

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

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

# 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**

**5**

***303(d)  
List***

# 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

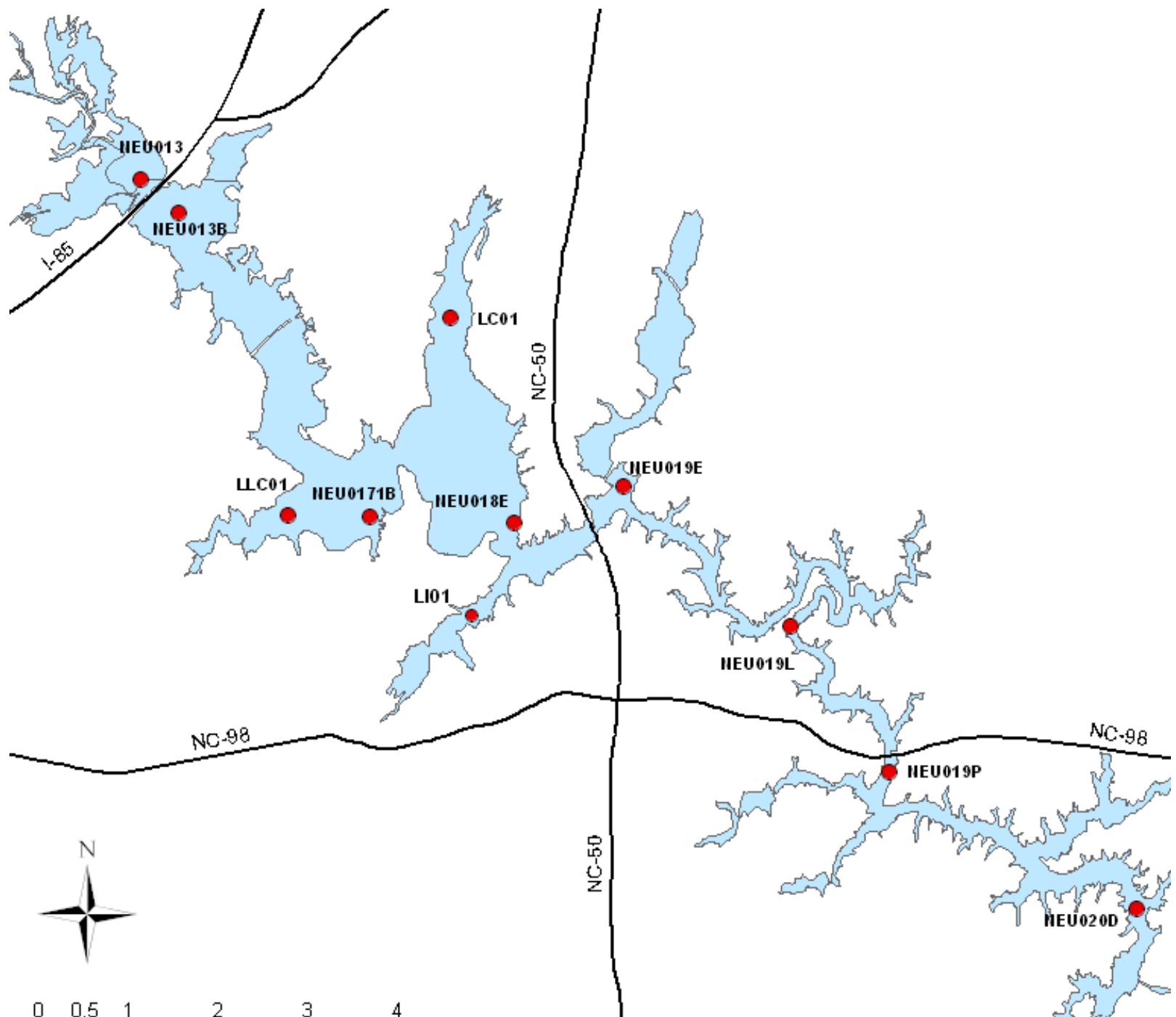
