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4-30-2008

### River Watch 2008

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# *Hanson Riverwatch*

## *Back To The River!*

*The State Of The Indian Head River 2007 - 2008*

# *The Team*



*Hanson Middle School*



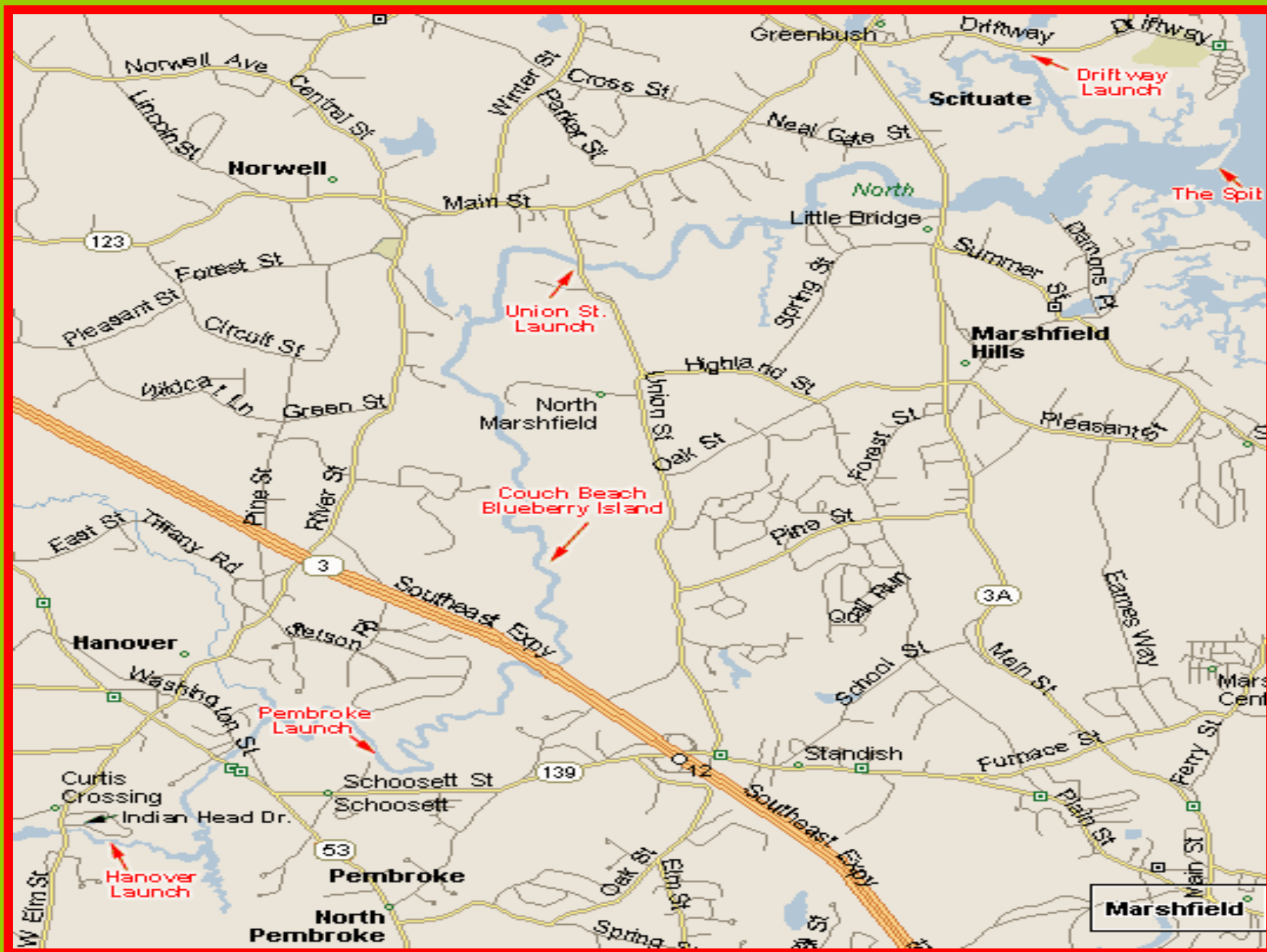
# *The Indian Head River*

- The Indian Head River forms the Northern Border of the Town of Hanson, Other towns that impact the water quality directly in the areas of study include Pembroke to the east and Hanover to the north, northeast.
- There are approximately 8 miles between our upstream site near Factory Pond and our downstream site at Ludham's Ford or as other's call it, Curtis' Crossing.
- The river covers about eight acres of land in this area and was most likely used as a fishing and travel spot for the Wompatuck Indians.
- A guide named James Luddam carried Governor Winthrop across the Indian Head River in 1632 in order to get to Weymouth, Massachusetts.
- Though the river is called The Drinkwater River in other towns, we have chosen to refer to it as the Indian Head River in the scope of our study.
- There is a small beaver population and the river is annually stocked with trout. Massachusetts Fish and Wildlife has posted the river in it's entirety from Forge pond in Hanover to route 3 in Norwell and Pembroke including Factory Pond as P6; fishing resources contaminated with mercury. If herring are caught, they must be thrown back into the river. This applies more to the Pembroke side of the river, as there is a fish ladder in Luddams Ford Park.
- The likely source of the contamination from the no longer existing Clapps Rubber Factory.
- Two new housing developments bracket the river just downstream of our site B location (State St.), one in the town of Hanson and the other in the town of Hanover.



