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Characterization Survey of Rattlesnake Brook

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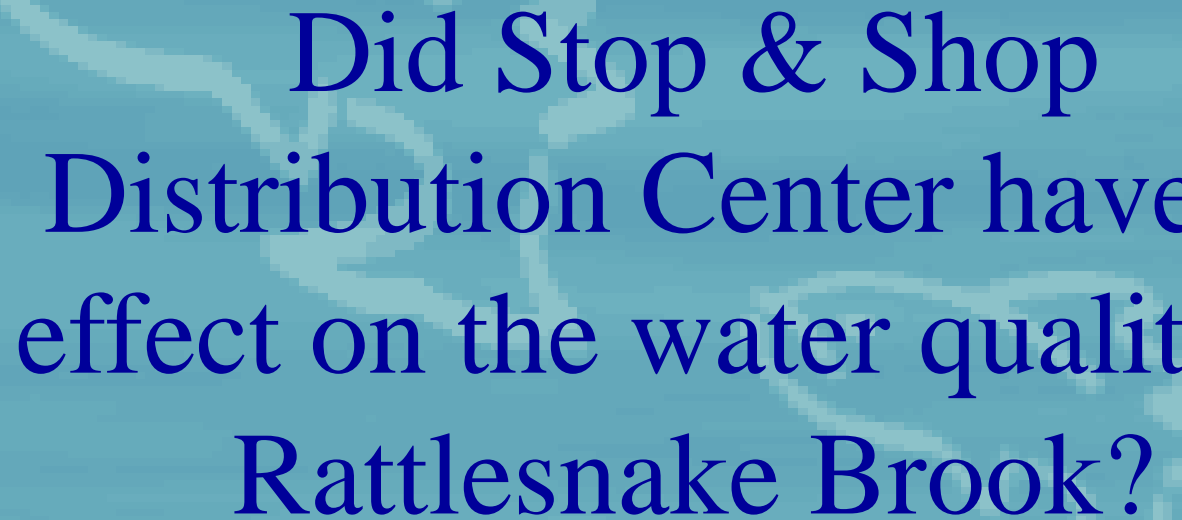
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Preliminary Survey of Rattlesnake Brook

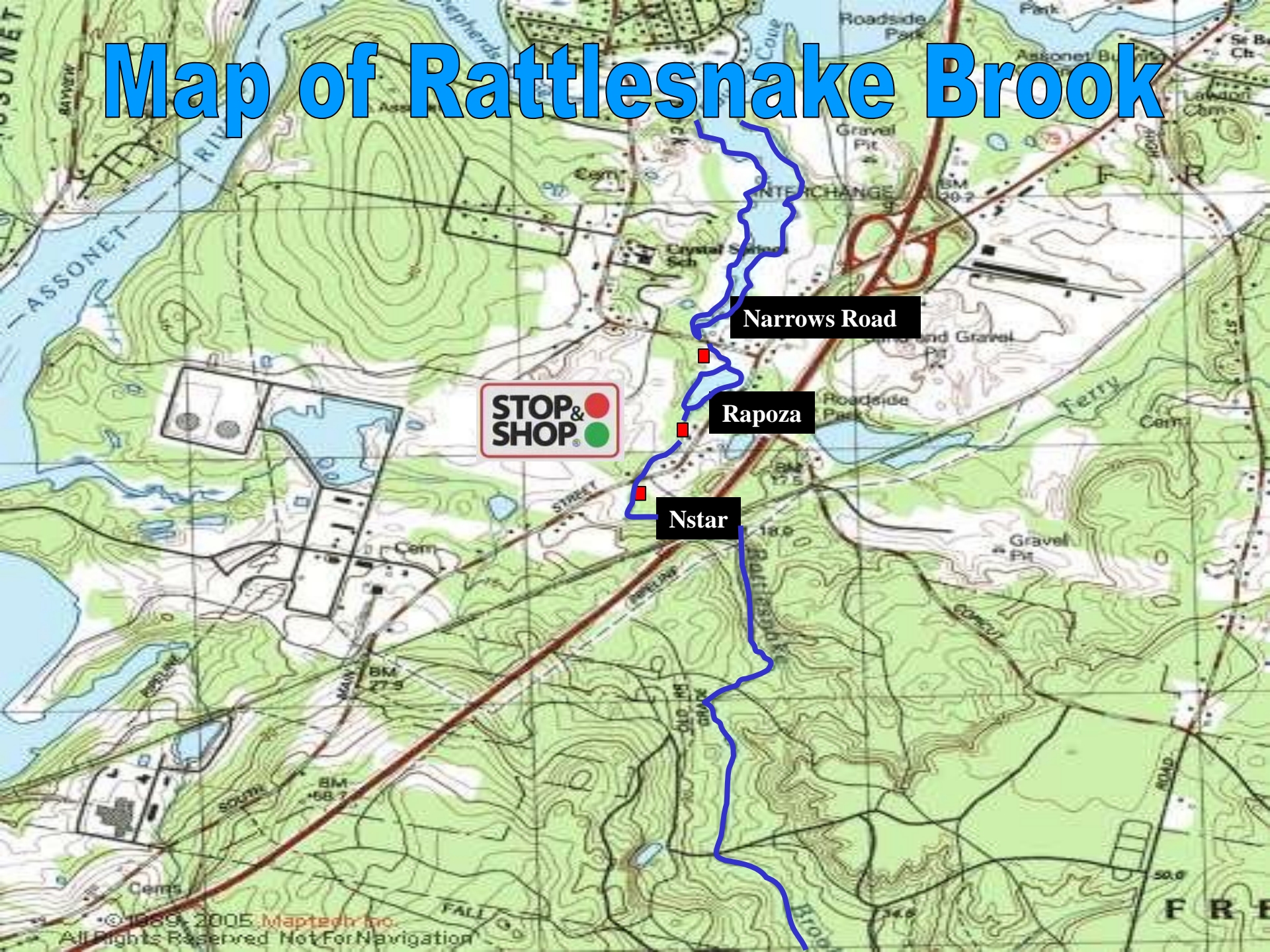
**By: Meaghan Rodenbush, Kristy Mckillop
Cody Velozo, Nick Velozo, Brian Costa, Gregg
Tavares, Ryan Campbell**

Introduction:

