




# Isn't It Irene-ic!

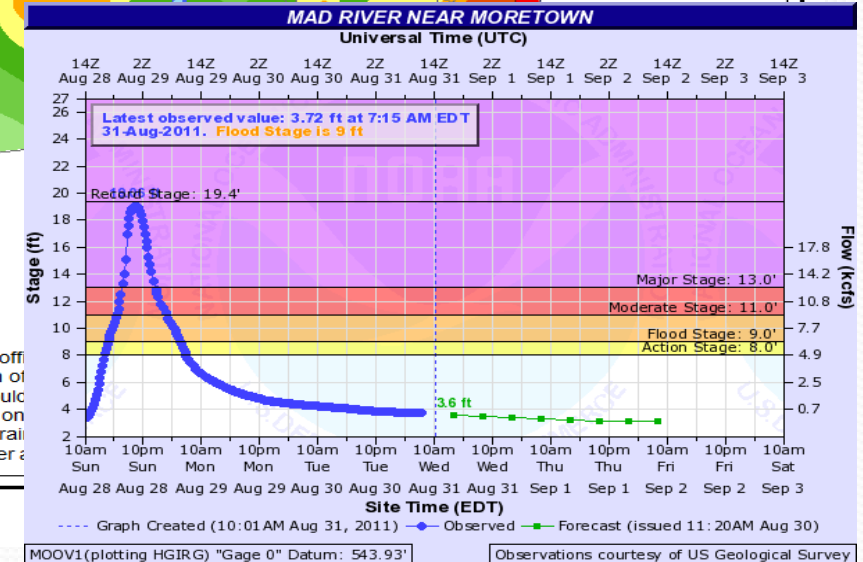
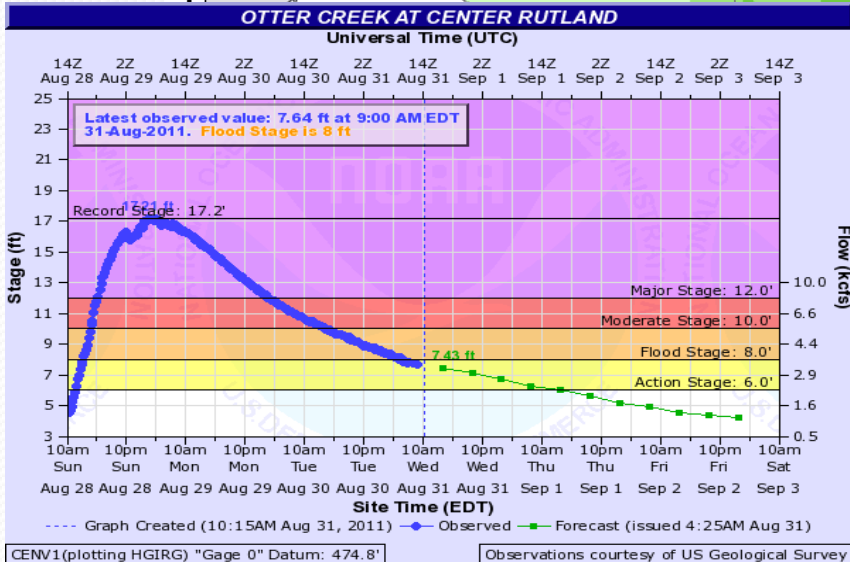
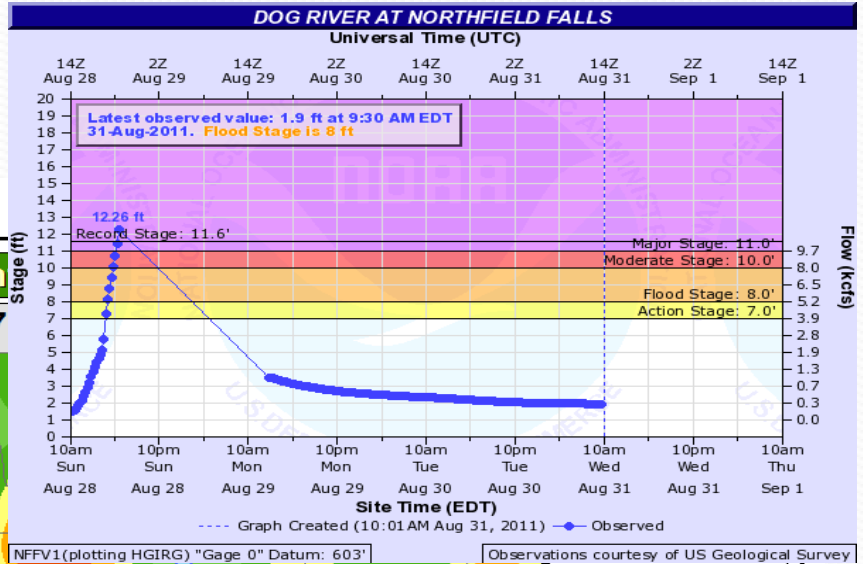
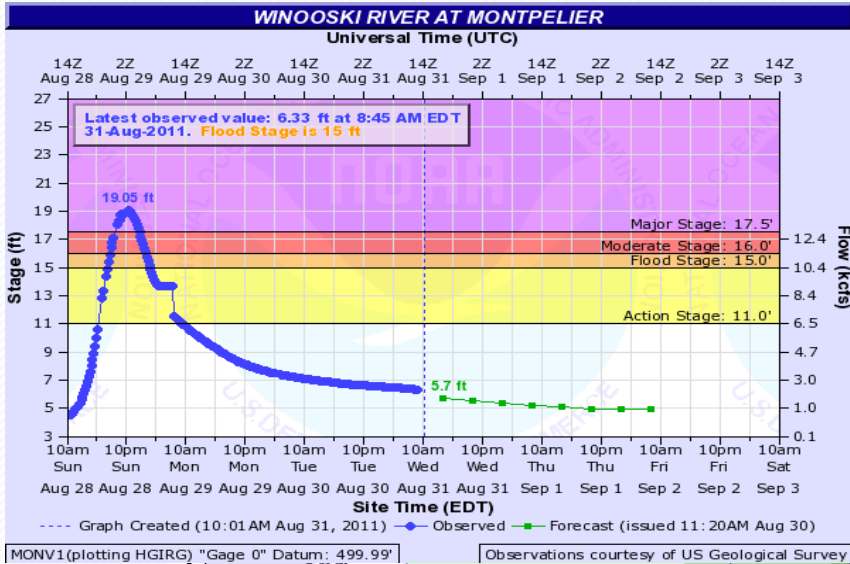
Hurricane Irene's effect on Vermont STREAM sites