# *Study Sites*





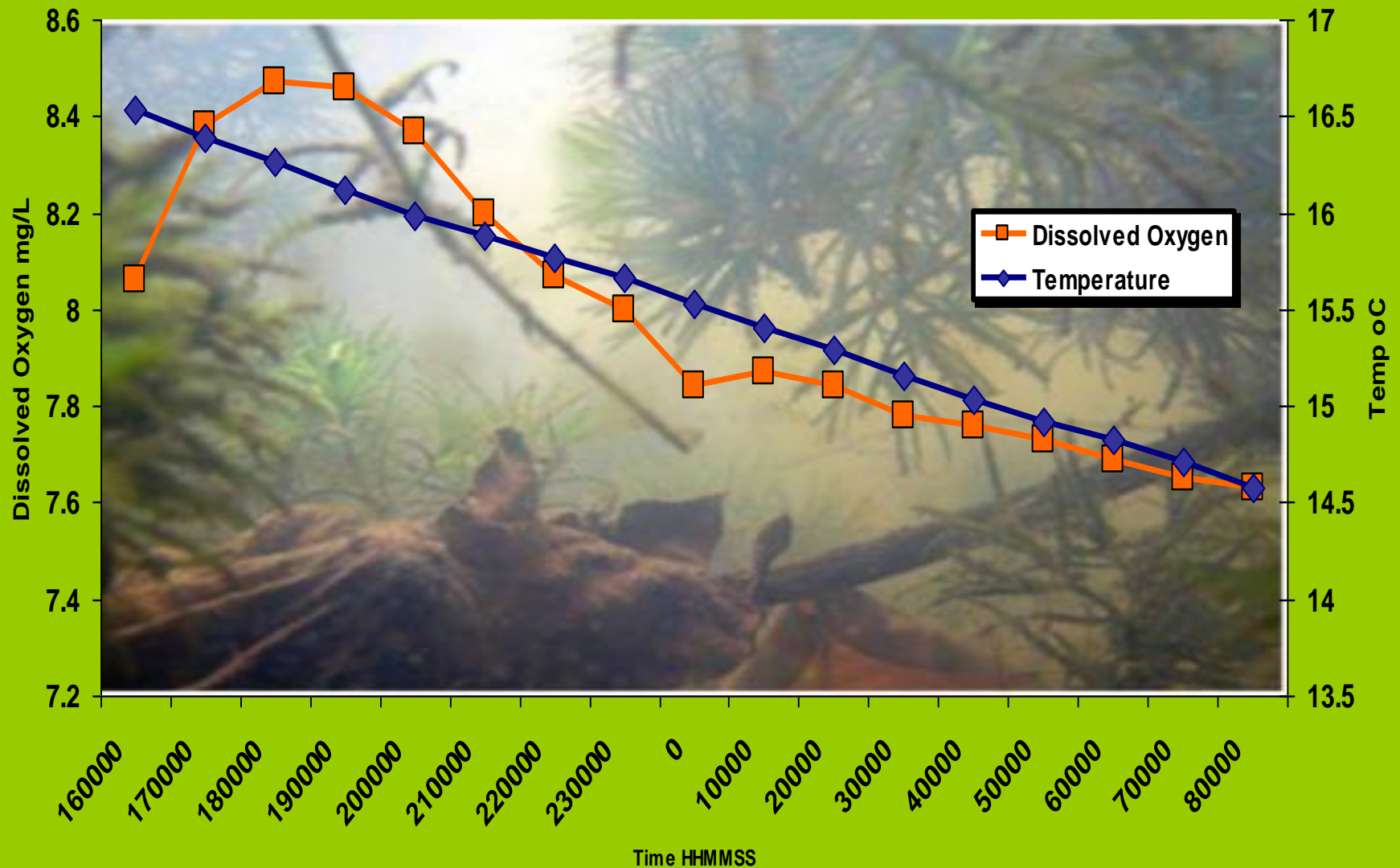


# ***SITE A***

## ***Broadway St. Hanson***

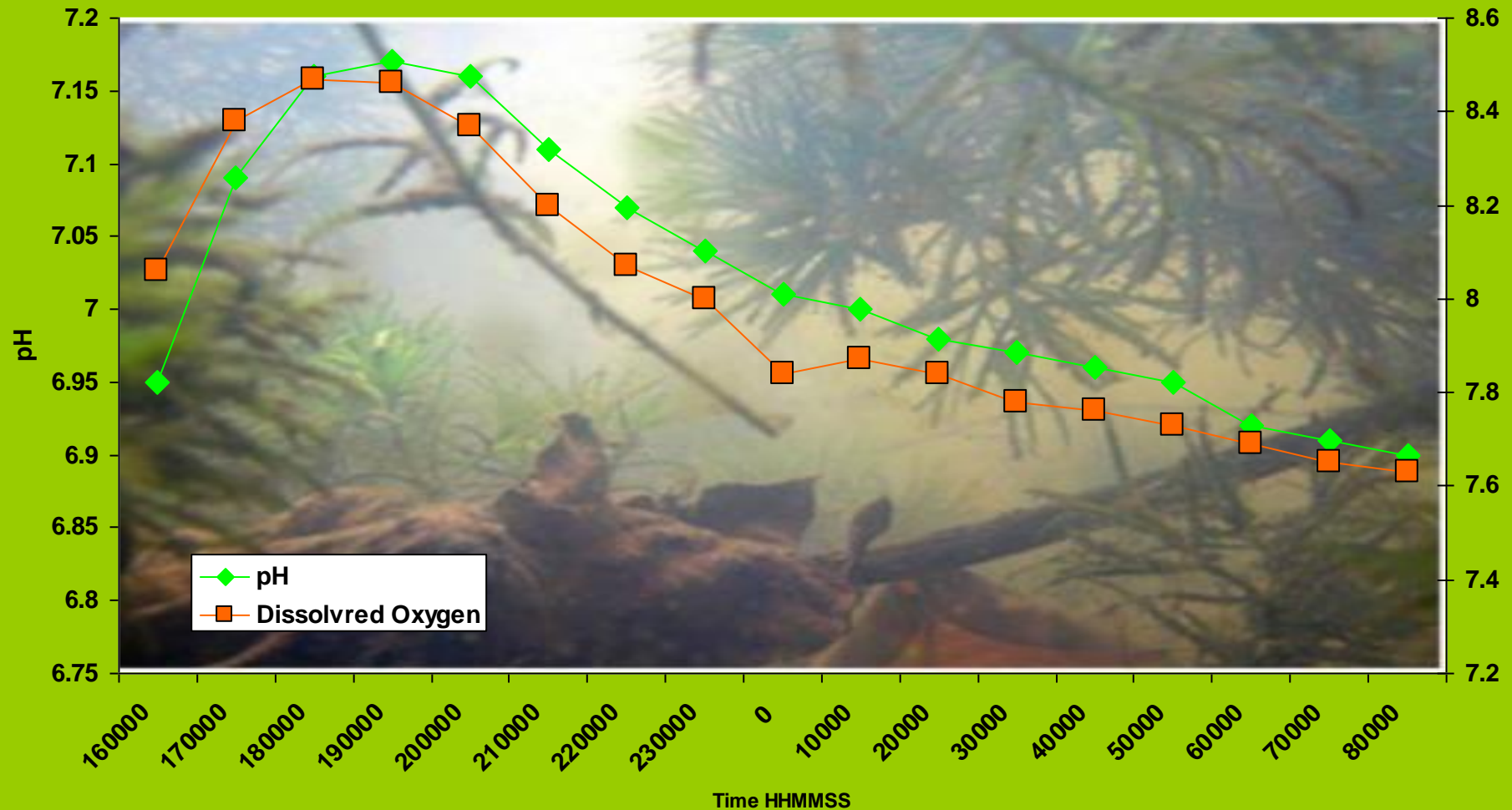


# Comparison of Dissolved Oxygen and Temperature Site: "A" Broadway St.





# Comparison of Dissolved Oxygen and pH For Site "A" Broadway St.



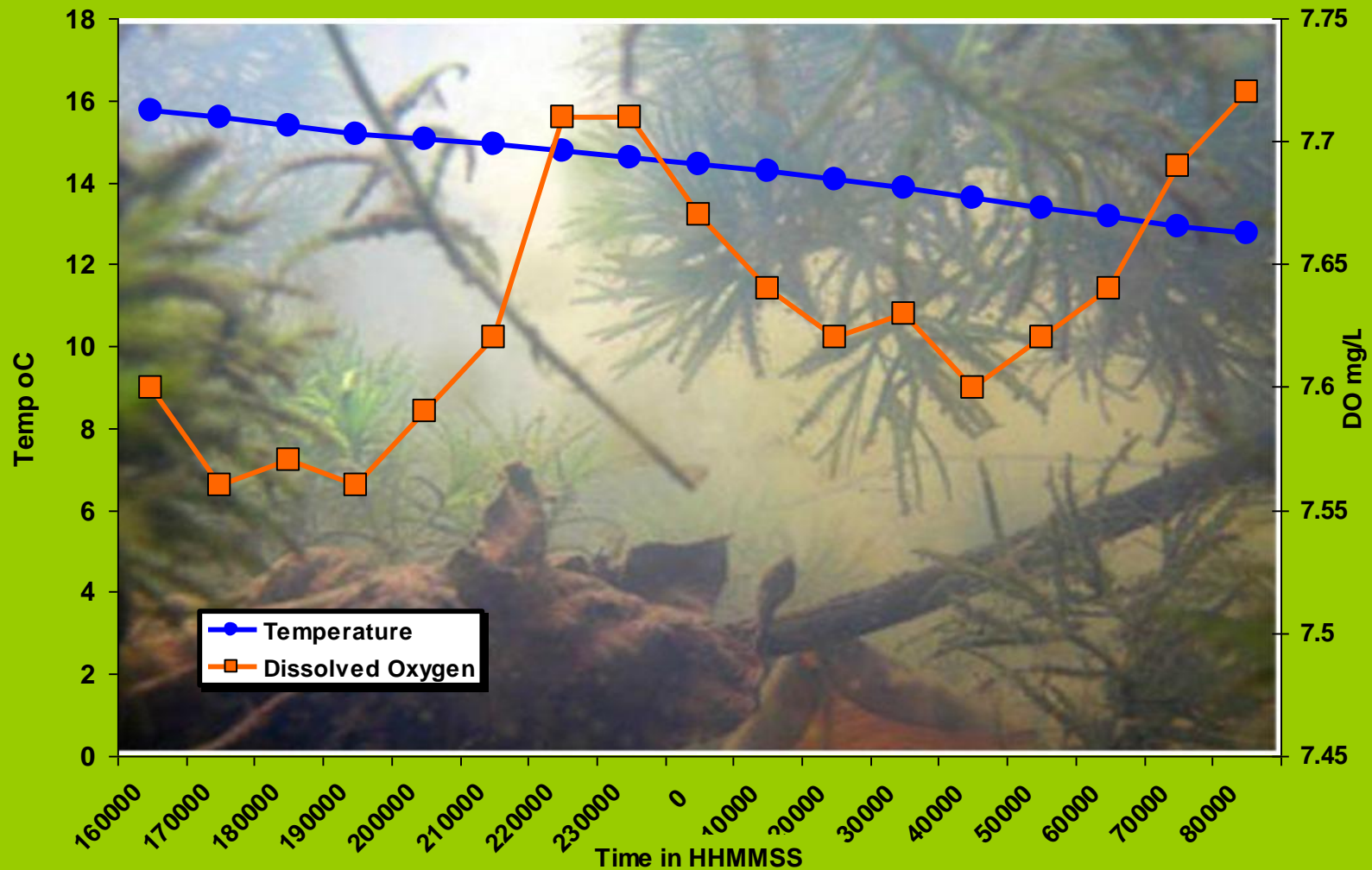