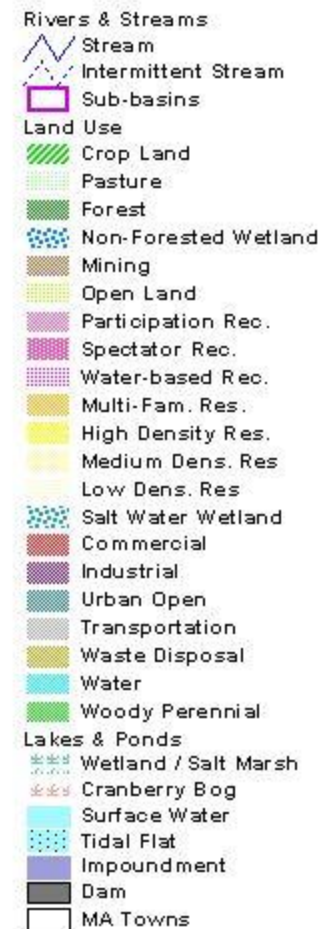
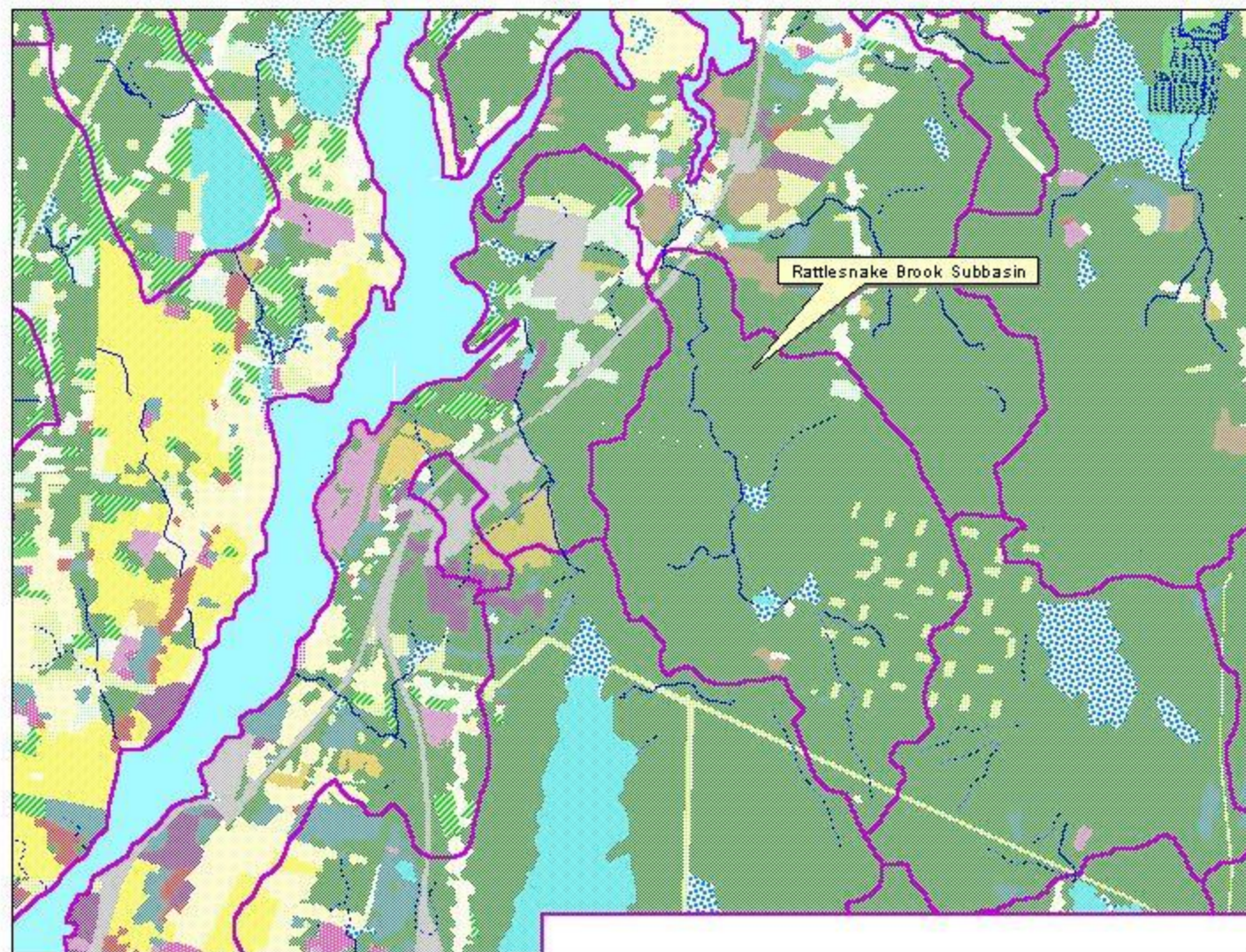


Did Stop & Shop
Distribution Center have an
effect on the water quality of
Rattlesnake Brook?

