



# ***Ozone Design Value Predictor Tool***

*August 27, 2019*

*Department of Environmental Quality*

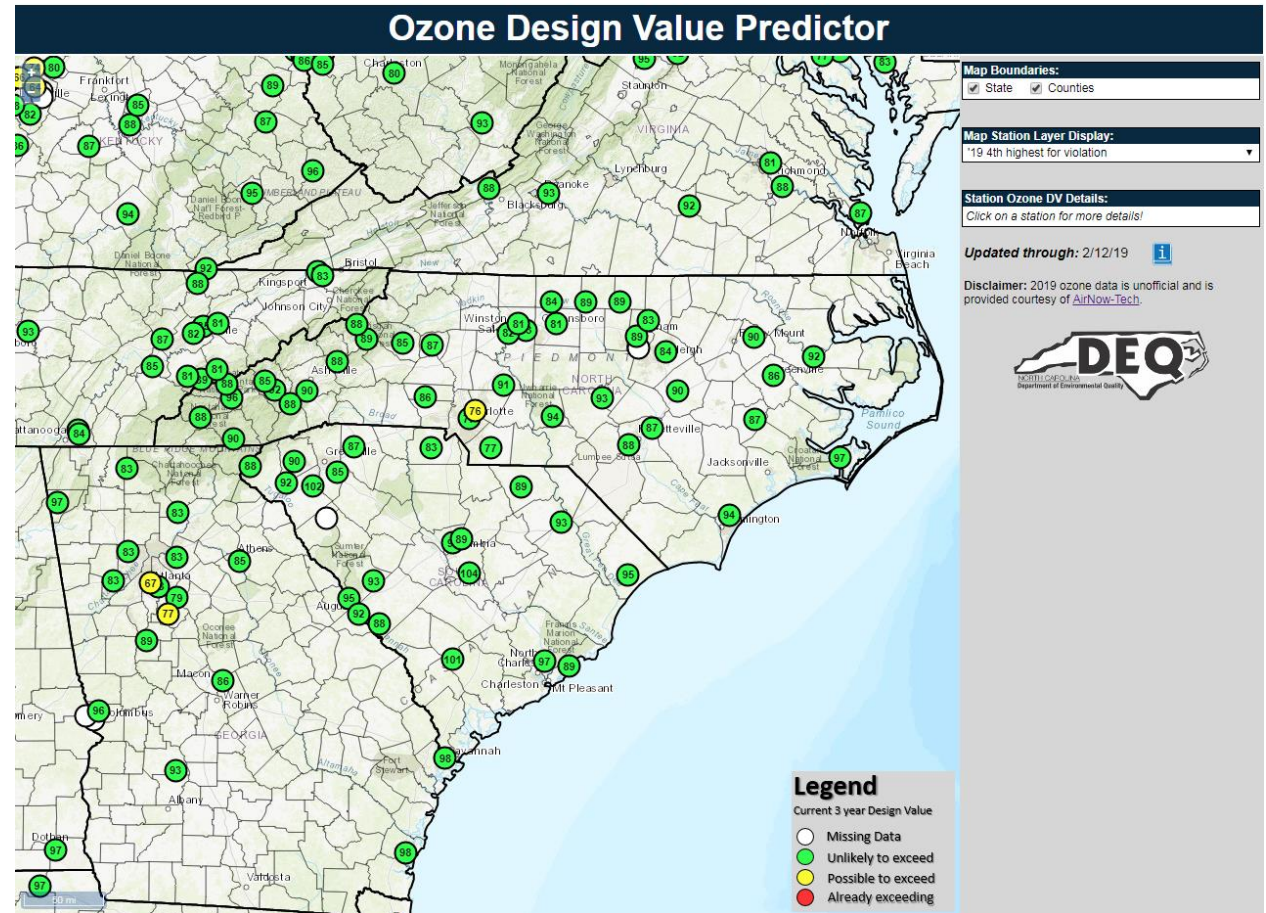
*AAPCA 2019 Fall Meeting*



# Ozone Design Value Predictor

*What and Why?!*

- A web-based mapping tool that displays maximum 8 hr. ozone and Design Value information using current year ozone data for all ozone monitors in the U.S.
  - Updates daily through previous day
- Provides an up-to-date snapshot of ozone monitor attainment status based on current year ozone data
- Projects likely attainment status of current 3 year Design Values based on historical records
  - Computed using current 4<sup>th</sup>, 3<sup>rd</sup>, 2<sup>nd</sup>, and 1<sup>st</sup> highest days for each monitor (each a displayable layer)