# ***SITE B***

## ***State St. Hanson***



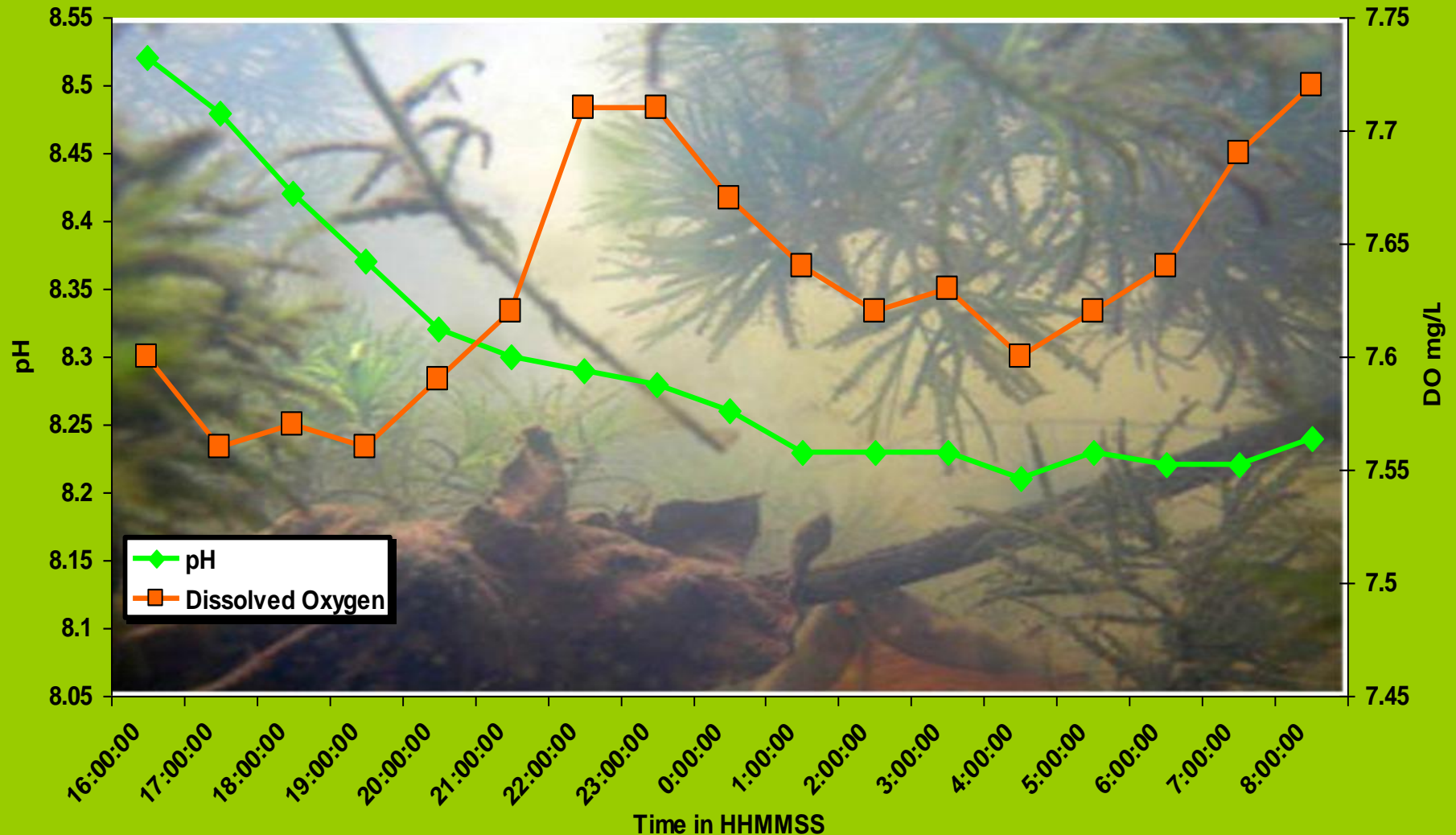


# Comparison of Dissolved Oxygen and Temperature Site: "B" State St.



# Comparison of Dissolved Oxygen and pH

## For Site "B" State St.

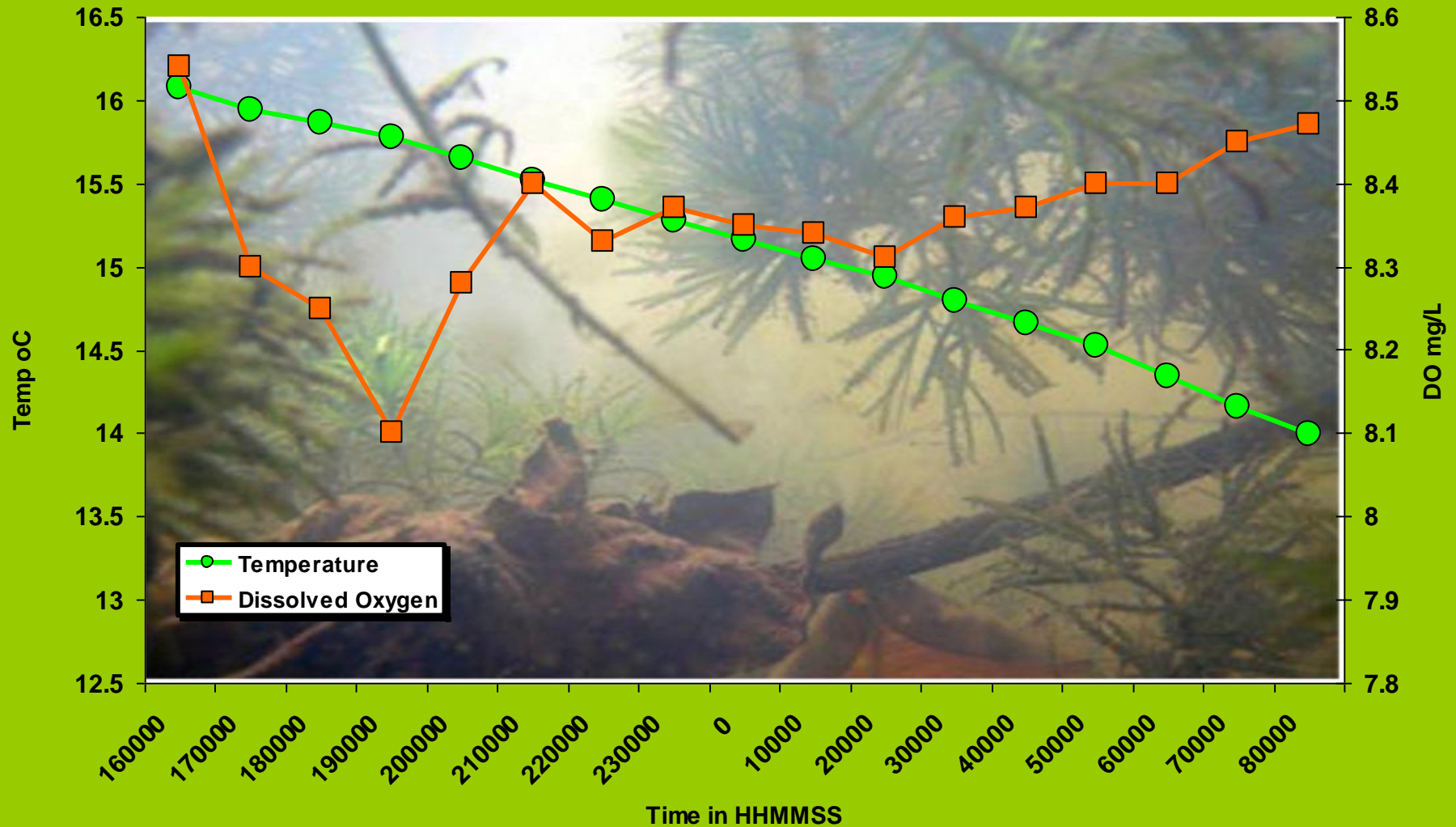




# *Site C: Curtis Crossing, Hanover*

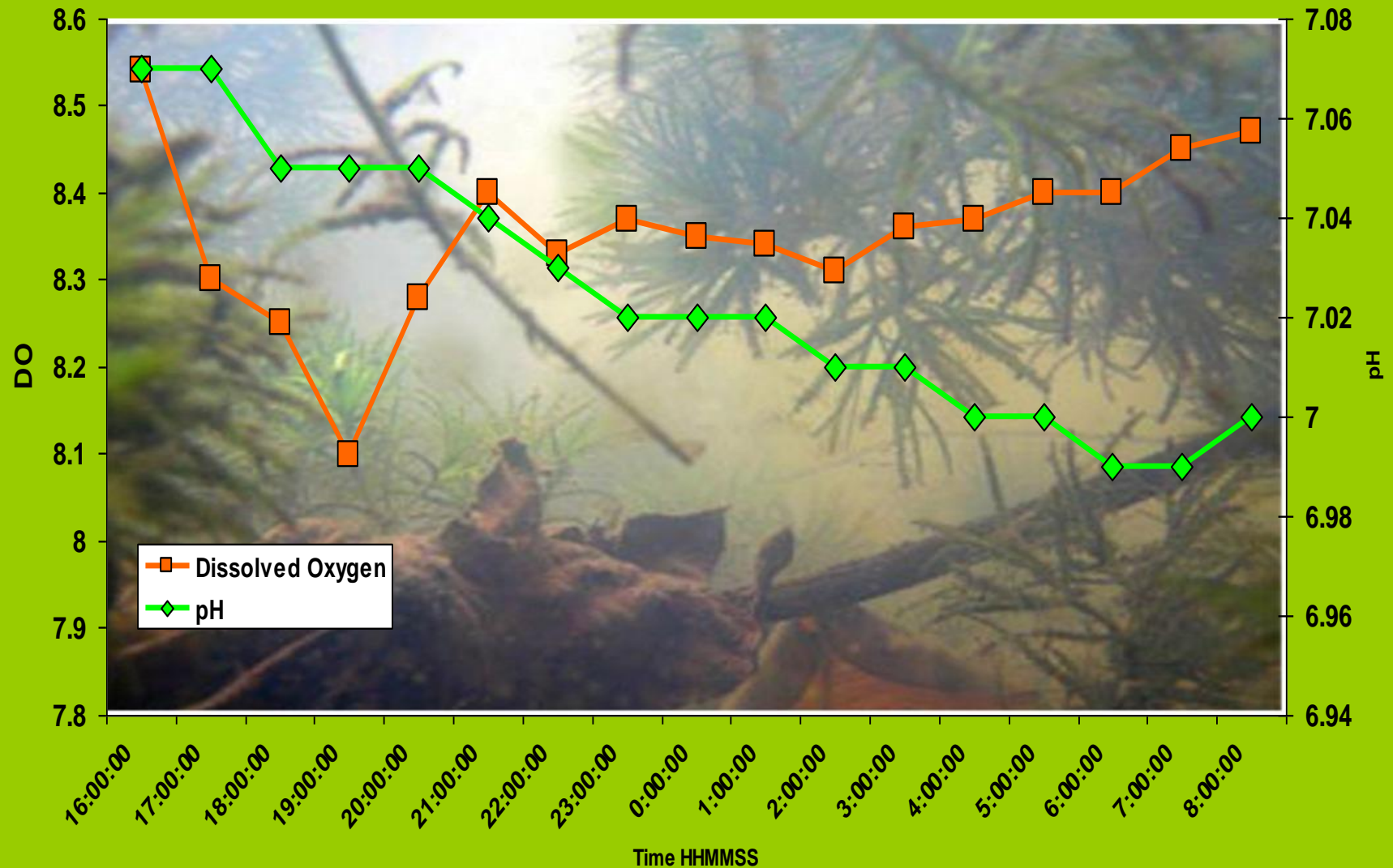