# 2014 Falls Lake IR segments

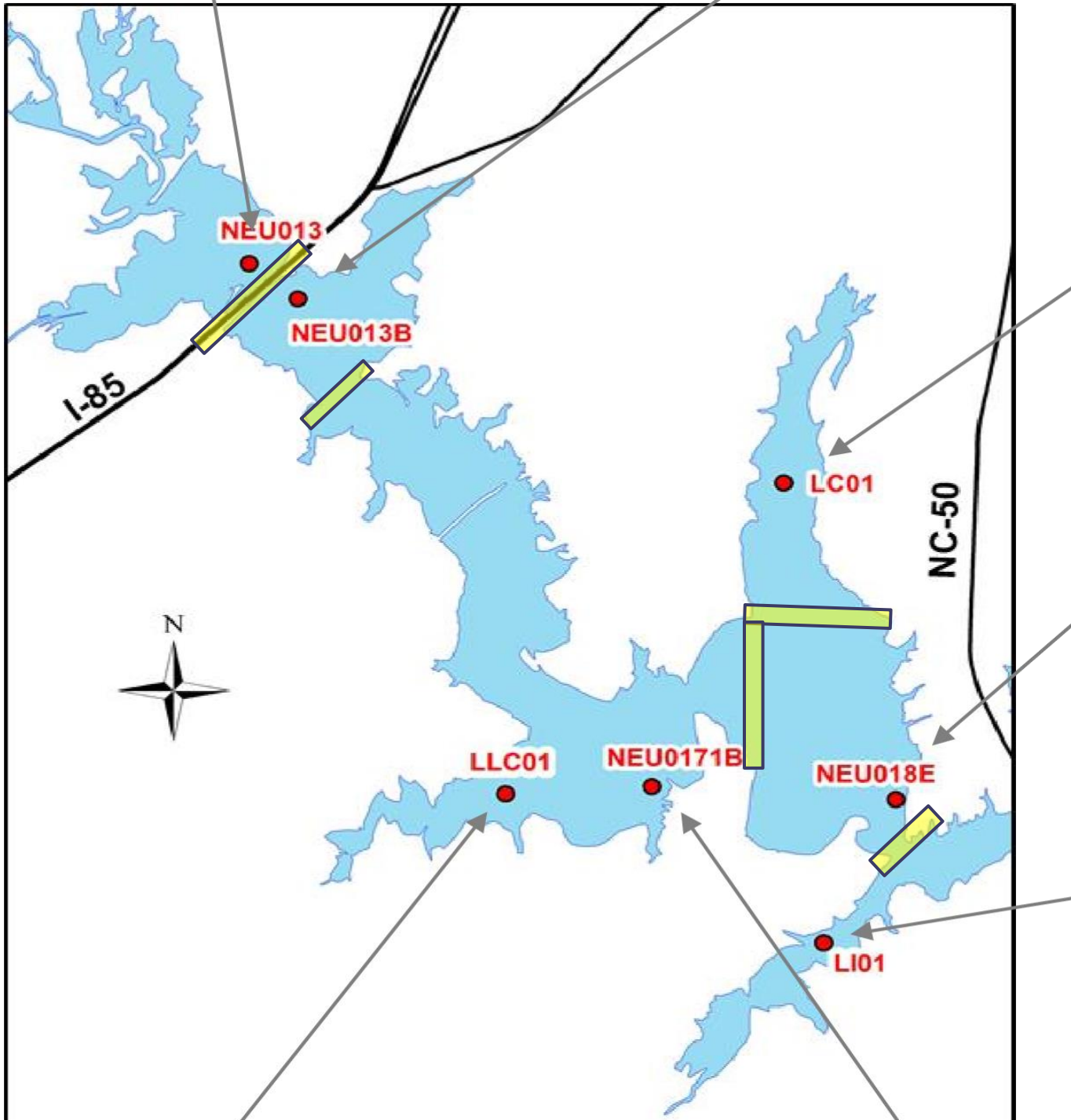
- from source to I-85 Bridge (1)
- from I-85 Bridge to Panther Creek (1)
- fr Panther Cr Arm to Ledge Cr Arm (2)
- Ledge Creek Arm (1)
- fr Ledge Cr Arm to Lick Creek Arm (1)
- from Lick Creek Arm to Falls Dam (5)