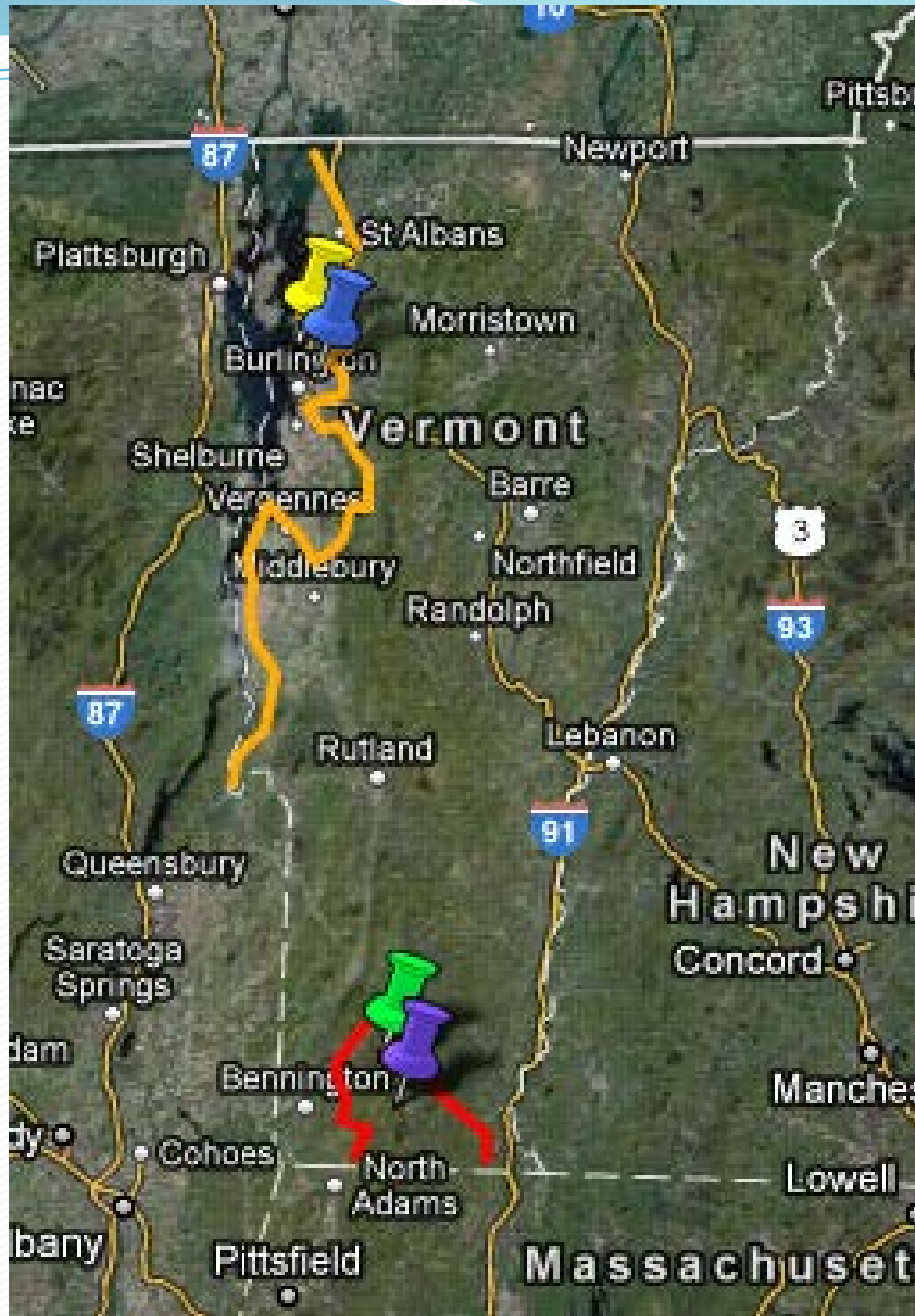


# Hypotheses

- Null
  - Chemical / Physical parameters unchanged
- Alternative
  - Total Phosphorus, *E. coli*, Total Suspended Solids, and Total Coliform will increase
  - Bank Full Width, Erosion, Embeddedness will increase
  - Site Assessment and Habitat Assessment score will decrease