# Ozone Design Value Predictor

## *Data Sources*

- Current year (and previous year until certified EPA data is released) data comes from AirNow Application Programming Interface (API) files
  - <http://files.airnowtech.org/>
- Historical data – certified – comes from EPA
- Data is updated at 7am and again at 10am each day
  - Previous 90 days are also updated to capture any corrections made to the daily data at any monitor



# Ozone Design Value Predictor

*Available Layer Displays*

- Current year data
- Projected Design Values
- Critical Design Values

Map Boundaries:	
<input checked="" type="checkbox"/> State	<input checked="" type="checkbox"/> Counties

Map Station Layer Display:	
'19 4th highest for violation ▼	
*** Select a layer to display ***	
<b>2019 Data</b>	
Max 8hr Ozone - 8/21/19	
'19 4th highest	
'19 3rd highest	
'19 2nd highest	
'19 1st highest	
<b>Projected Design Values</b>	
'17 to '19 DV (Current 4th highest)	
'17 to '19 DV (Current 3rd highest)	
'17 to '19 DV (Current 2nd highest)	
'17 to '19 DV (Current 1st highest)	
<b>Critical 4th Highest Values</b>	
'19 4th highest for violation	



# Ozone Design Value Predictor

## Station Details Window

Station Ozone DV Details:	
<b>GARINGER</b> 371190041 Mecklenburg County, NC <i>Mecklenburg County Air Quality</i>	
<b>2019 Data (ppb)</b>	
4th Highest: 70 (8/16)	2nd Highest: 74 (8/9)
3rd Highest: 72 (8/15)	1st Highest: 77 (7/2)
<b>2017 to 2019 Projected DV (ppb)</b>	
Using 4th Highest: 68	Using 2nd Highest: 70
Using 3rd Highest: 69	Using 1st Highest: 71
<b>Critical 2019 4th Highest (ppb)</b>	
For Marg. Non-attainment: 77	
For Mod. Non-attainment: 107	
<b>Historical Design Values (ppb)</b>	
2016 to 2018: 68	2014 to 2016: 69
2015 to 2017: 69	2013 to 2015: 68
<b>Historical 4th Highest (ppb)</b>	
2018: 70	2013: 67
2017: 66	2012: 80
2016: 70	2011: 88
2015: 73	2010: 82
2014: 65	2009: 69

- The “Station Ozone DV Details” window displays all available ozone and Design Value information available for a given station
- This window can be opened by clicking on any monitor on the map from any layer