*So, How Do you want it?*

*The Crystal Ball  
Mumbo Jumbo  
or Statistical  
Probability?*









## Ledge Creek Arm 2010-2014

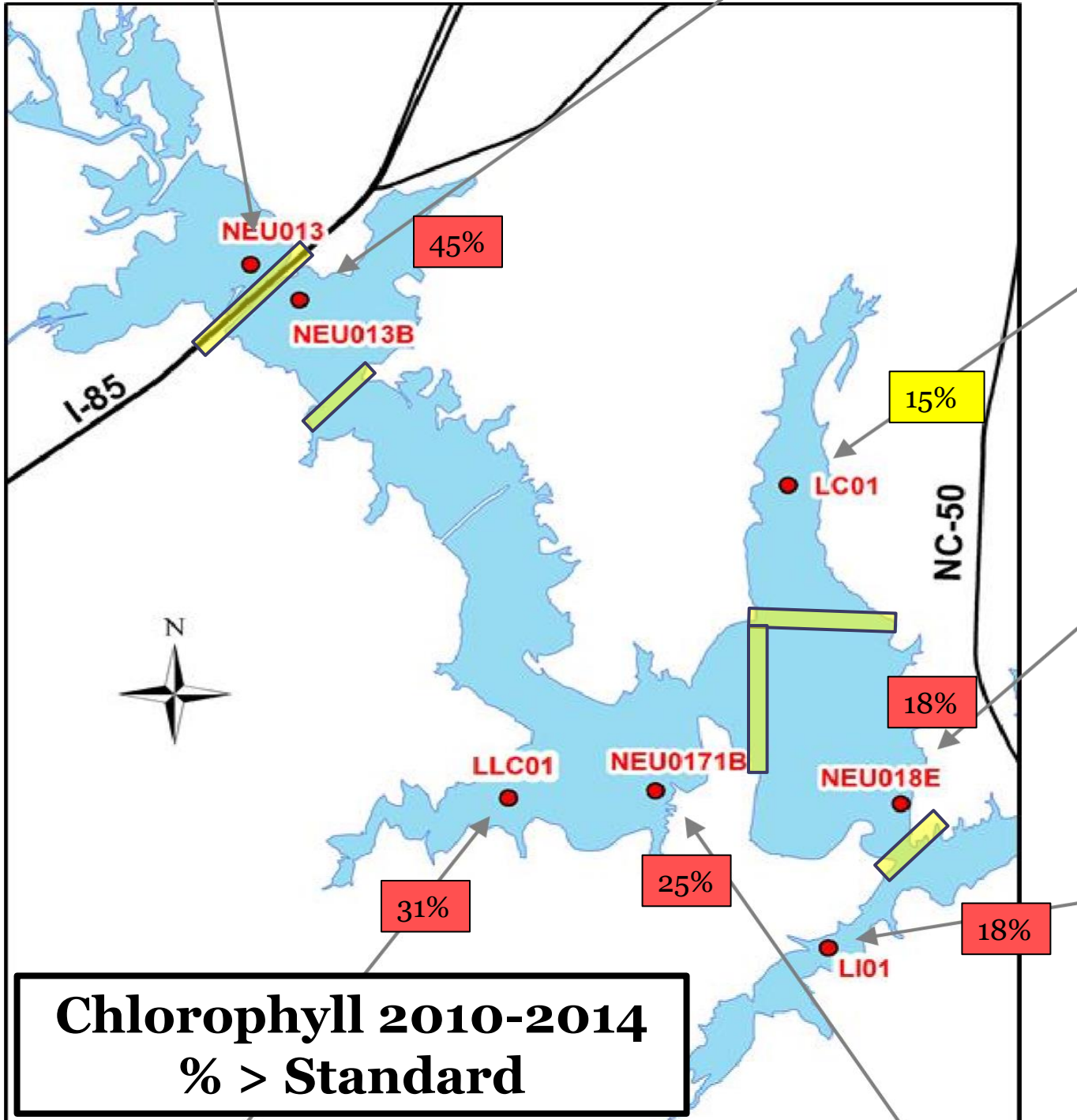
	<u>#obs</u>	<u>#&gt;40</u>	<u>%&gt; 40</u>
2010	8	0	0%
2011	11	1	9%
2012	12	1	8%
2013	11	5	45%
2014	12	1	9%
<b>Total</b>	<b>54</b>	<b>8</b>	<b>15%</b>