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- Total Phosphorus
  - *E. coli*
  - Total Suspended Solids
  - Total Coliform
  - Embeddedness
  - Site Assessment Score





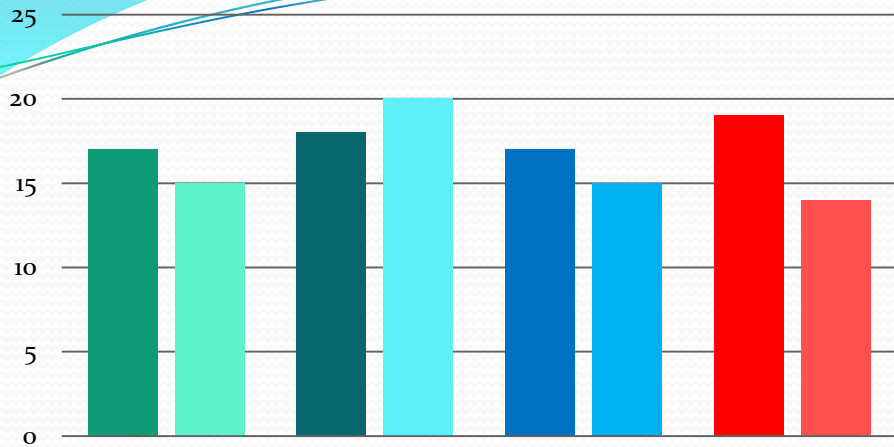
# Stream Information

Site Name	Catchment Area (in Acres)	Percent Forestation	Percent Highly Erodible Soils	Stream Order
DR_BeavBrk_1524	4885.78	87 <sup>0</sup> %	78 <sup>0</sup> %	3 <sup>rd</sup>
DR_NBDrfl_d_2067	607.2	97 <sup>0</sup> %	95.7 <sup>0</sup> %	4 <sup>th</sup>
LCD_IndBrk_323	2950.07	56.3 <sup>0</sup> %	7.5 <sup>0</sup> %	3 <sup>rd</sup>
LCD_PndBrk_179	2424.35	66.2 <sup>0</sup> %	26 <sup>0</sup> %	3 <sup>rd</sup>

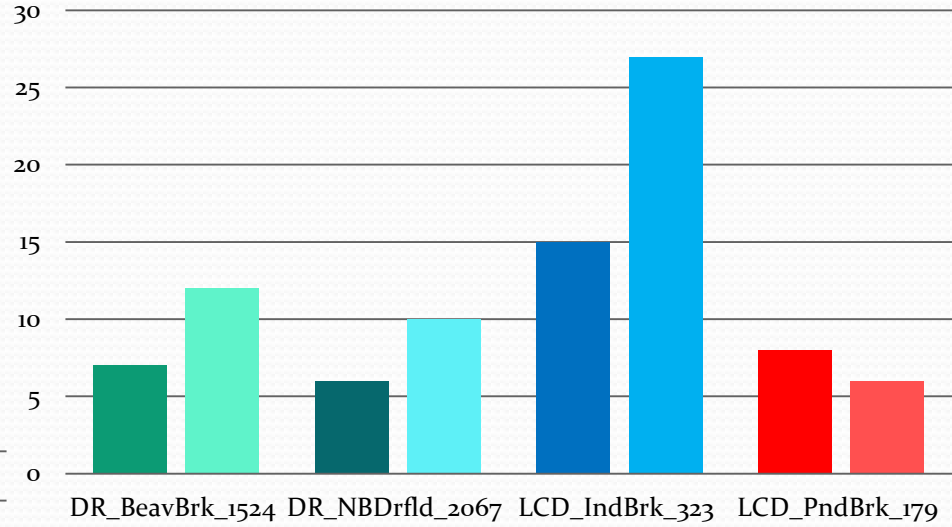
# What did we look at?