# Comparison of Dissolved Oxygen and Temperature Site: "C" Curtis Crossing

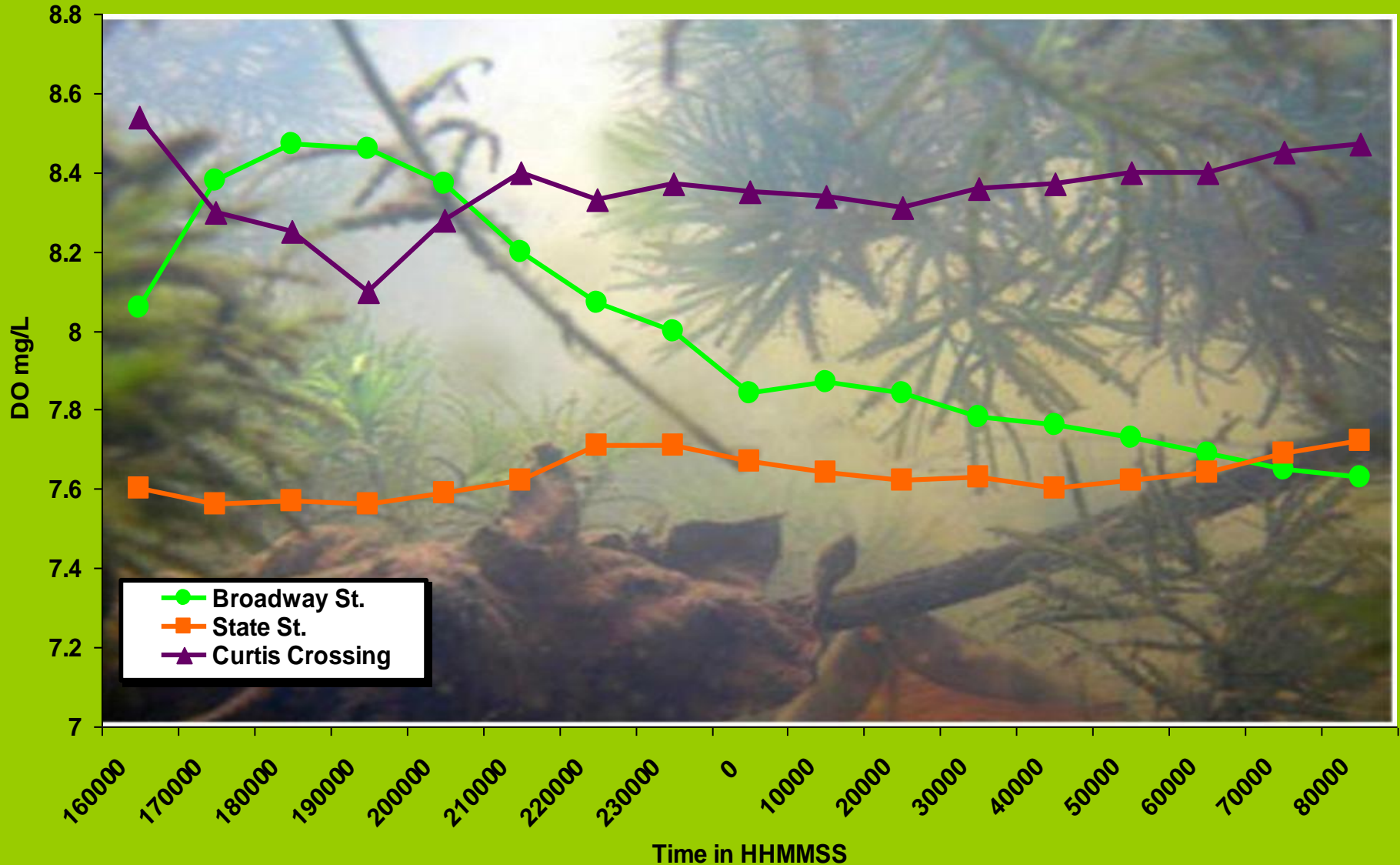




# Comparison of Dissolved Oxygen and pH For Site "C" Curtis Crossing

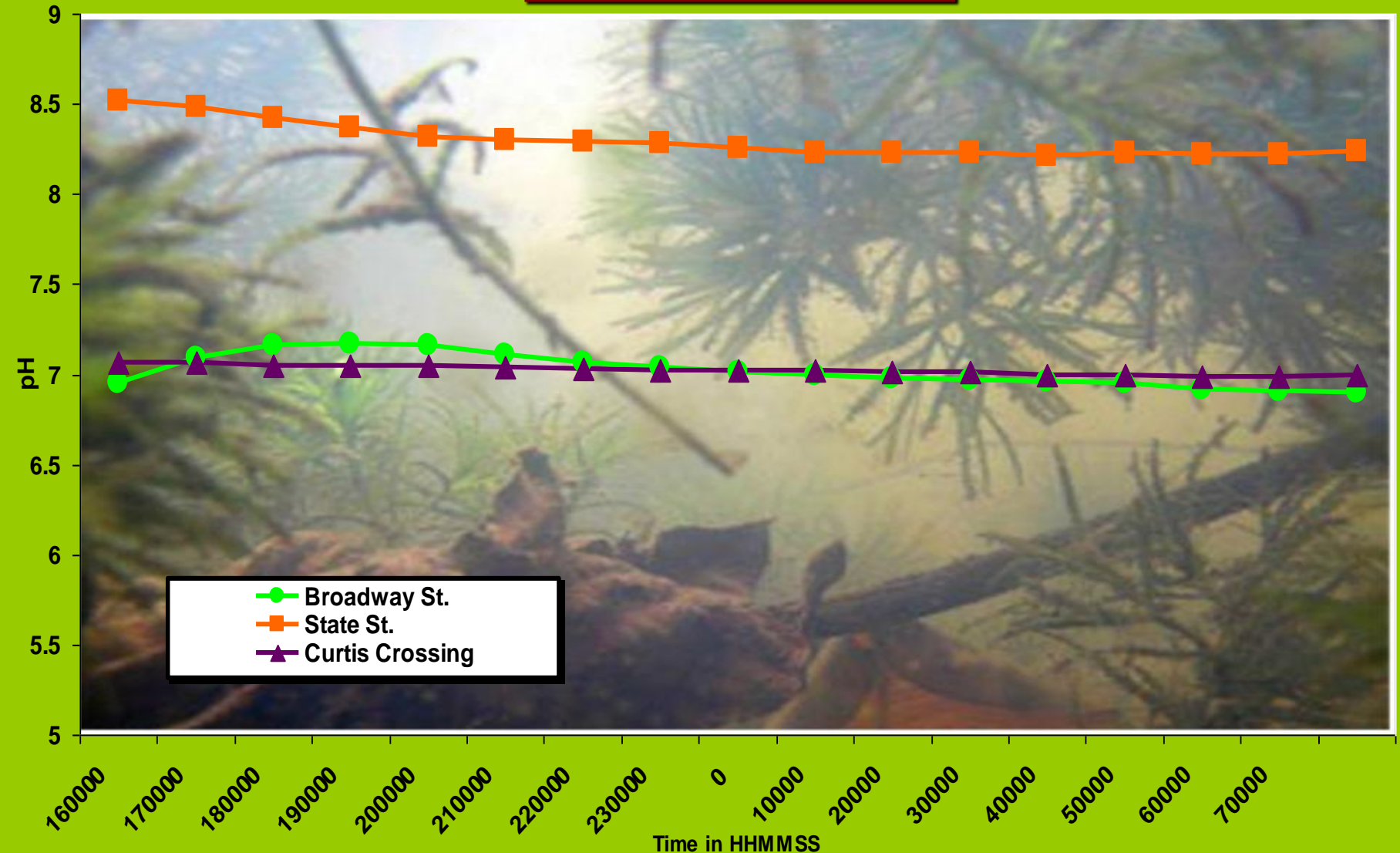


# Comparison Of Dissolved Oxygen (mg/L) At 3 Different Test Sites 10/26/07

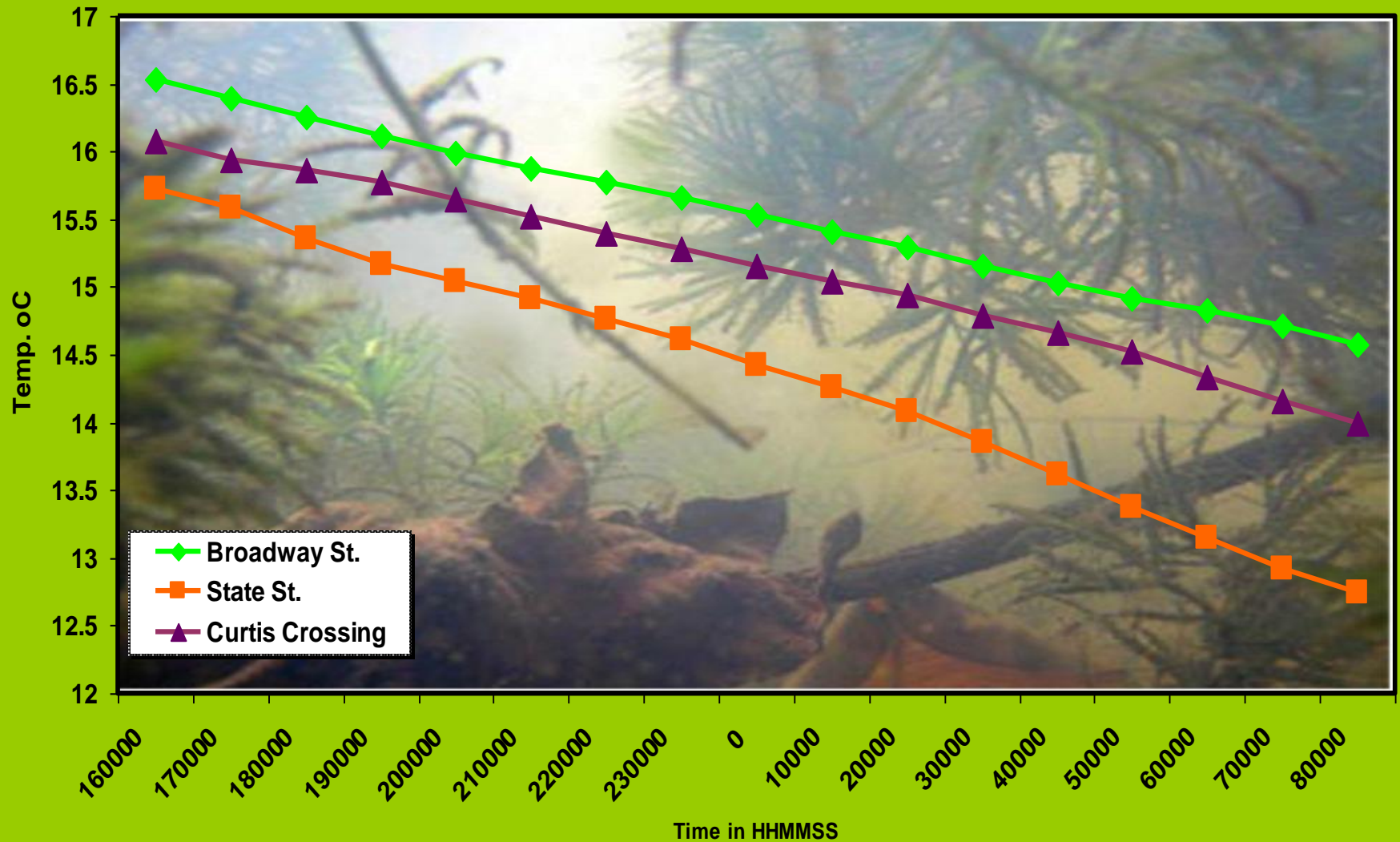