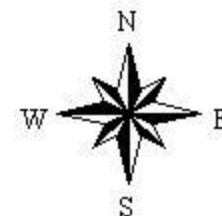
Map of Rattlesnake Brook



Land Uses around Rattlesnake Brook



0.6 0 0.6 1.2 1.8 2.4 3.0 3.6 4.2 4.8 Miles



NSTAR



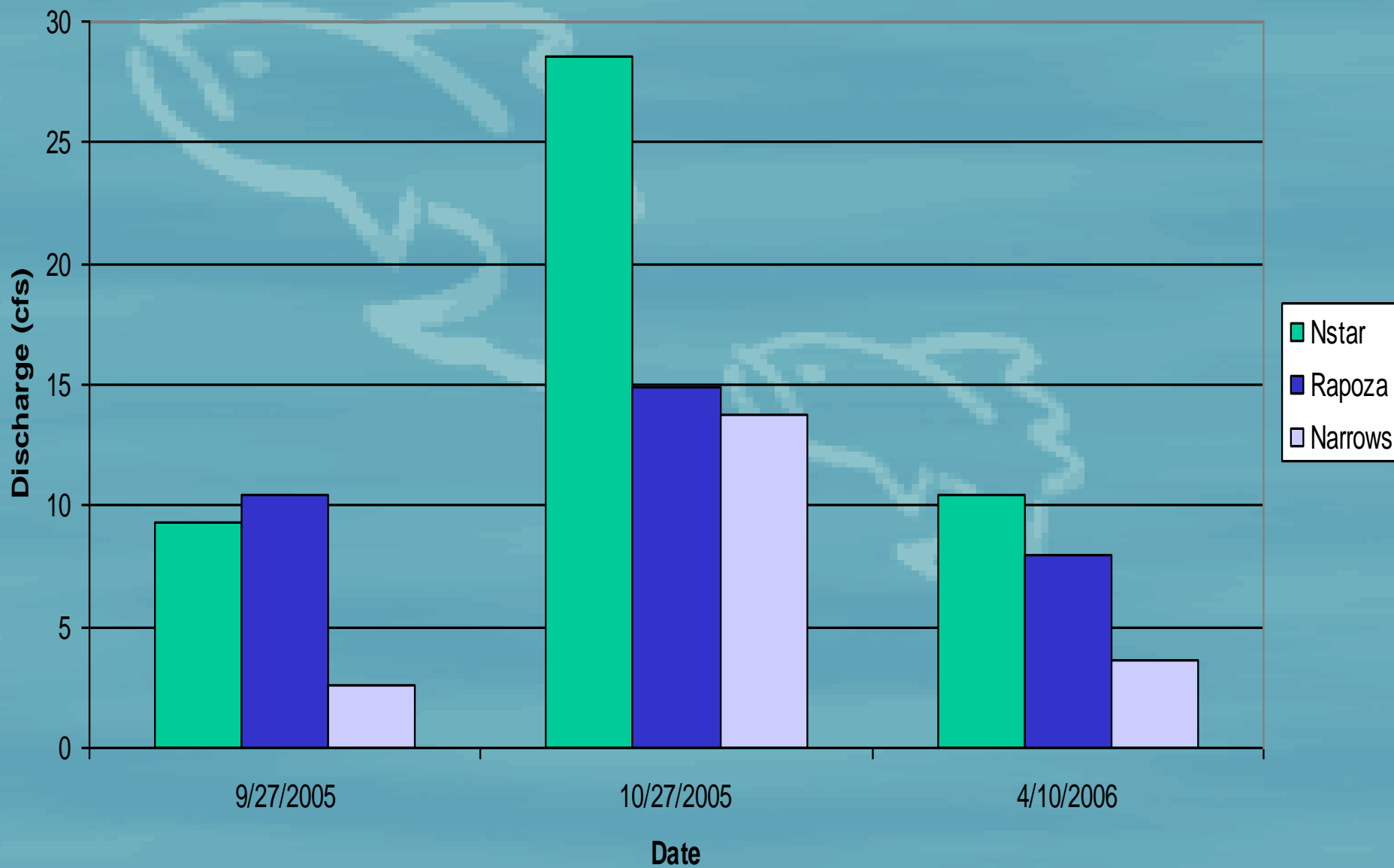
Narrows Road



Rapoza



Discharge of Rattlesnake Brook during 2005 and 2006

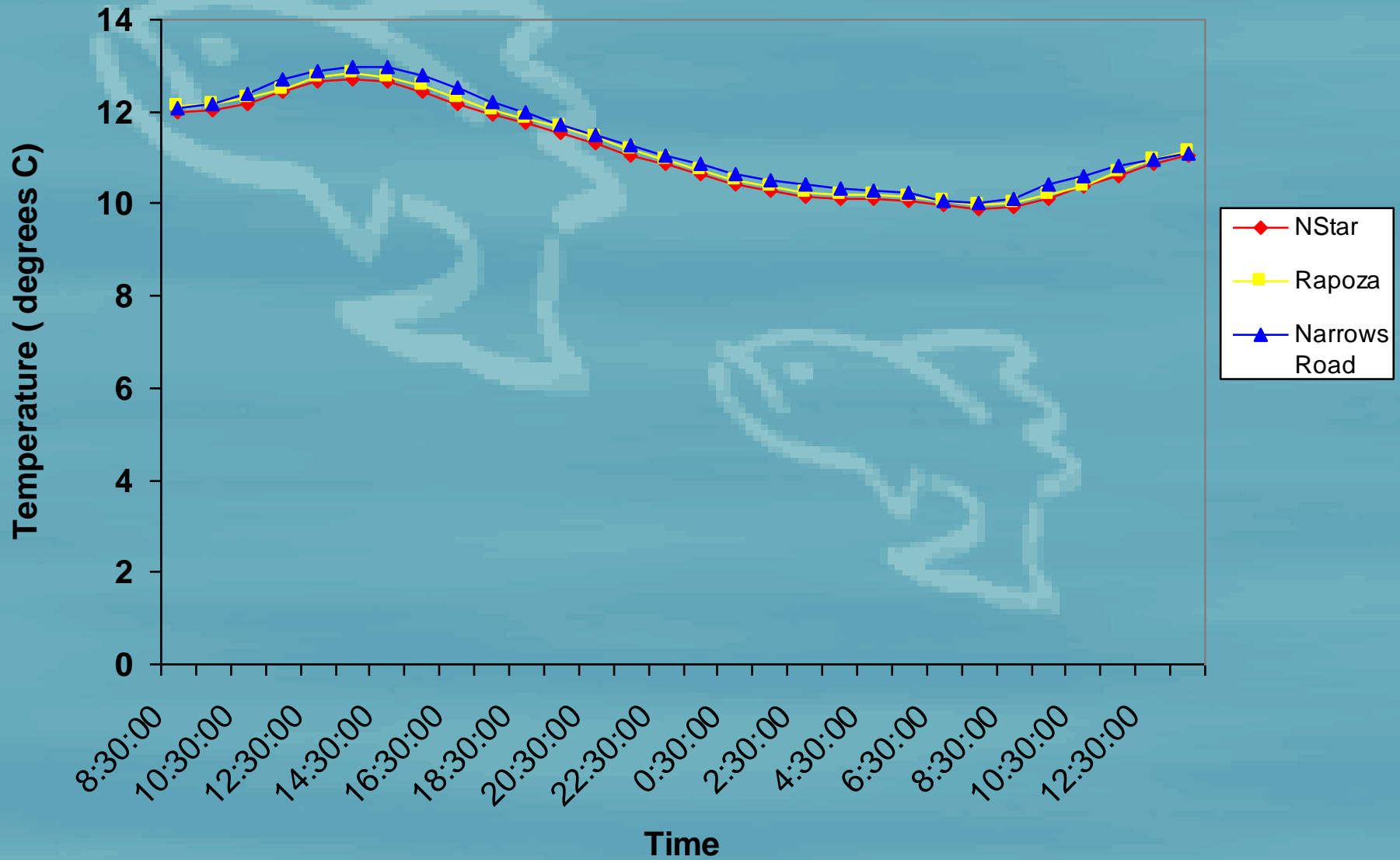


History of Rattlesnake Brook

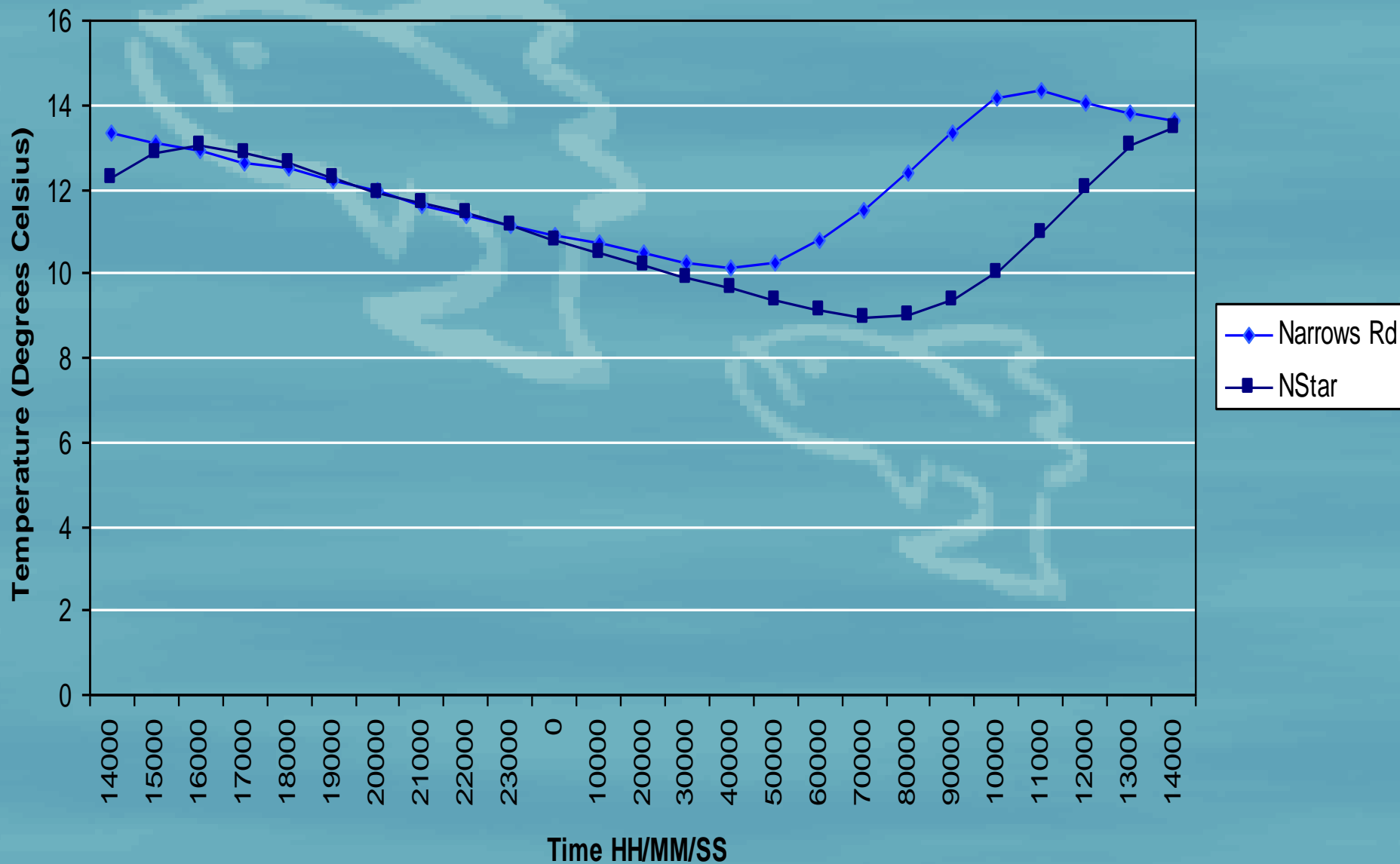
Interview with Carl Rapoza