- Chemical parameters
  - Total Phosphorus, *E. coli*, Total Suspended Solids, Total Coliform
- Physical parameters
  - Habitat Assessment, Site Assessment
    - Embeddedness & Bank Full Width

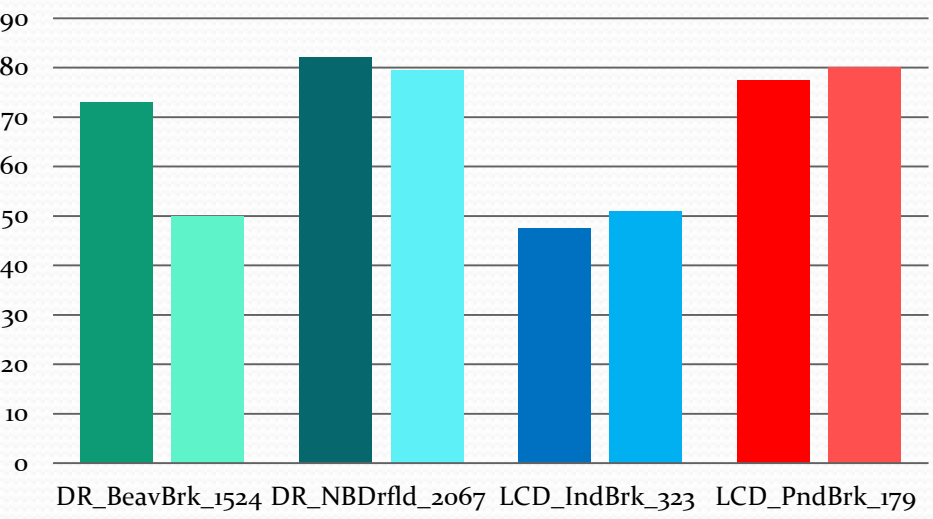
# Embeddedness



# Bank Full Width

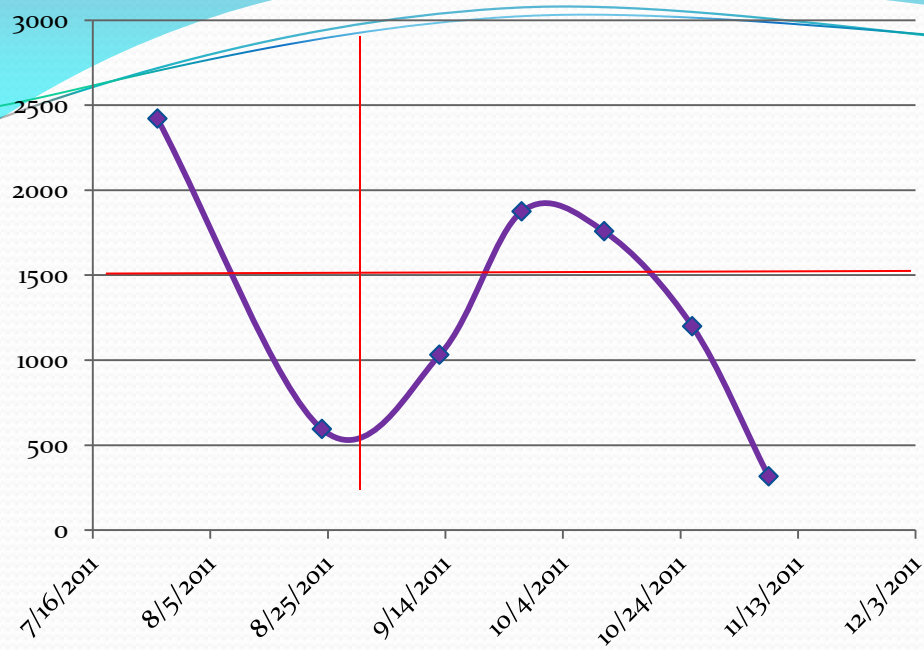


# Site Assessment Score

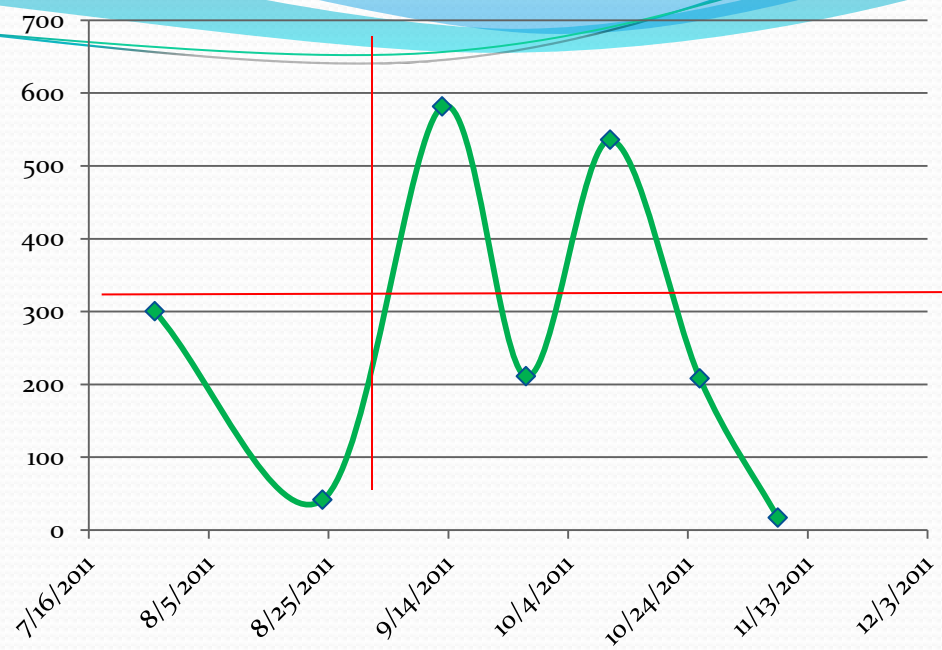




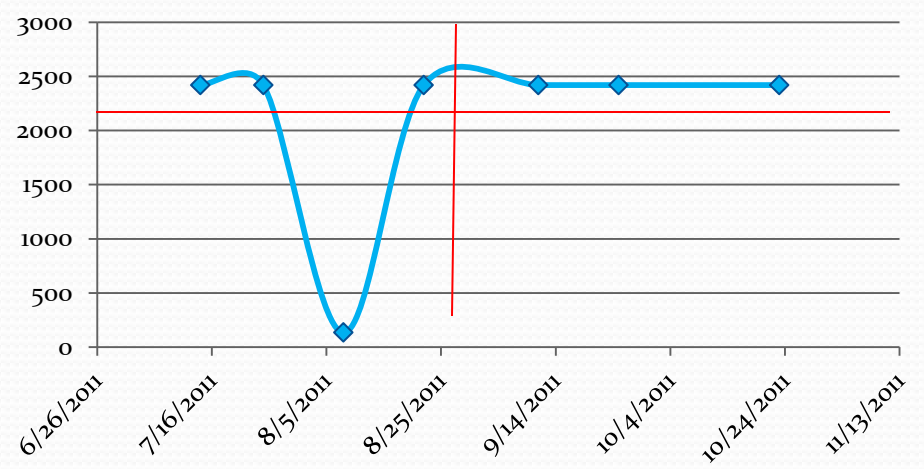