# Comparison Of pH At 3 Different Test Sites 10/26/07

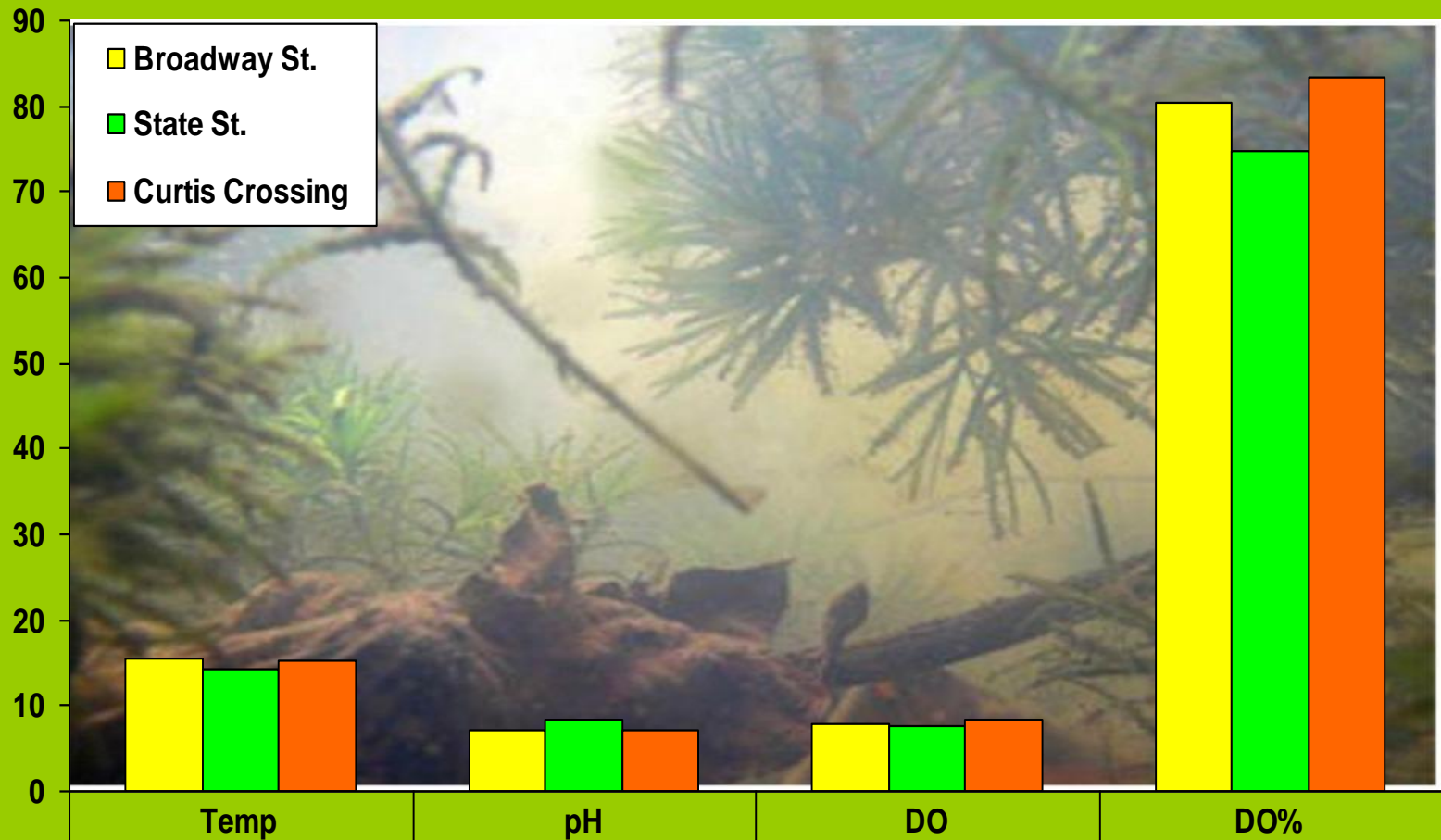


# Comparison Of Temperature, oC At 3 Different Test Sites 10/26/07





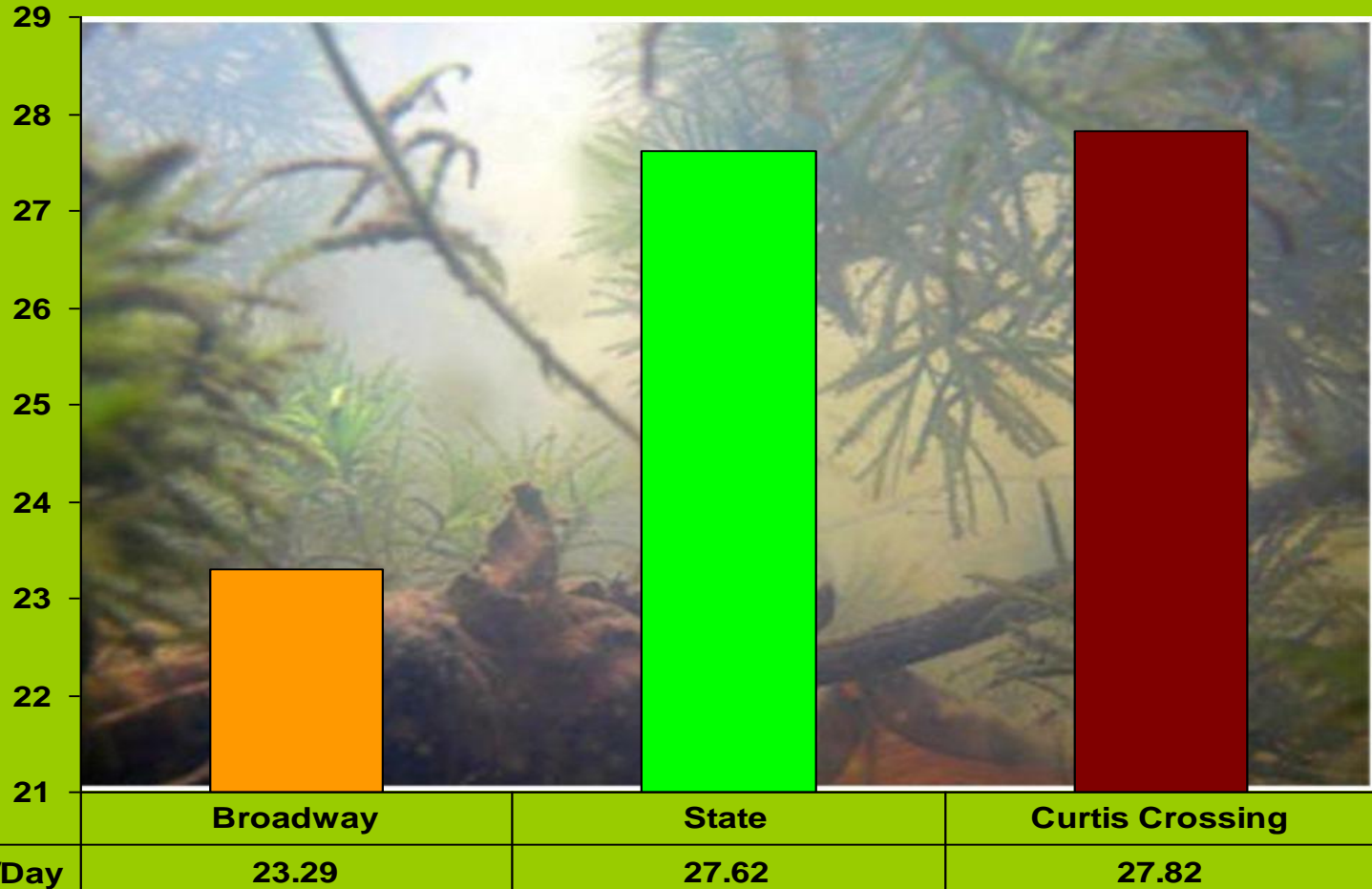
# Average Temperature, pH and Oxygen Saturation For Three Study Sites