- Stop & Shop Distribution Center completed in 2005
- Includes large expanse of asphalt with fueling depots and maintenance areas
- Elevation of the area lowered from previous gravel pit height
- Drainage lagoons located near N. Main Street on Stop & Shop property
- Overflow drainage into Terry Brook (north of Rattlesnake Brook)

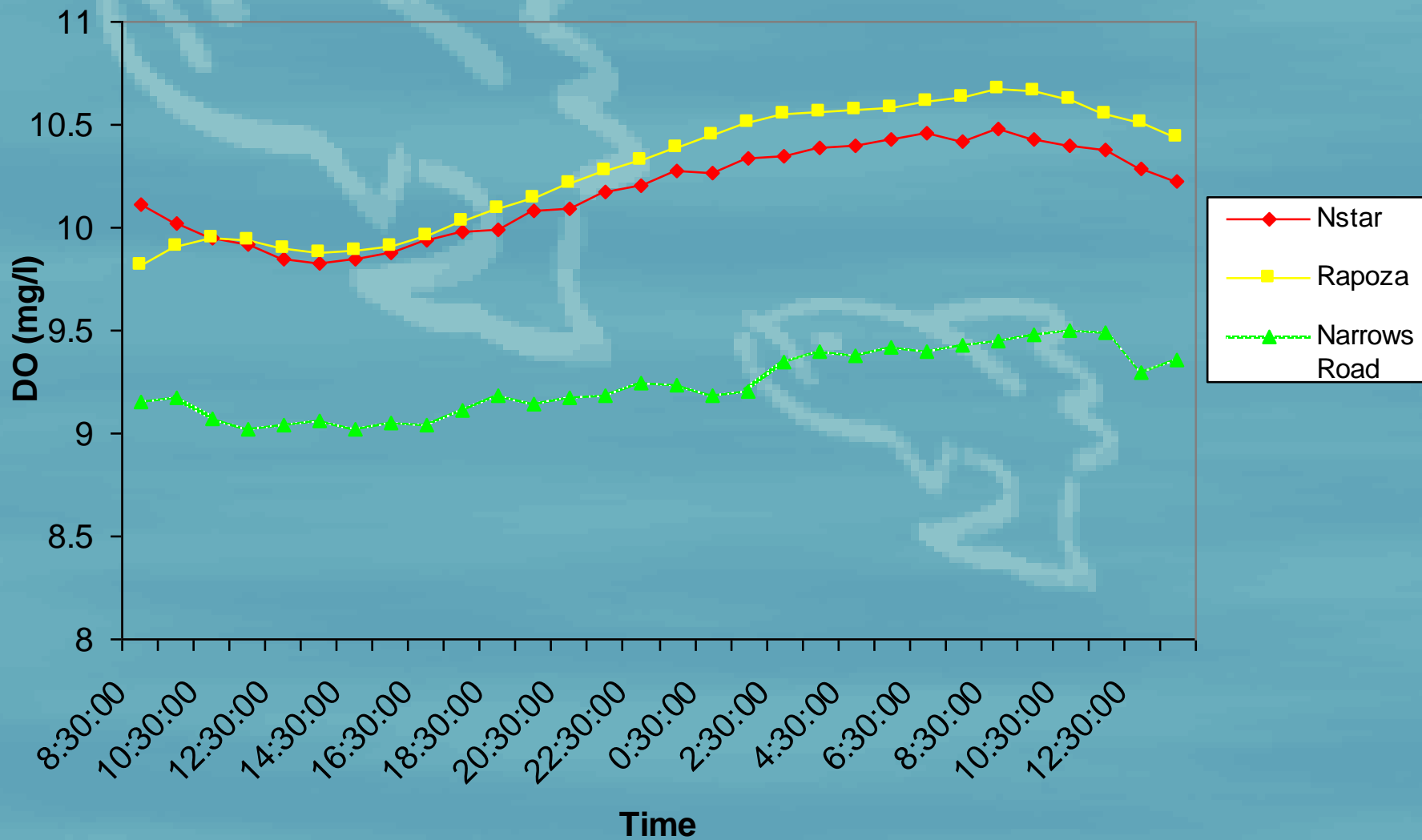
Temperature vs. Time, Rattlesnake Brook on November 7- 8, 2005