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>

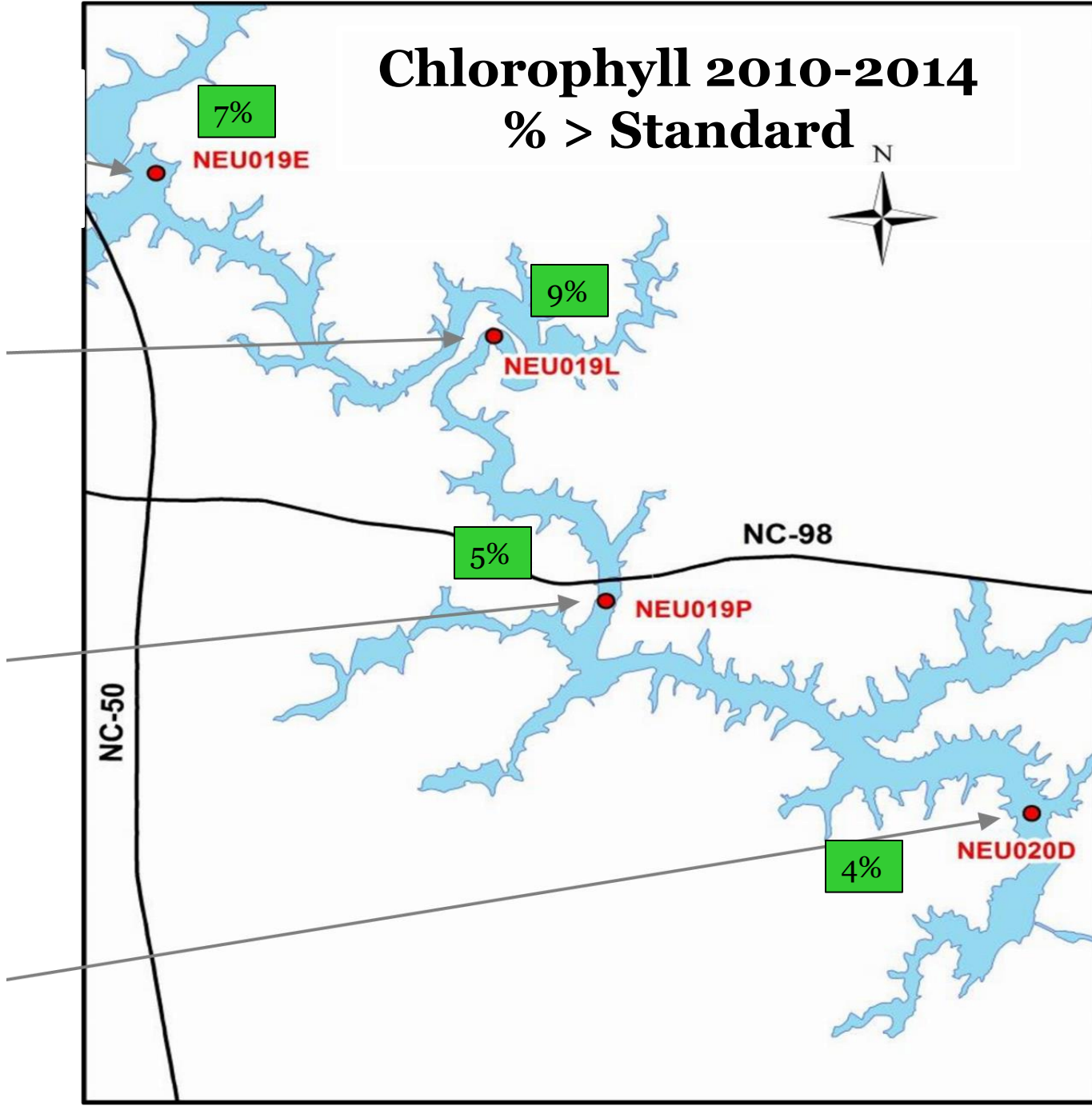
95% Statistical Confidence **NEU018E**  
**2016? Category 4b** change from 3b1