Broadway St.	15.53294118	7.020588235	7.988235294	80.4
State St.	14.33058824	8.297058824	7.632352941	74.81176471
Curtis Crossing	15.12411765	7.024705882	8.354117647	83.29411765

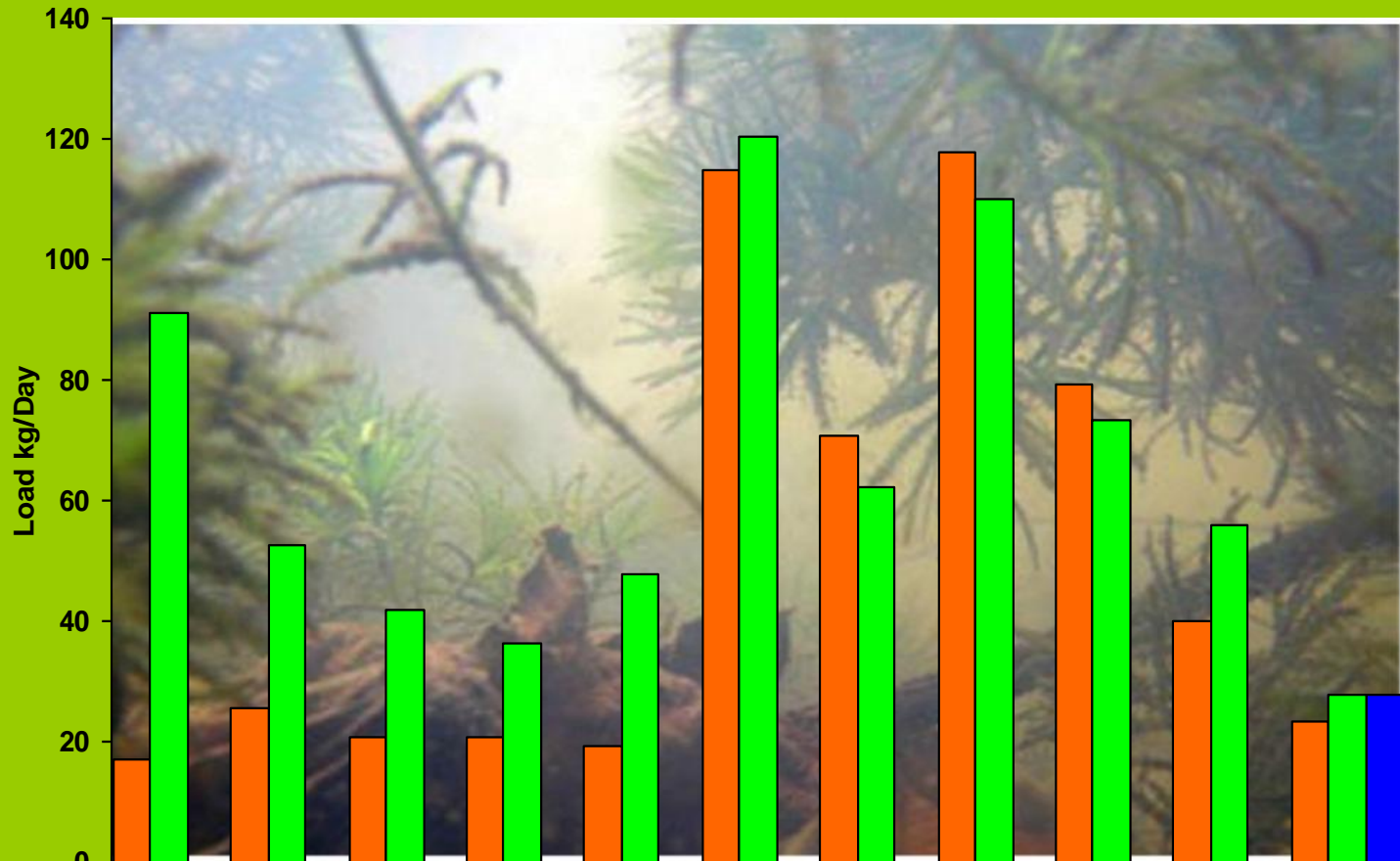
# Comparison of Nitrogen Load in Kg/Day For Three Study Sites

## October 26, 2007





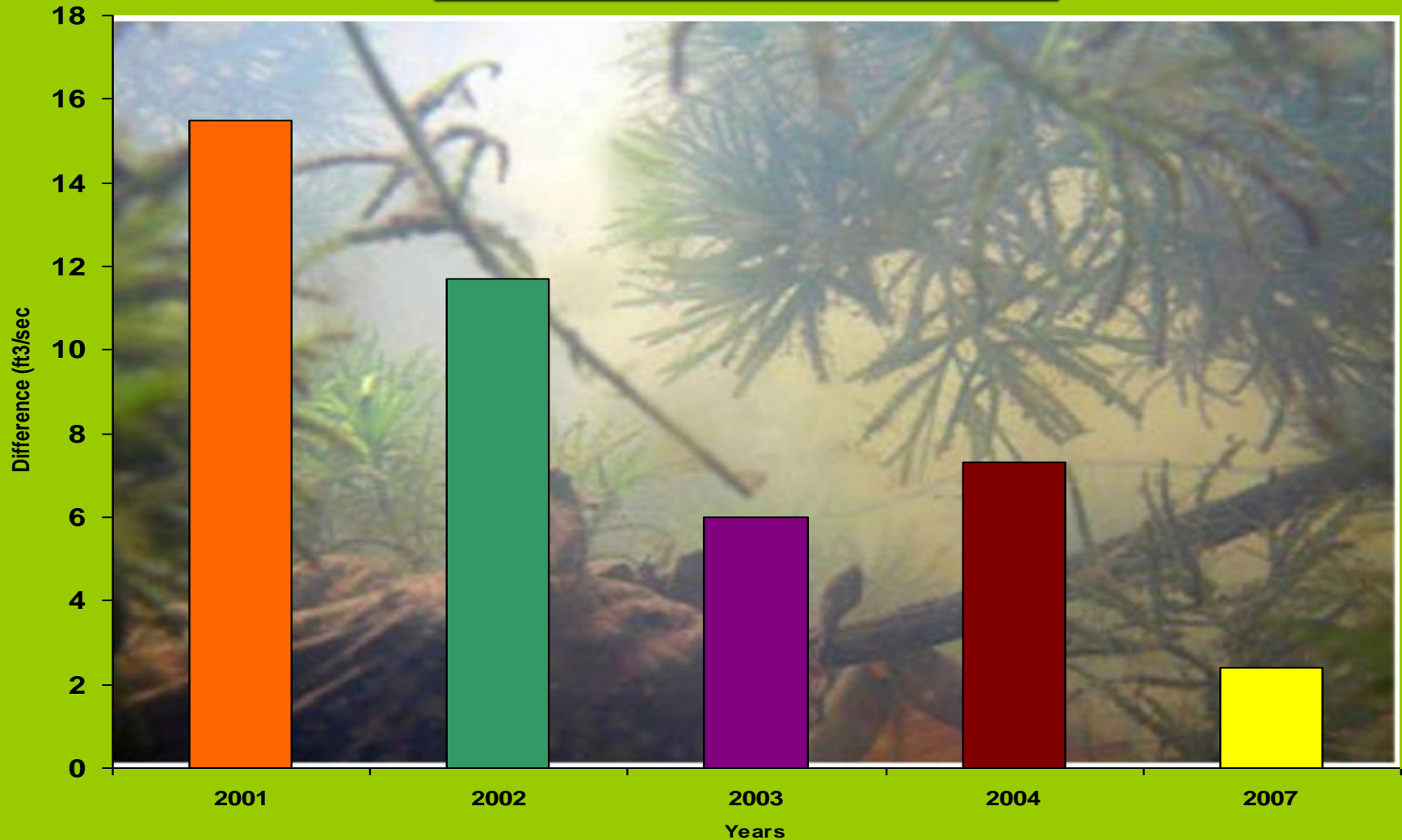
# Comparison of Nitrogen Load At Three Study Sites Over A Six Year Period



	2001	2002	2002	2002	2003	2003	2003	2004	2004	2004	2007
■ Broadway St.	16.95	25.72	20.67	20.67	19.264	114.9	70.6	117.6	79.1	40	23.29
■ Curtis Crossing	90.98	52.72	41.8	36.47	47.88	120.5	62.275	109.9	73.3	56	27.62
■ State St.											27.82