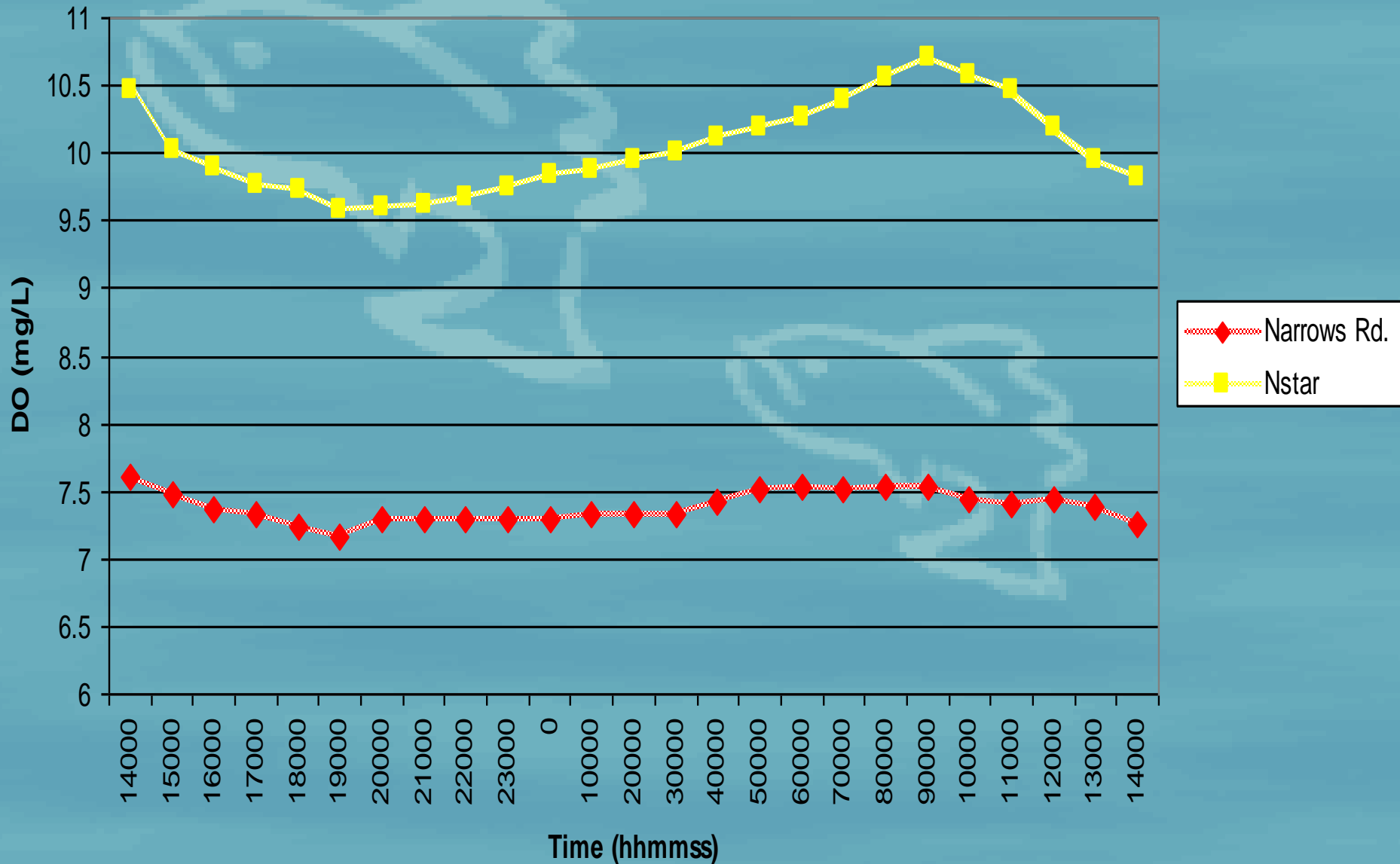
Temperature vs. Time, Rattlesnake Brook, April 13-14 2006



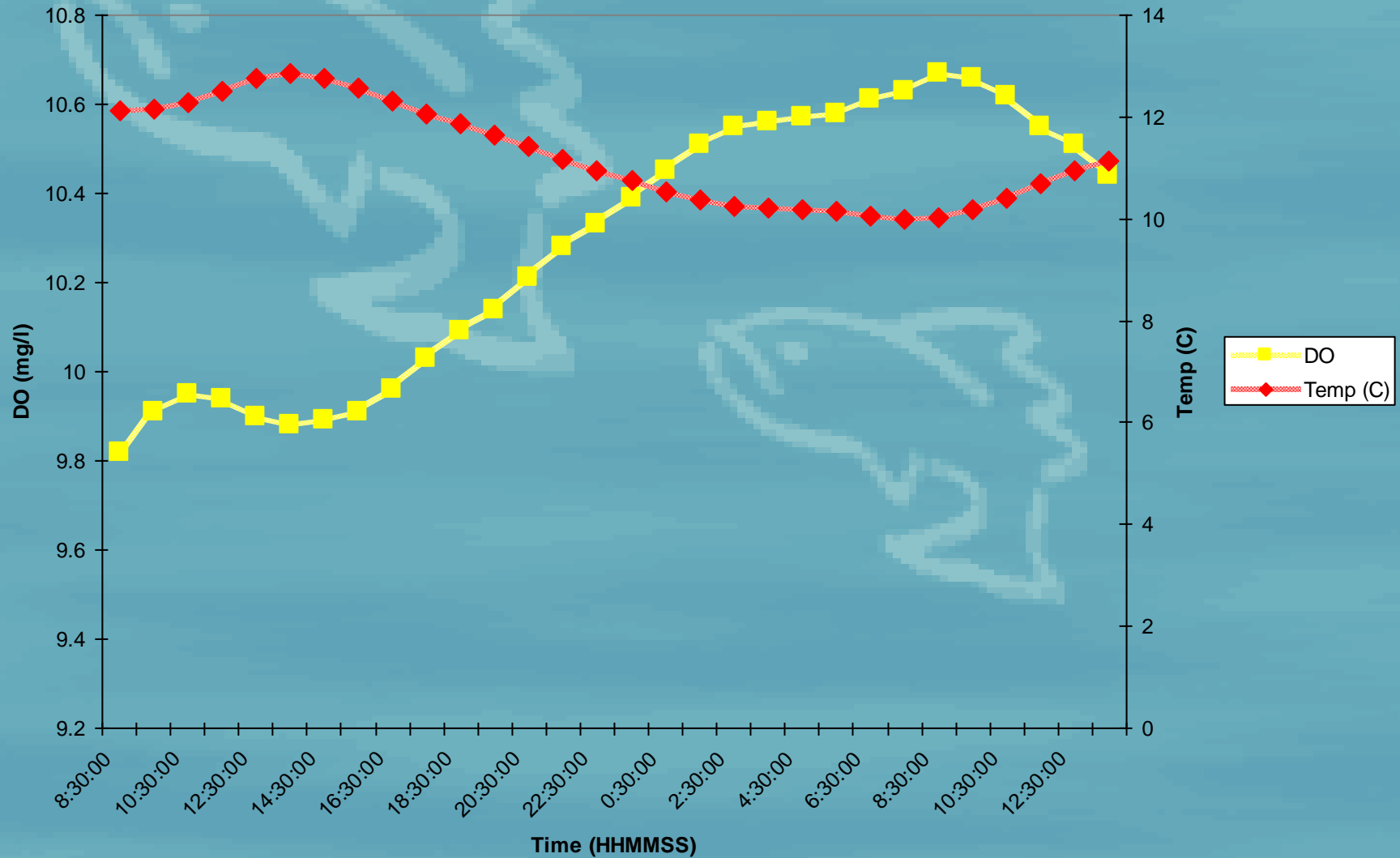
Dissolved Oxygen vs Time, Rattlesnake Brook on November 7th, 2005