**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         |

# Falls Attainment of Nutrient Related Standards

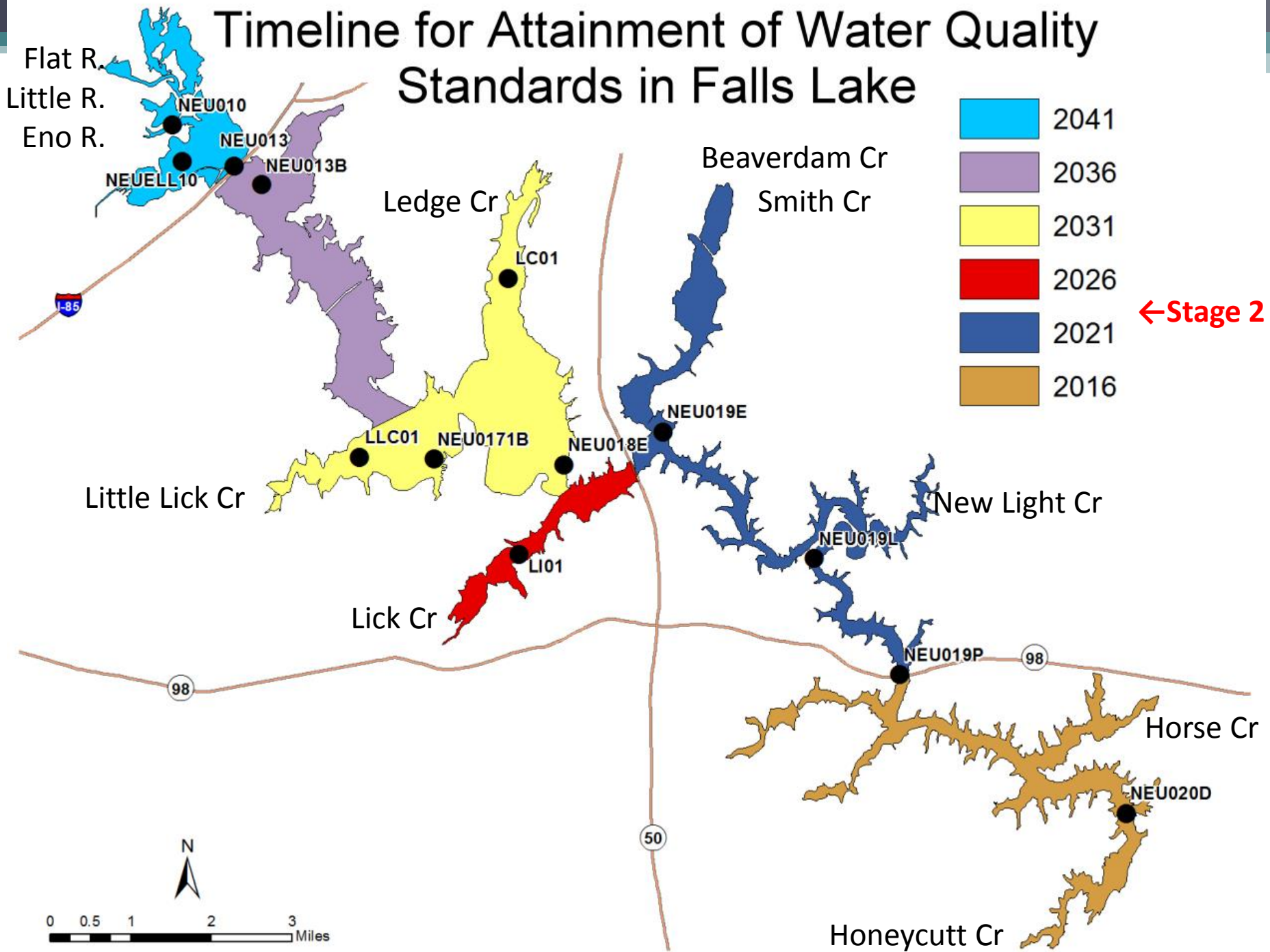
- 2016** Downstream of Highway NC-98
- 2021** Lower Falls Reservoir (Downstream NC-50)
- 2022** **Stage II Additional Controls Begin**
- 2026** Lick Creek Arm
- 2031** Ledge and Little Lick Creek
- 2036** Downstream of Interstate 85
- 2041** Attainment throughout Falls Reservoir