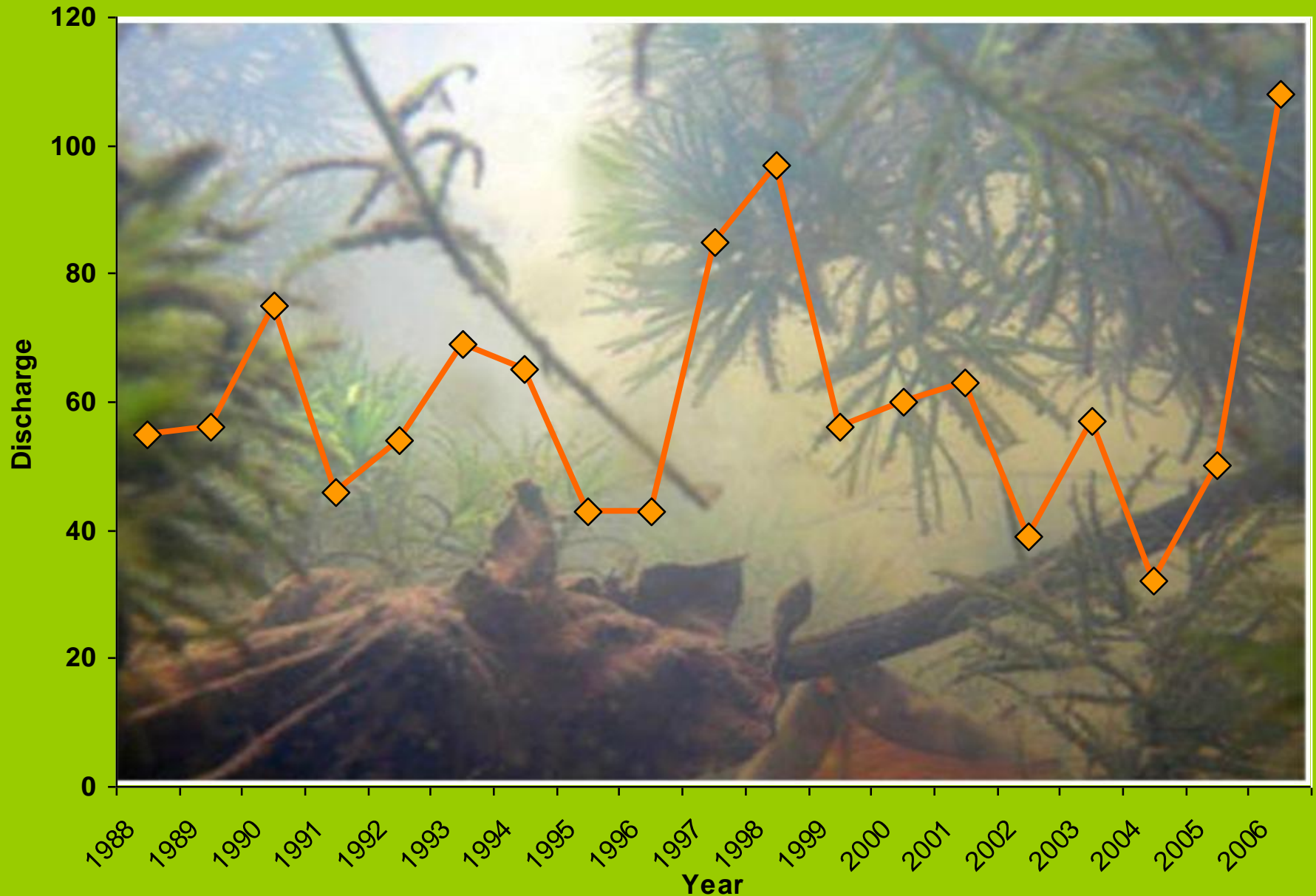
Year

*Differences in Discharge:*  
*Broadway St. And Curtis Crossing*  
*Over A Six Year Period*