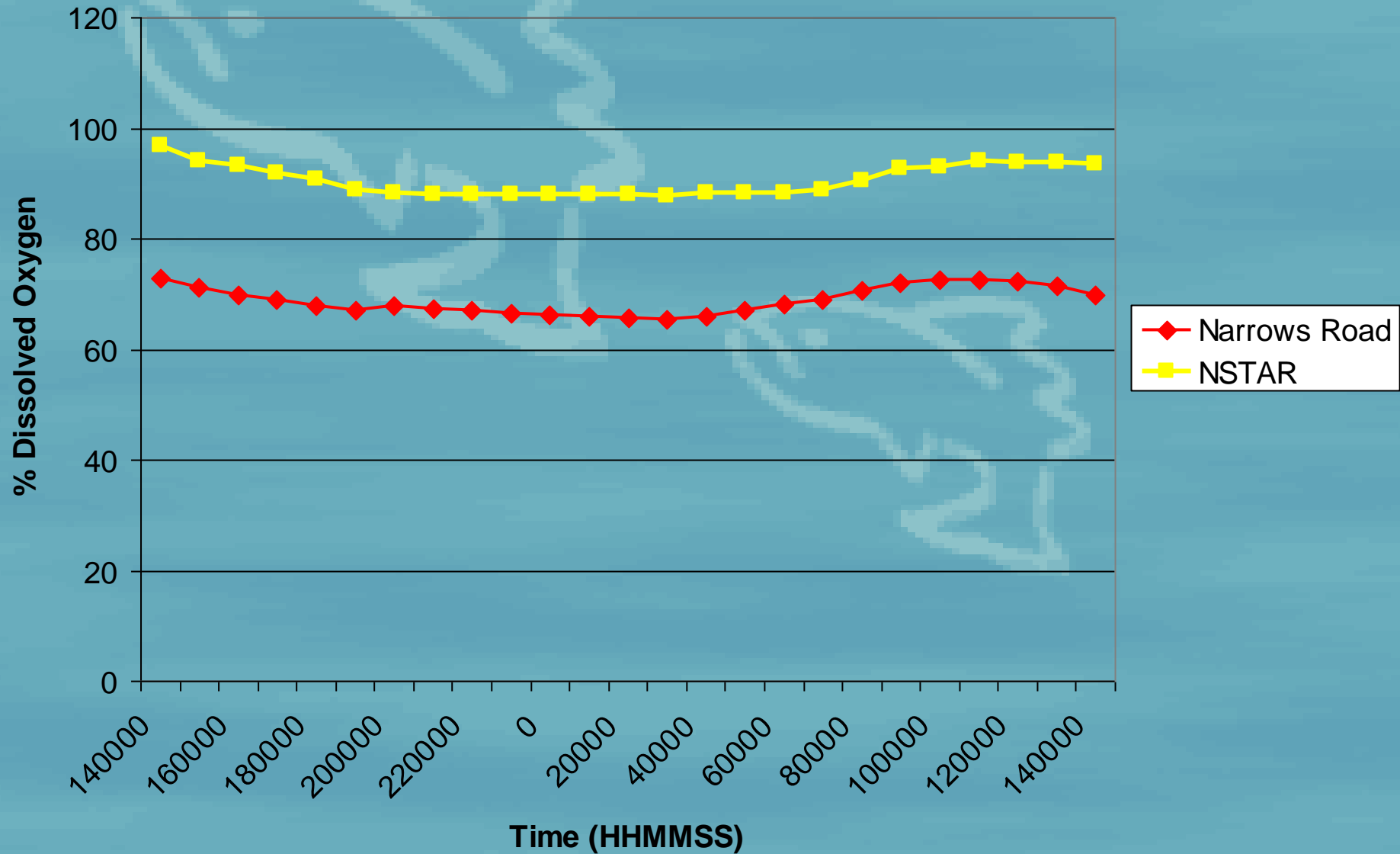
Dissolved Oxygen vs. Time, Rattlesnake Brook on April 13th 2006



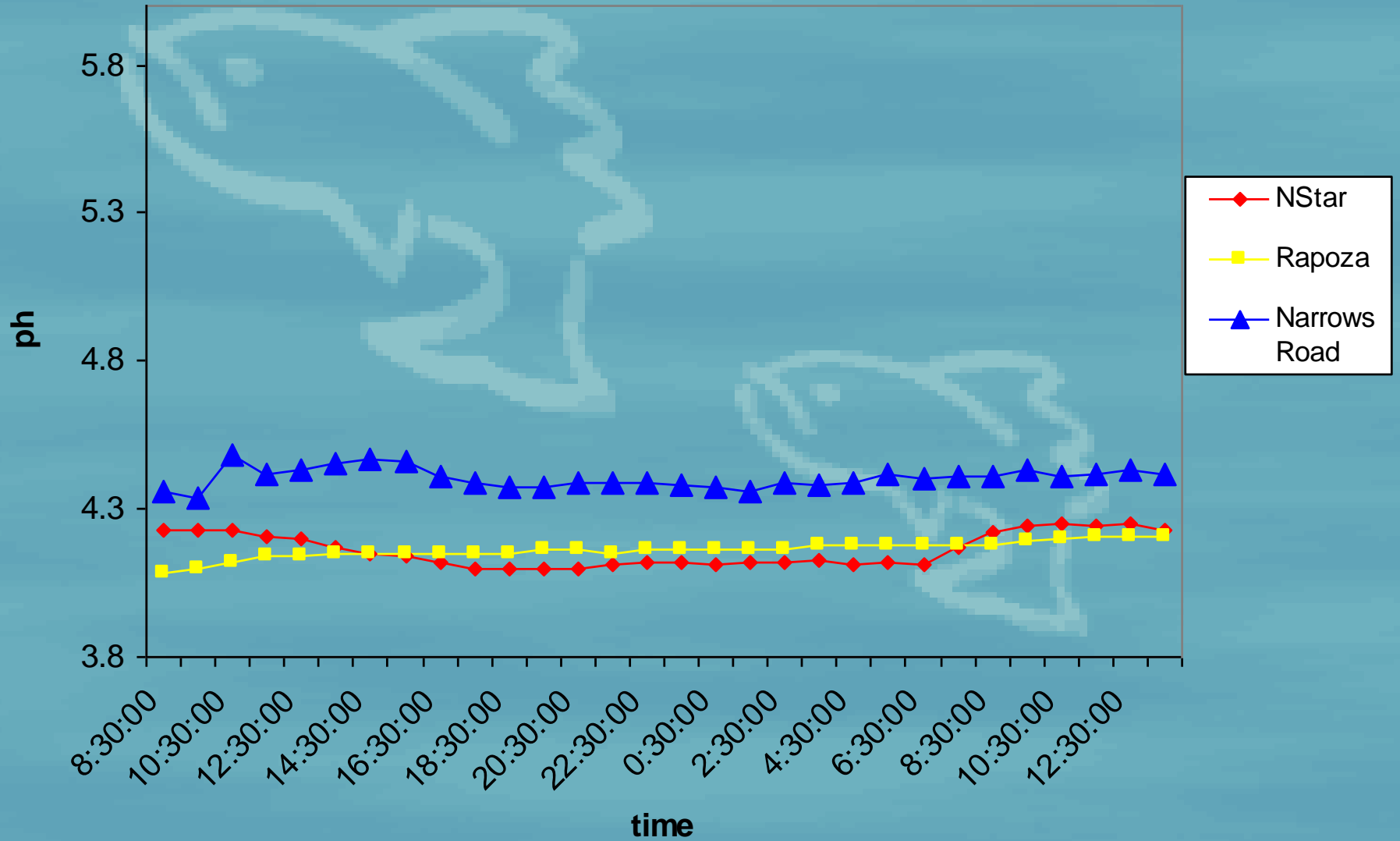
Dissolved Oxygen + Temperature vs. Time, Rattlesnake Brook, Rapoza, November 7-8, 2005