### T. Coliform - DR\_BeavBrk\_1524



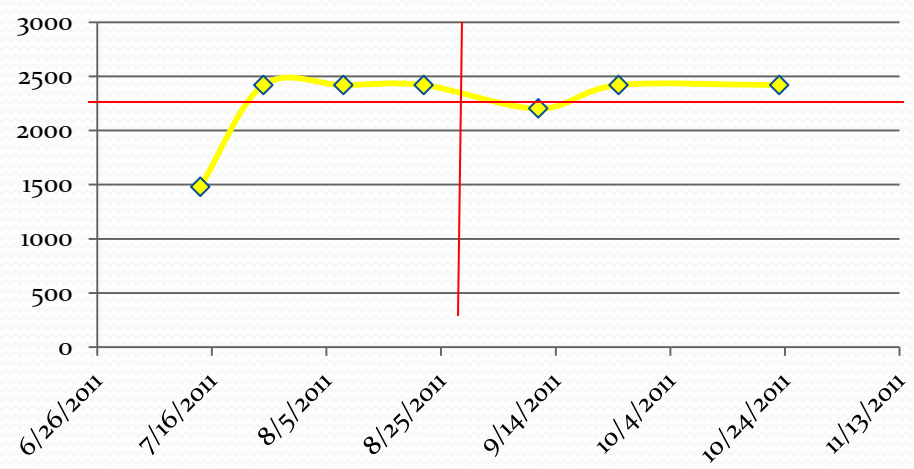
### T. Coliform - DR\_NBDrfld\_2067



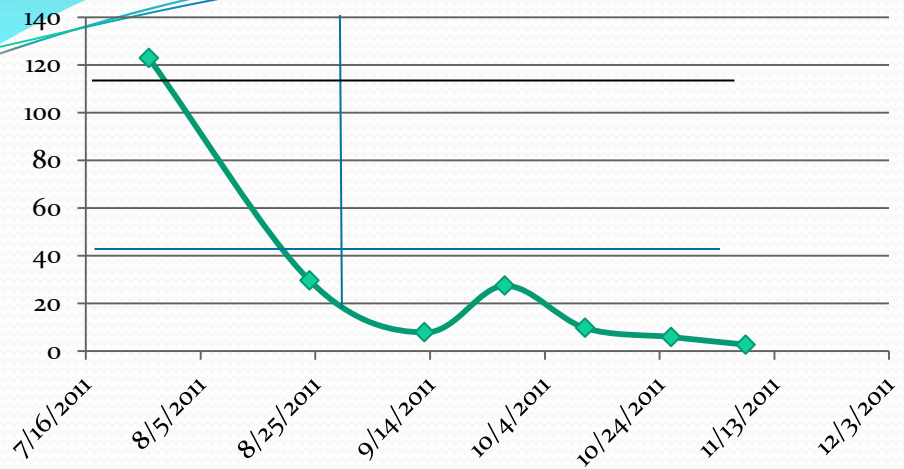
### T. Coliform - LCD\_IndBrk\_323



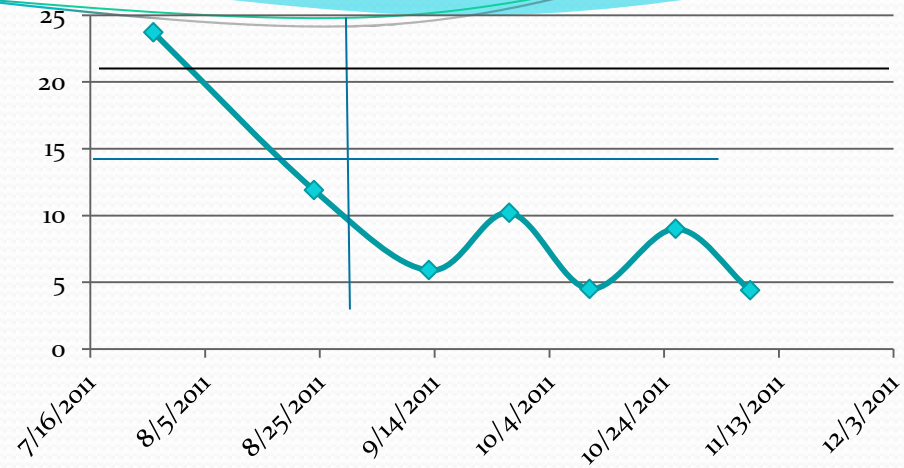
### T. Coliform - LCD\_PndBrk\_179



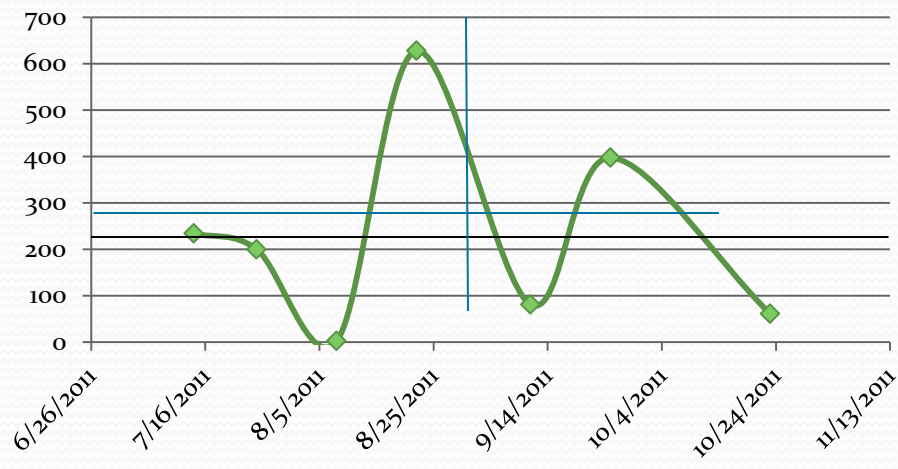
### E. Coli - DR\_BeavBrk\_1524



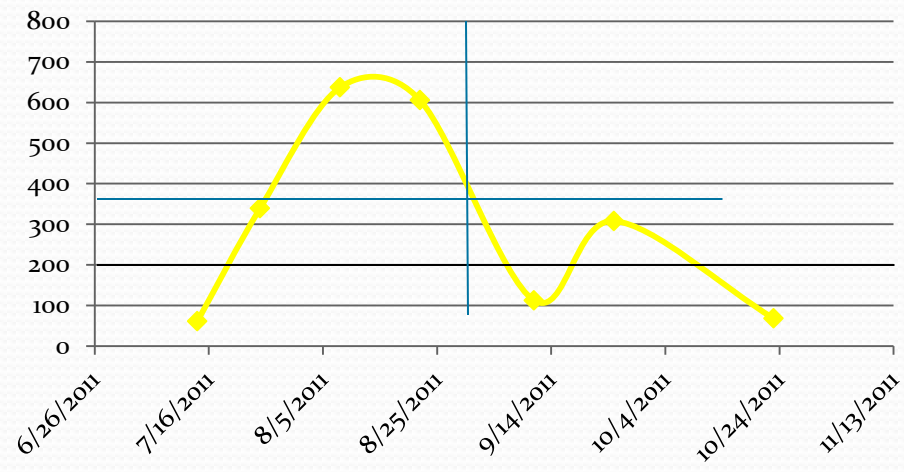
### E. Coli - DR\_NBDrfld\_2067



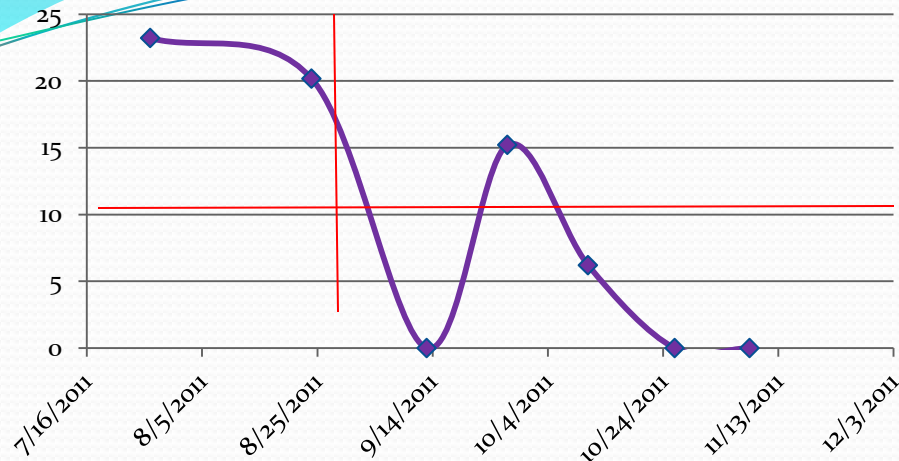