## Mean Discharge (ft<sup>3</sup>/sec) By USGS Stream Gage Over a 16 Year Period: Site "C" Curtis Crossing



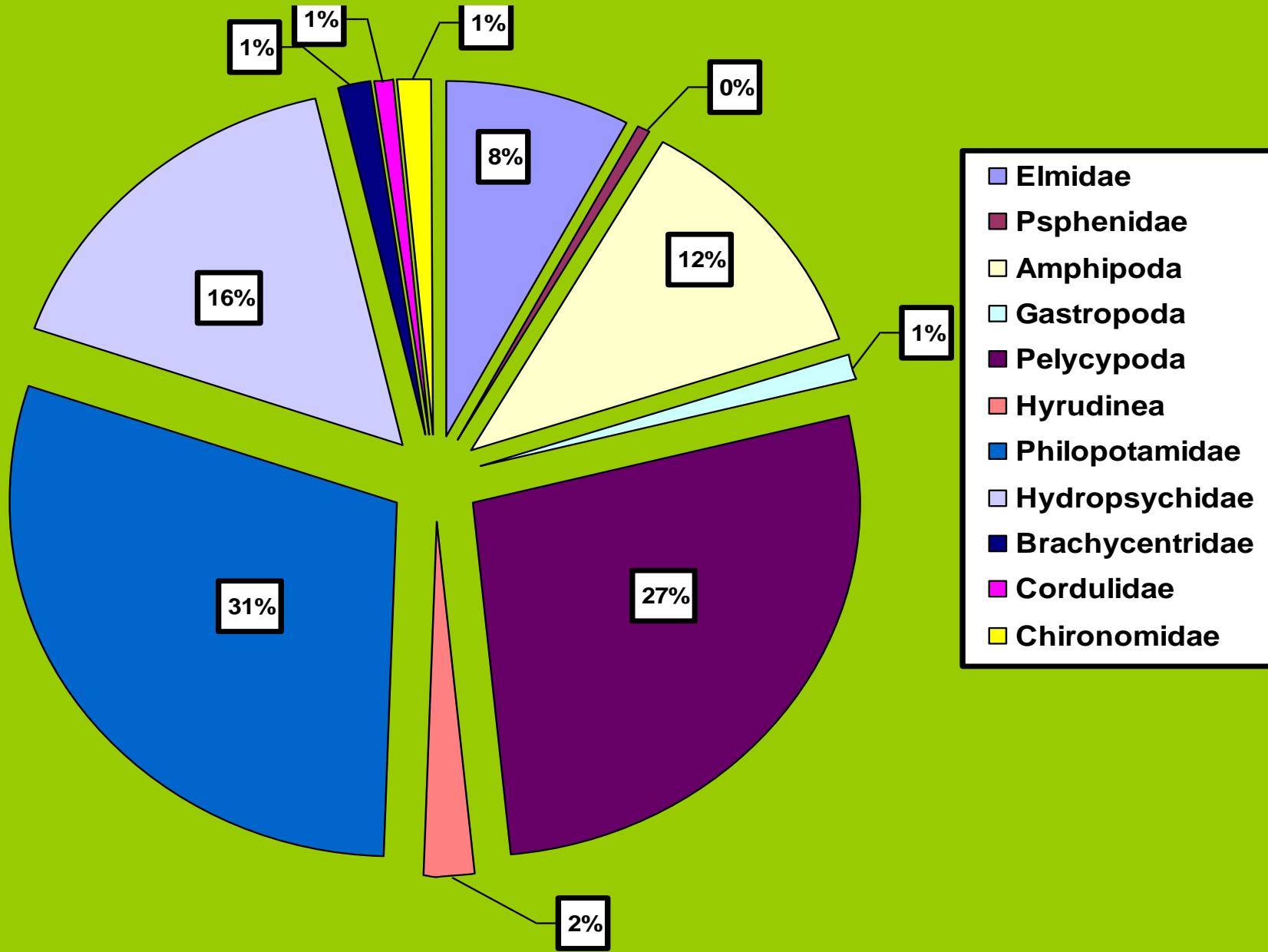


*Macroinvertebrates*



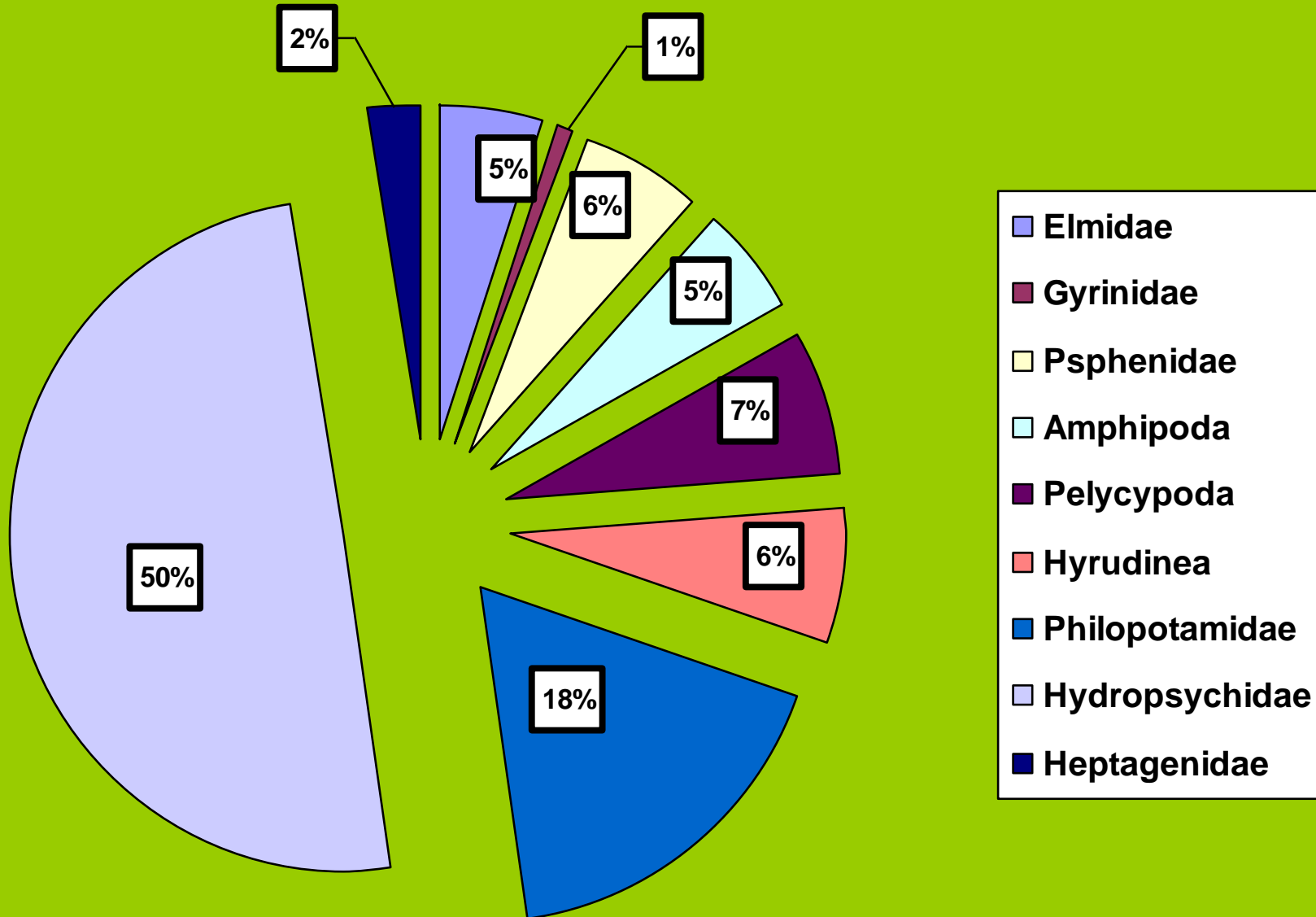
***FBI = 4.538***

***SITE A***



***FBI = 3.912***

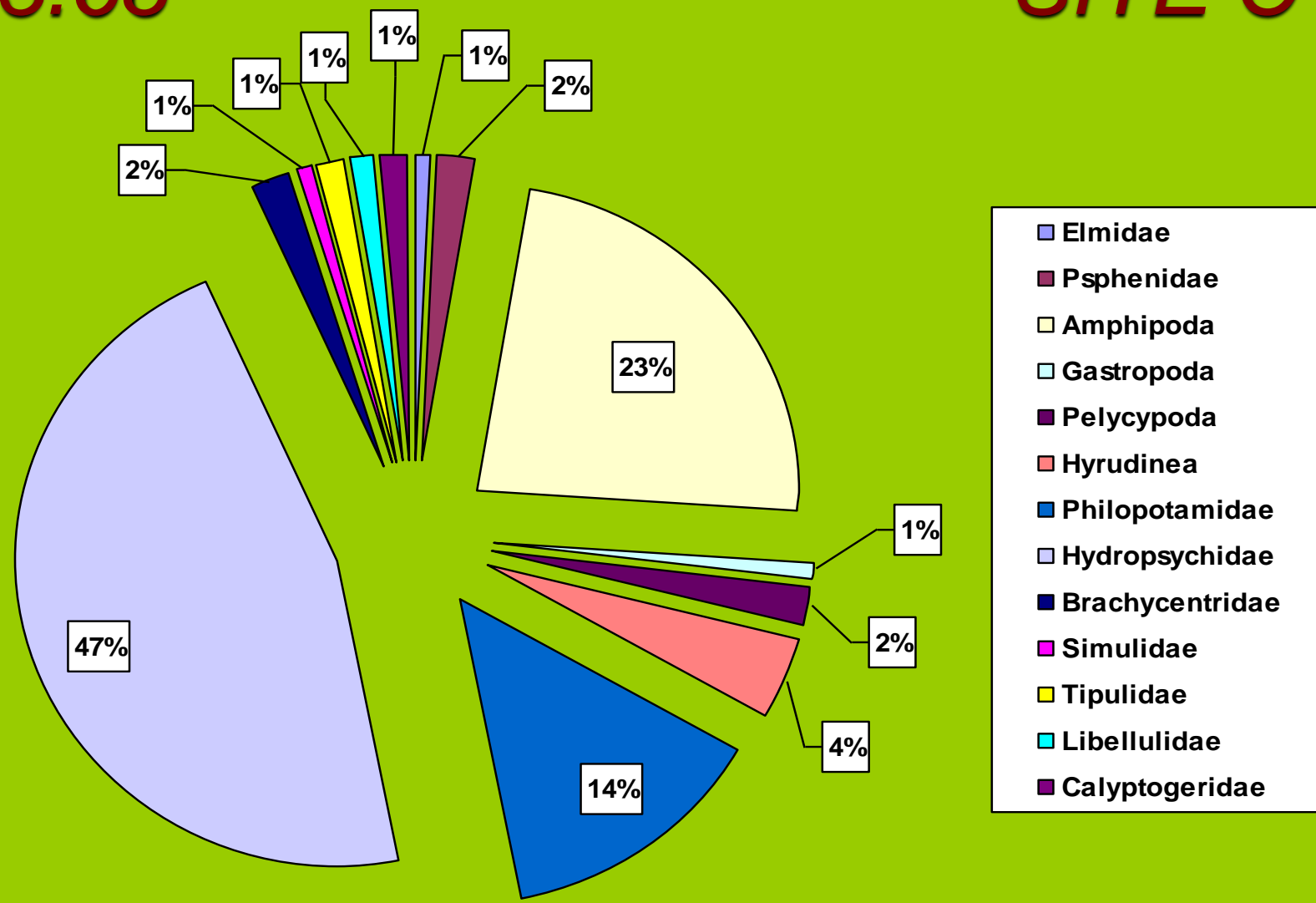
***SITE B***



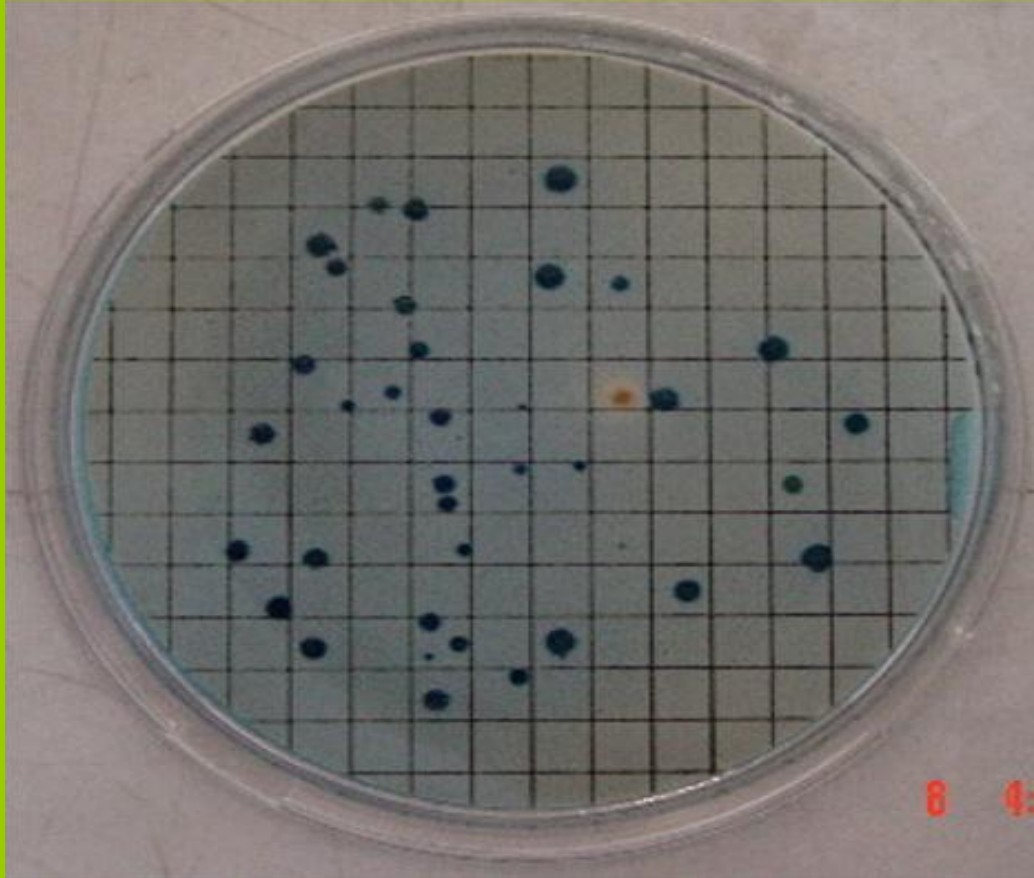


***FBI = 3.68***

***SITE C***



# *Fecal Coliform*



*Average < 35 colonies per 100 ml*



**Lab Geeks  
Unite!**





I see it but I  
don't believe it!

I don't see  
anything

Did you  
see that?



# ***CONCLUSION***