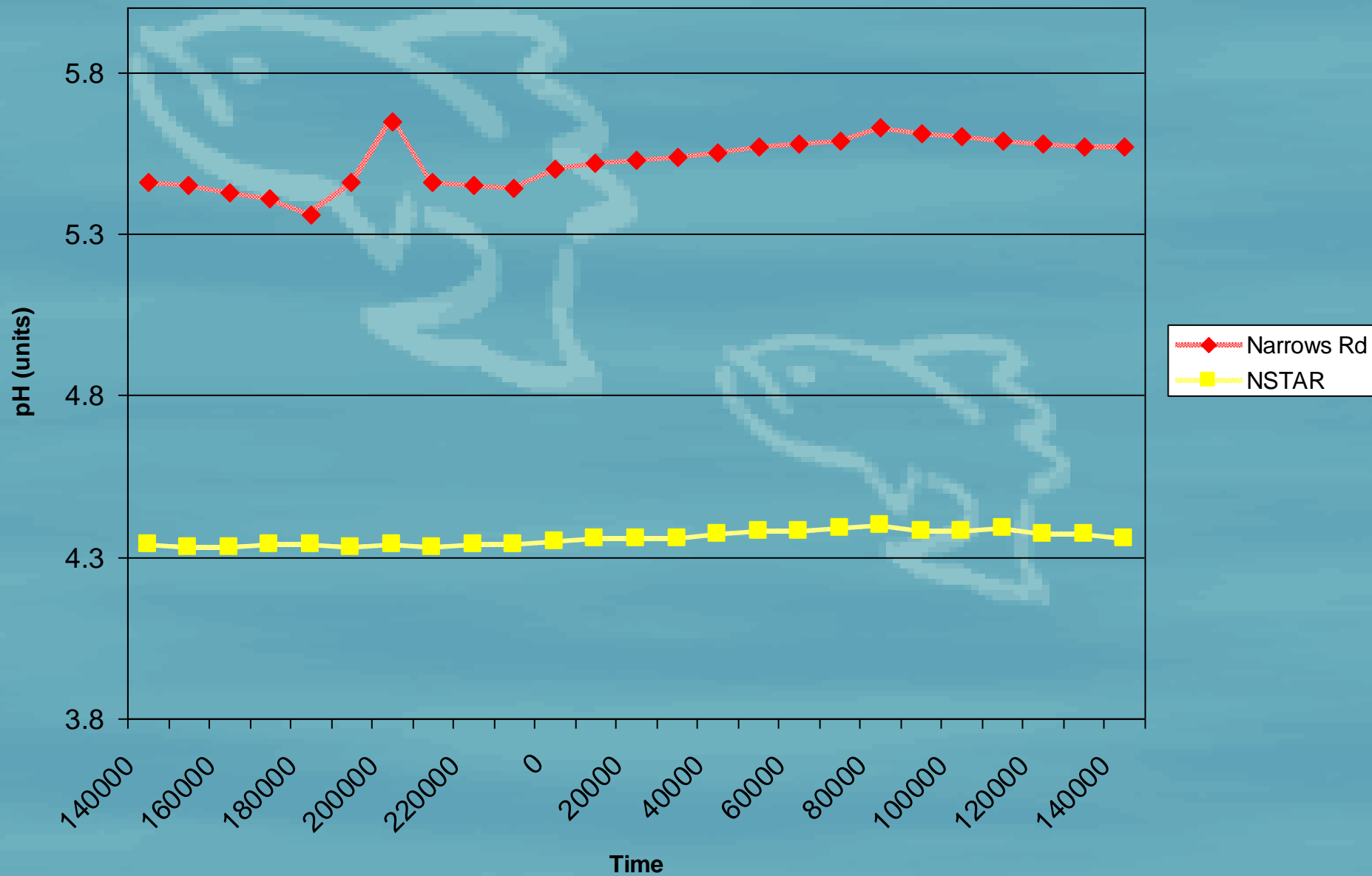
% Dissolved Oxygen Saturation, Rattlesnake Brook, April 13-14, 2006



