Data will not change unless...





# Falls Attainment of Nutrient Related Standards

- ✓ 2016 Downstream of Highway NC-98
- ✓ 2021 Lower Falls Reservoir (Downstream NC-50)
- 2022 Stage II Additional Controls Begin**
- 2026 Lick Creek Arm
- 2031 Ledge and Little Lick Creek
- 2036 Downstream of Interstate 85
- 2041 Attainment throughout Falls Reservoir

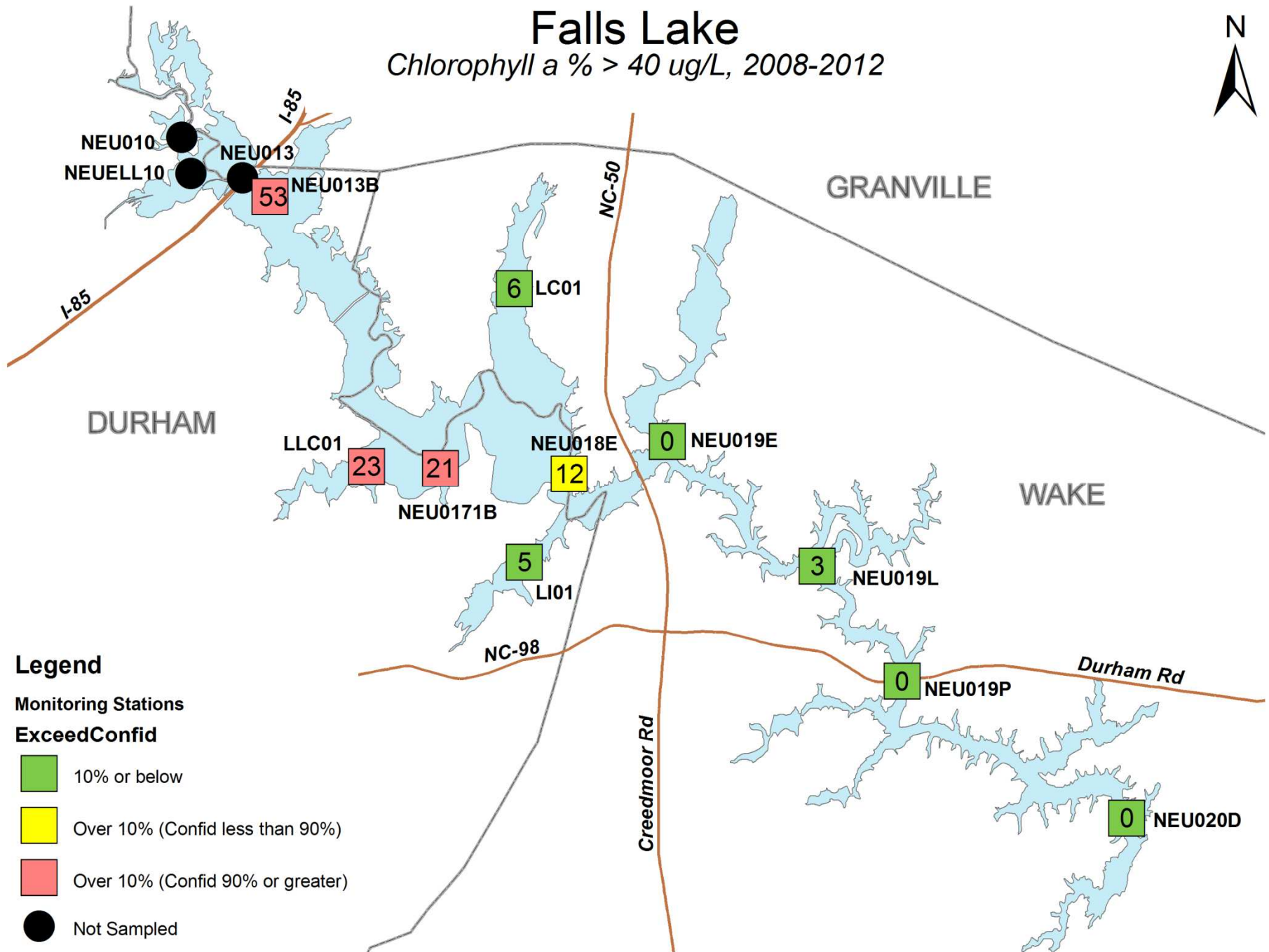
**Sustained maintenance**

**Two consecutive use support assessments**

**Use Support - every two years with a 5 year data window**

# Falls Lake


Chlorophyll a % > 40 ug/L, 2008-2012



## Legend

Monitoring Stations

ExceedConfid

 10% or below

 Over 10% (Confid less than 90%)

 Over 10% (Confid 90% or greater)

 Not Sampled