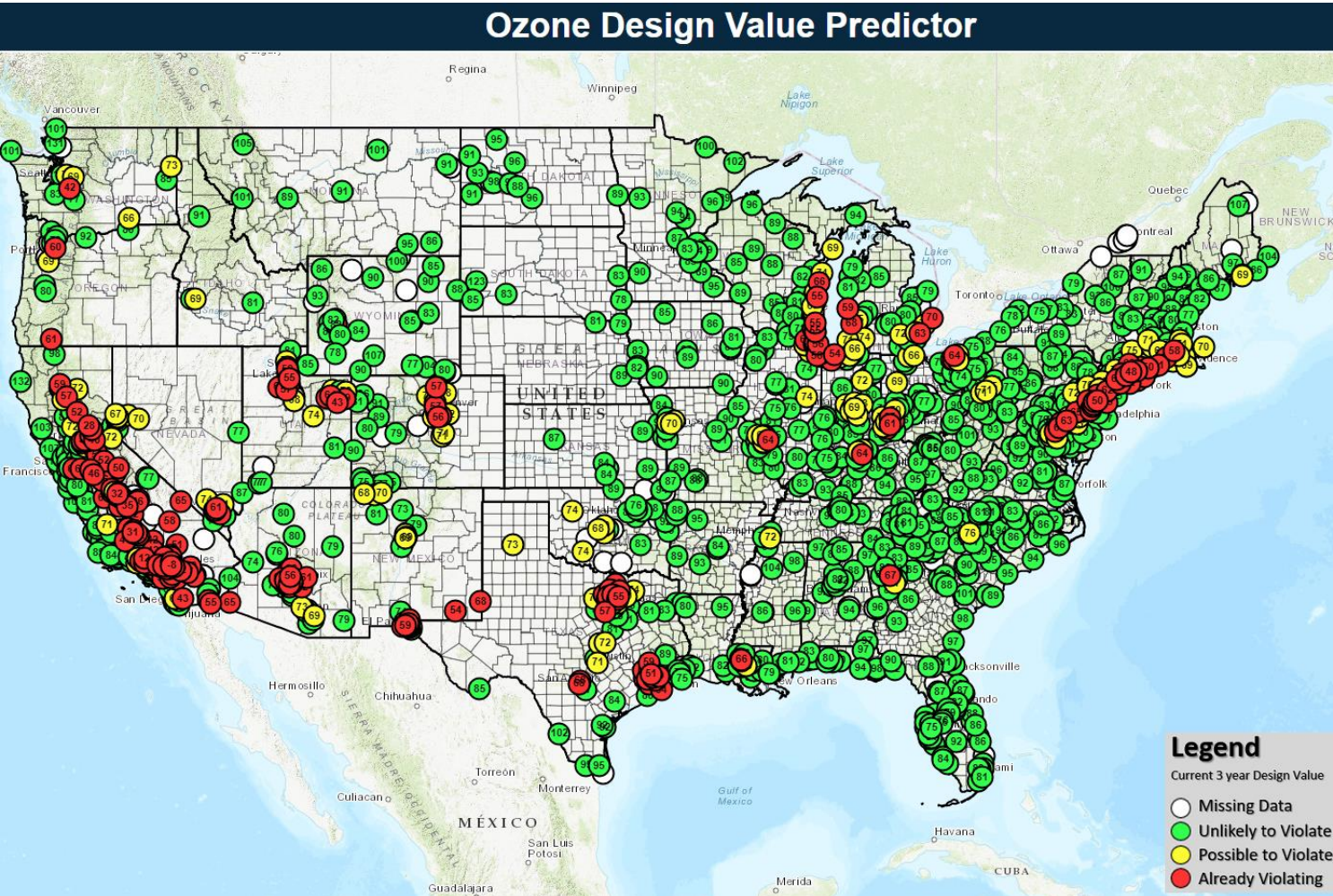
Valid through 8/22/19



# Ozone Design Value Predictor

Layer Category: *Critical 4<sup>th</sup> Highest Values*

## Ozone Design Value Predictor



- Displays **current year 4<sup>th</sup> highest value** that would result in **marginal non-attainment** for the **current three year design value** using **current year + previous year + two years ago**
- Stations in **red** already have a 4<sup>th</sup> highest concentration that will result in a violation if valid
- **Yellow** stations are ones that could violate based on analysis of previous years design values
- **Green** indicates unlikely to violate based on historical 4<sup>th</sup> highest readings