### E. Coli - LCD\_IndBrk\_323



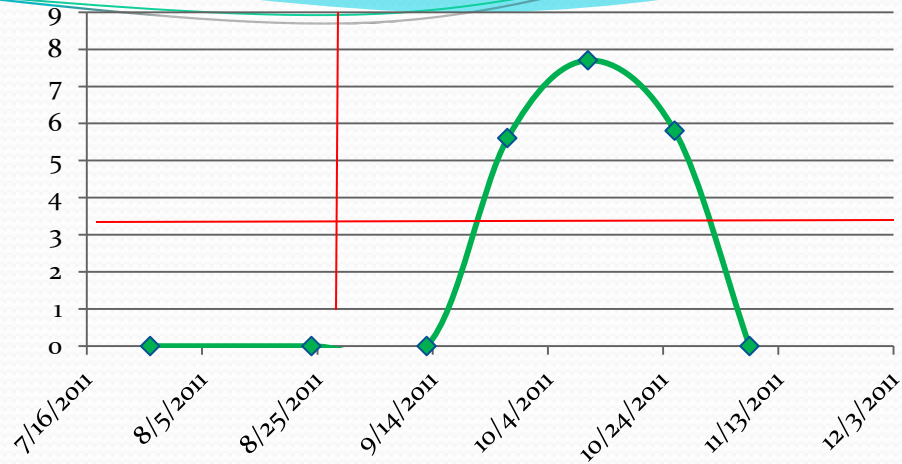
### E. Coli - LCD\_PndBrk\_179



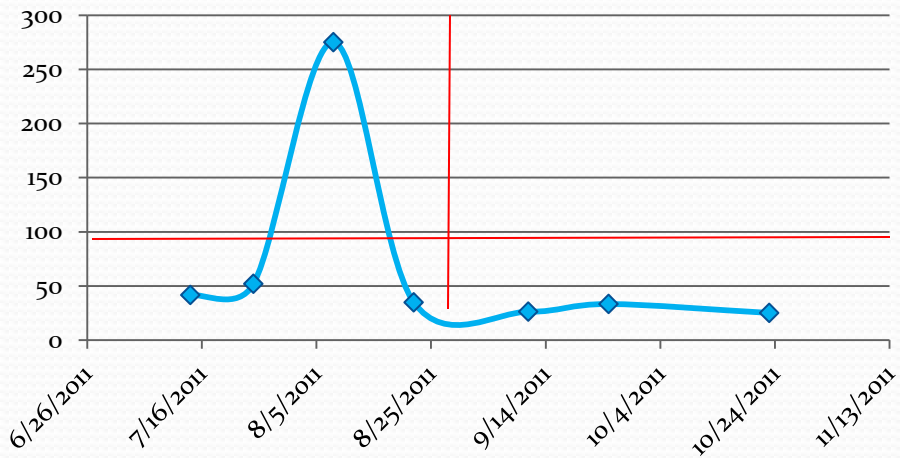
### Phosphorus - DR\_BeavBrk\_1524



### Phosphorus - DR\_NBDrfld\_2067



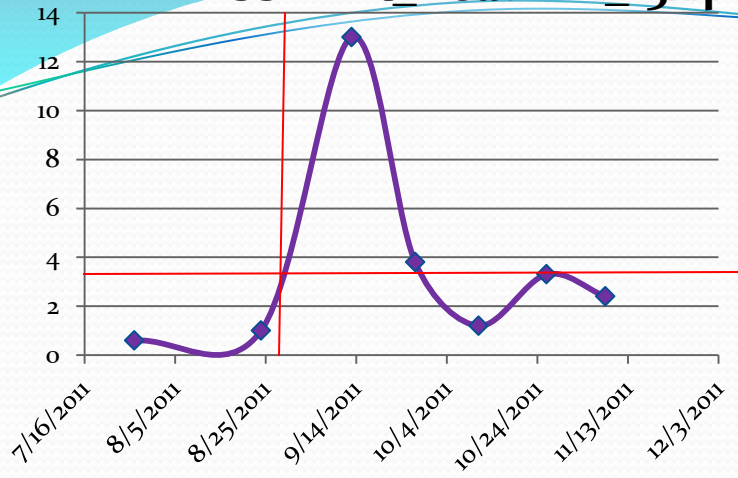
### Phosphorus - LCD\_IndBrk\_323



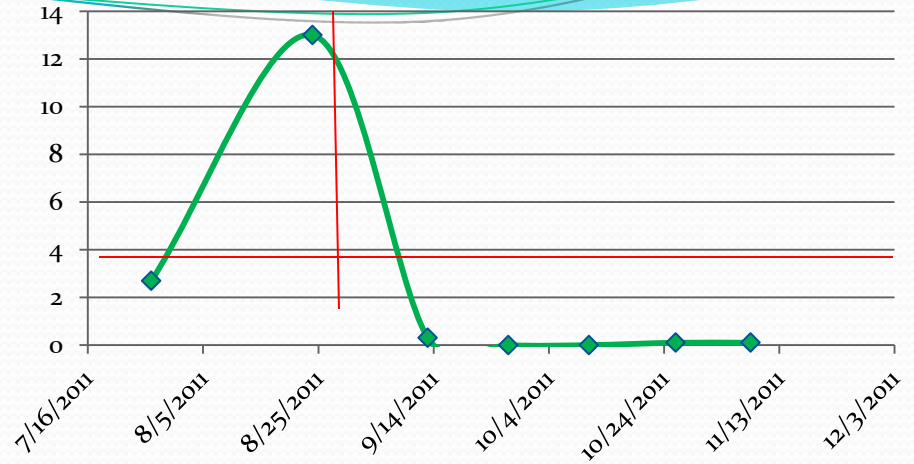
### Phosphorus - LCD\_PndBrk\_179



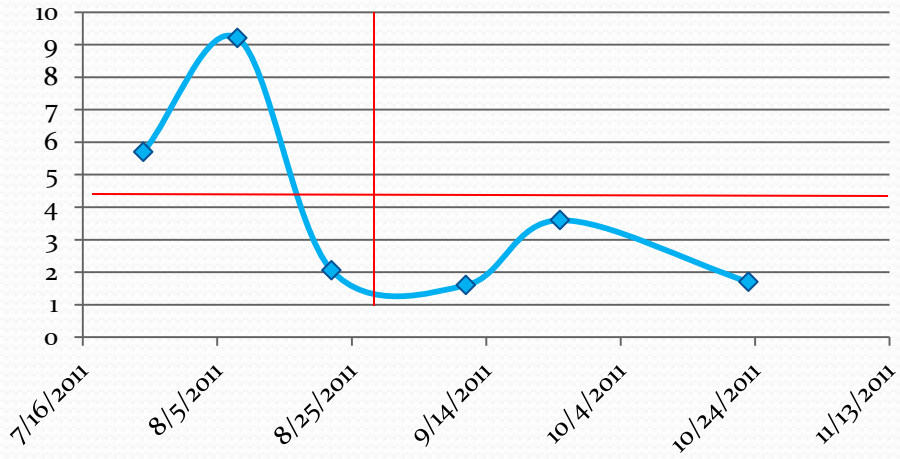