**Sustained maintenance**

**Two consecutive use support assessments**

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

# Timeline for Attainment of Water Quality Standards in Falls Lake



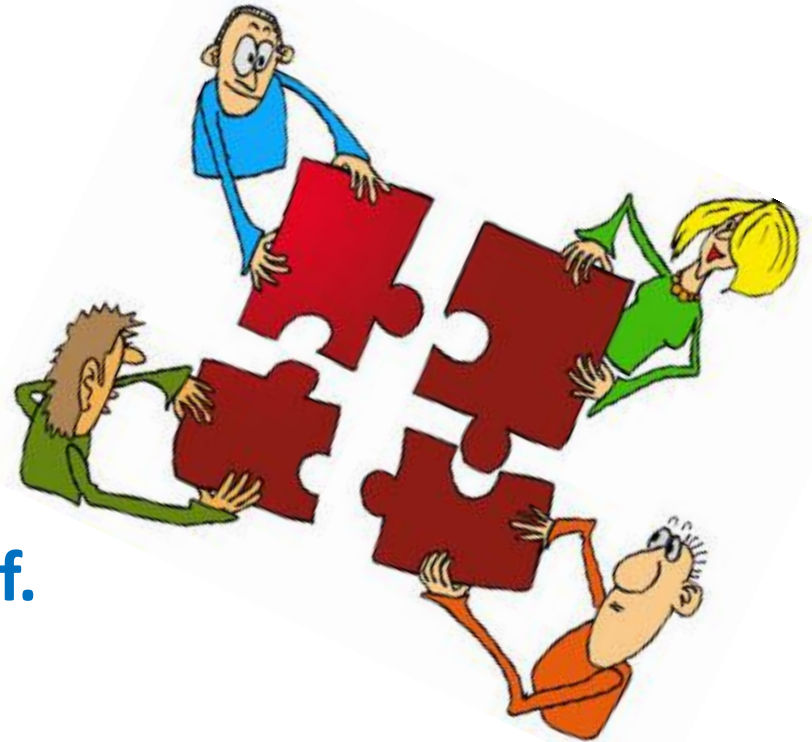
## **Rules: Sustained maintenance Two consecutive use support assessments**

- IR - Lick Creek Arm to the DAM
  - Category 1b 2014 Assessment
  - Category 1b 2016 Assessment ?
- 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 Lake

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