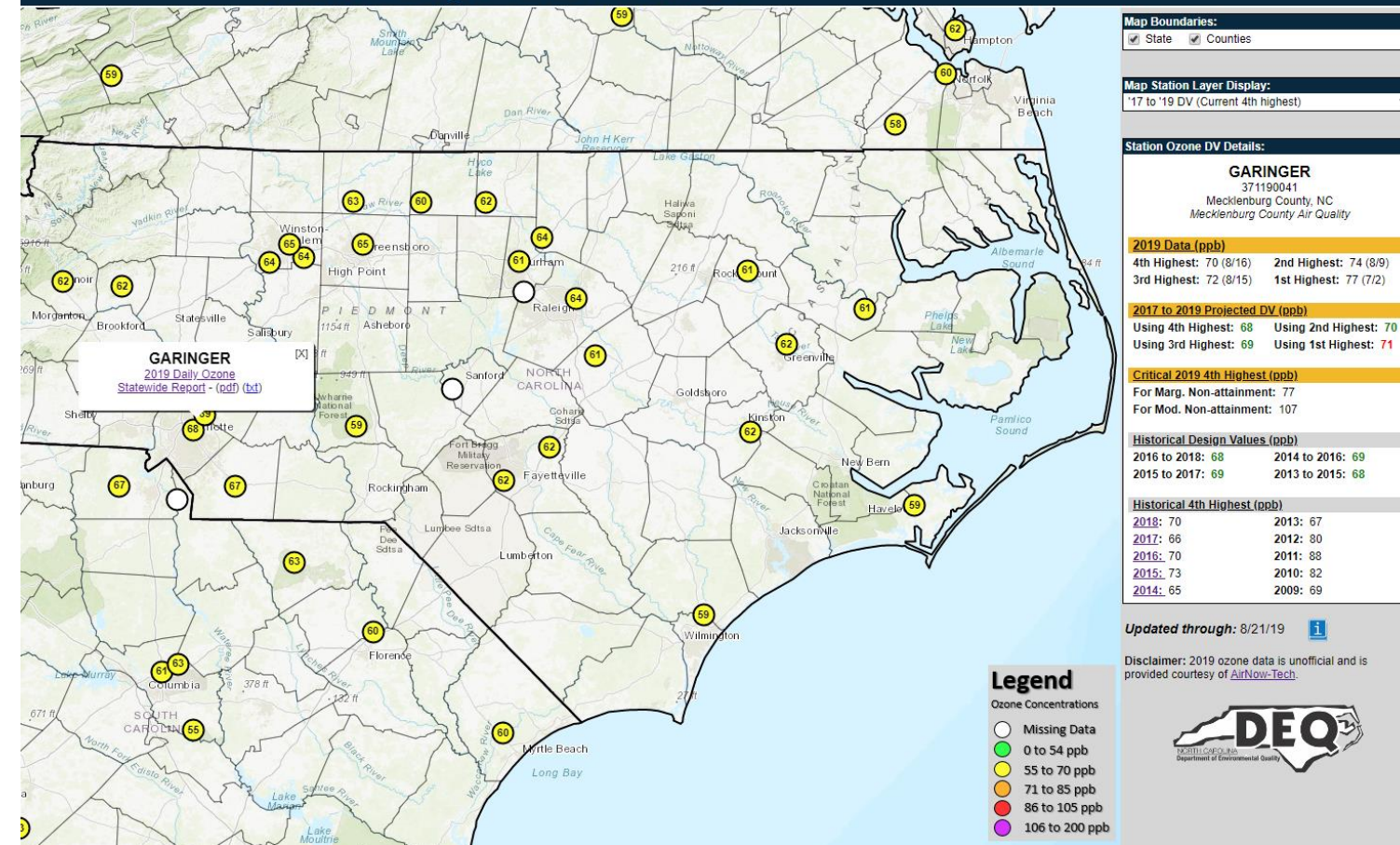




# Ozone Design Value Predictor

Layer Category: *Projected Design Values*

## Ozone Design Value Predictor



- Based on 4<sup>th</sup> highest value at each monitor for previous two years + current year 4<sup>th</sup>, 3<sup>rd</sup>, 2<sup>nd</sup>, or 1<sup>st</sup> highest as designated
- Earlier in the year, may be more useful to look at 1<sup>st</sup> or 2<sup>nd</sup> highest as more exceedance days are possible later in the ozone season