### TSS - DR\_BeavBrk\_1524



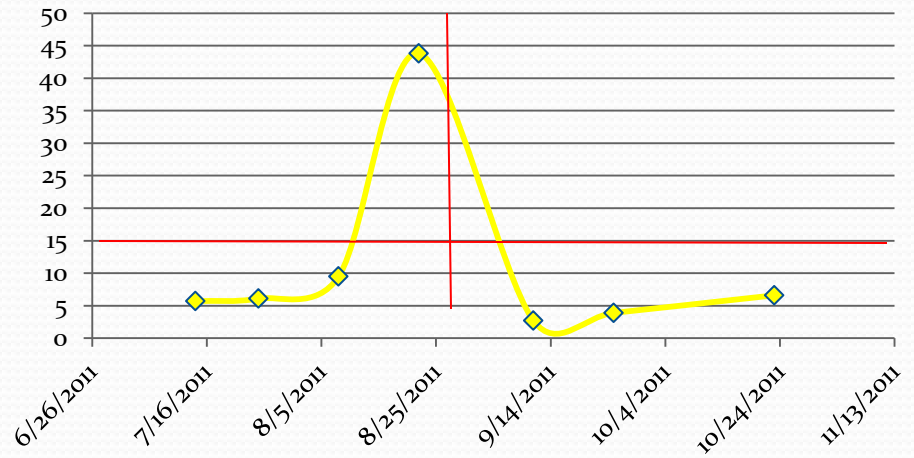
### TSS - DR\_NBDrfld\_2067



### TSS - LCD\_IndBrk\_323



### TSS - LCD\_PndBrk\_179



# Results: No Clear Pattern

- Embeddedness: 3 out of 4 decrease
- Site Assessment Score: 3 out of 4 decrease
- Bank Full Width: 3 out of 4 increase
- Total Coliform: No clear difference
- *E. coli*: Similar patterns to previous year
- Phosphorus: No clear pattern
- TSS: 3 out of 4 decrease

# Conclusion

- Small sample size – before/after data was only available for 4 sites
- Chemical Parameters
  - Instantaneous “snapshot”
- No clear conclusions can be made on the effect of Hurricane Irene on Vermont streams

# Further Research

- Macro-Invertebrate
  - Count
  - Diversity
  - EPT
- Wider range of data
- Long term effects
- Higher order streams

# Thank You



We love bugs!