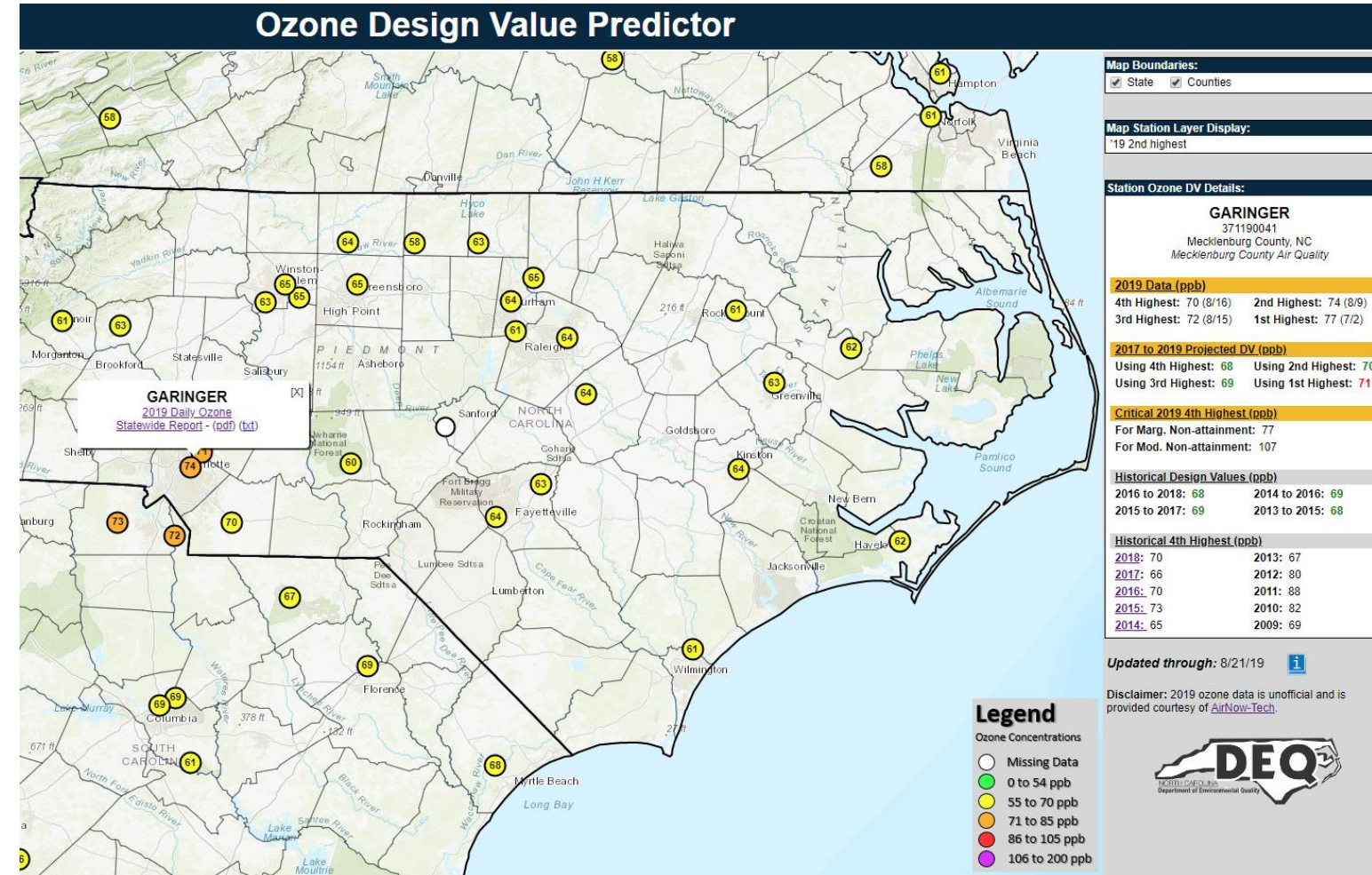




# Ozone Design Value Predictor

Layer Category: *Current Year Data*

## Ozone Design Value Predictor



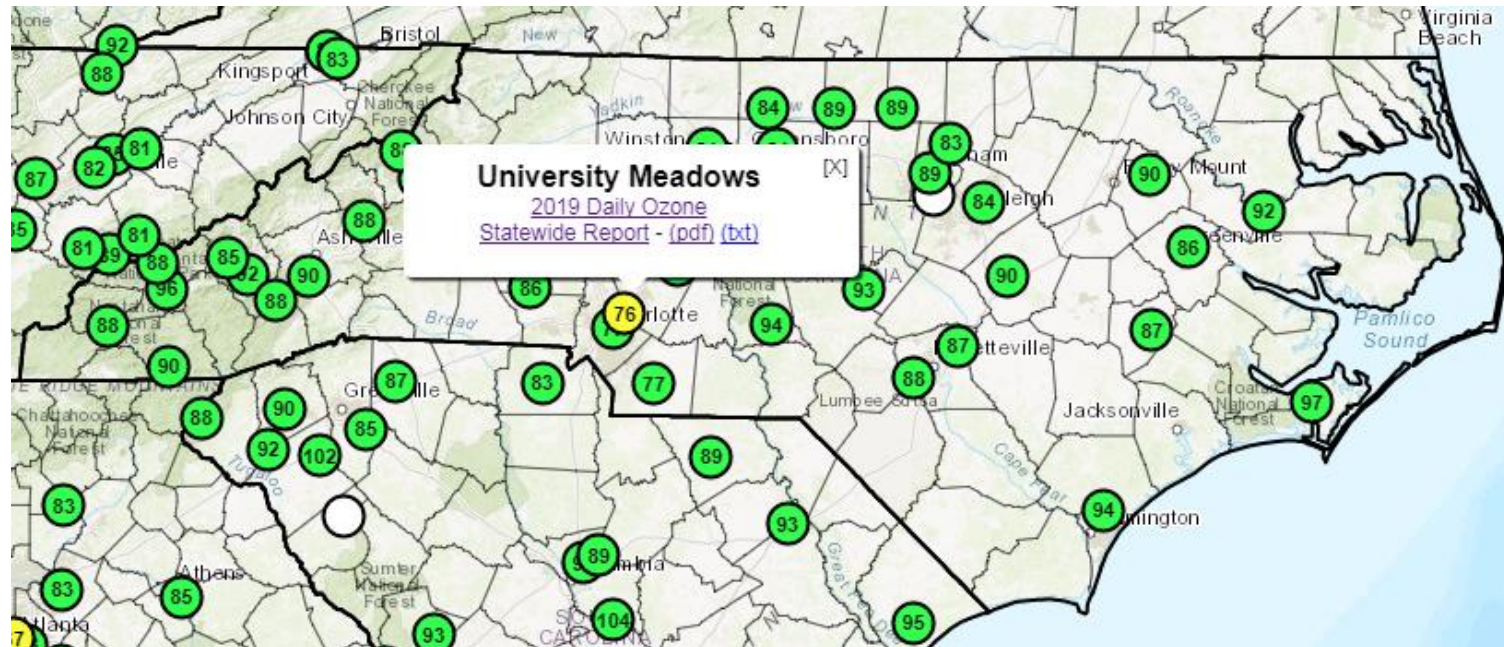
- Updated early the next morning
  - Allows user to display current year data for each monitor
- Can plot 1<sup>st</sup>, 2<sup>nd</sup>, 3<sup>rd</sup> or 4 highest ozone day for monitors along with yesterday's maximum 8 hr. ozone concentrations





# Ozone Design Value Predictor

## Station Options



# Ozone Design Value Predictor

Station Options: *Daily Ozone Monitor Report*

University Meadows (371190046)				
Mecklenburg County, NC Mecklenburg County Air Quality				
2019 Daily Max. 8 hour Ozone (Unofficial Data)			Maps	
	Date	Concentration (ppb)	Weather	Air Quality
1	Saturday, June 29th	73	*	*
2	Wednesday, July 3rd	71	*	*
3	Tuesday, July 2nd	71	*	*
4	Thursday, August 15th	70	*	*
5	Friday, June 28th	69	*	*
6	Friday, August 9th	67	*	*
7	Tuesday, August 6th	67	*	*
8	Friday, July 19th	67	*	*
9	Monday, July 29th	66	*	*
10	Friday, May 17th	64	*	*





# Ozone Design Value Predictor

Station Options: *Statewide Report*


## North Carolina Statewide Ozone Report

Site Name	County	'19 Current Top 4				'17 to '19 Projected DVs				'19 4th Highest For Violation		Historical DVs		Historical 4th Highest			
		4th	3rd	2nd	1st	Using 4th	Using 3rd	Using 2nd	Using 1st	Marginal	Moderate	'16 to '18	'15 to '17	'18	'17	'16	'15
University Meadows	Mecklenburg	70	71	71	73	69	69	69	70	76	106	70	70	69	68	74	69*
Garinger	Mecklenburg	70	72	74	77	68	69	70	71	77	107	68	69	70	66	70	73
Monroems	Union	65	67	70	72	67	67	68	69	77	107	68	67	70	66	70	67
Hattieaven	Forsyth	64	64	65	67	65	65	65	66	81	111	66	67	66	66	66	70
Mendnhal	Guilford	64	64	65	67	65	65	65	66	81	111	66	65	67	65	68	64
Clemmons Middle	Forsyth	61	61	63	63	64	64	64	64	82	112	67	67	67	64	70	68



# Ozone Design Value Predictor

*Location*

- Go to: [deq.nc.gov/O3DVpredictor](http://deq.nc.gov/O3DVpredictor)
- To view the User Guide, click on the  button on the right side of the screen.





# Ozone Design Value Predictor

*Contact for Questions/Suggestions*

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