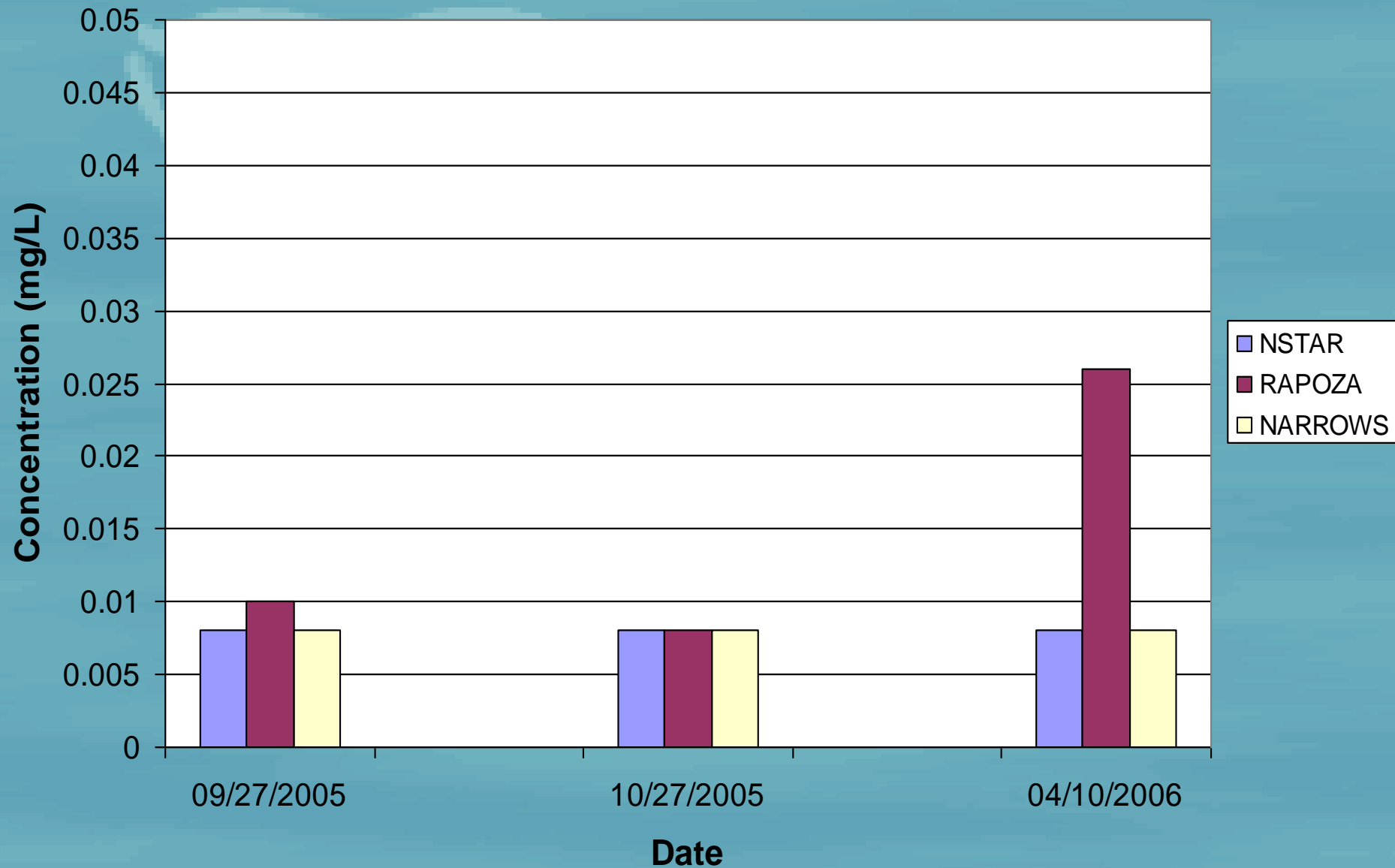
pH vs Time, Rattlesnake Brook, November 7- 8, 2005



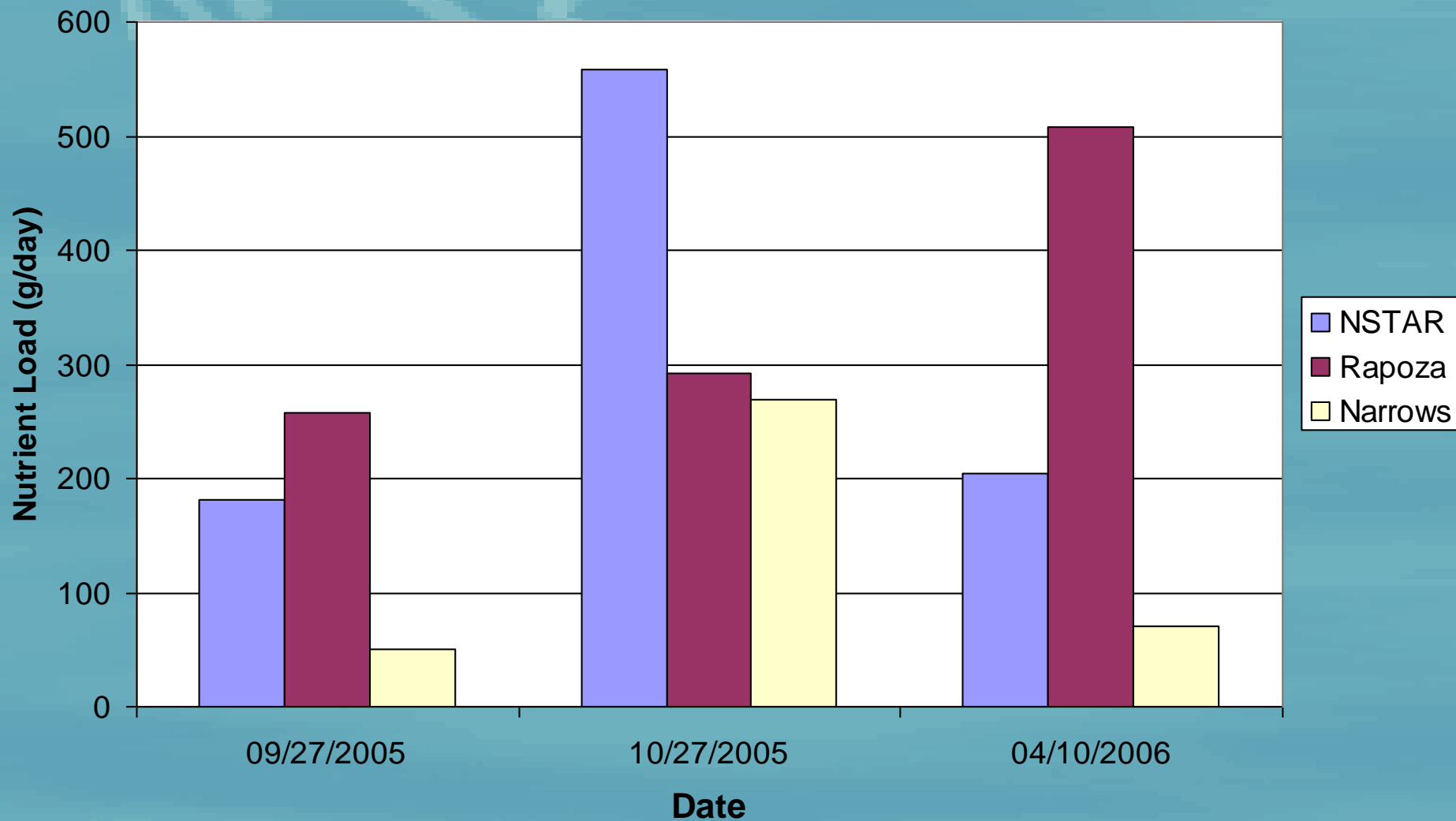
pH vs Time, Rattlesnake Brook, April 13-14, 2006



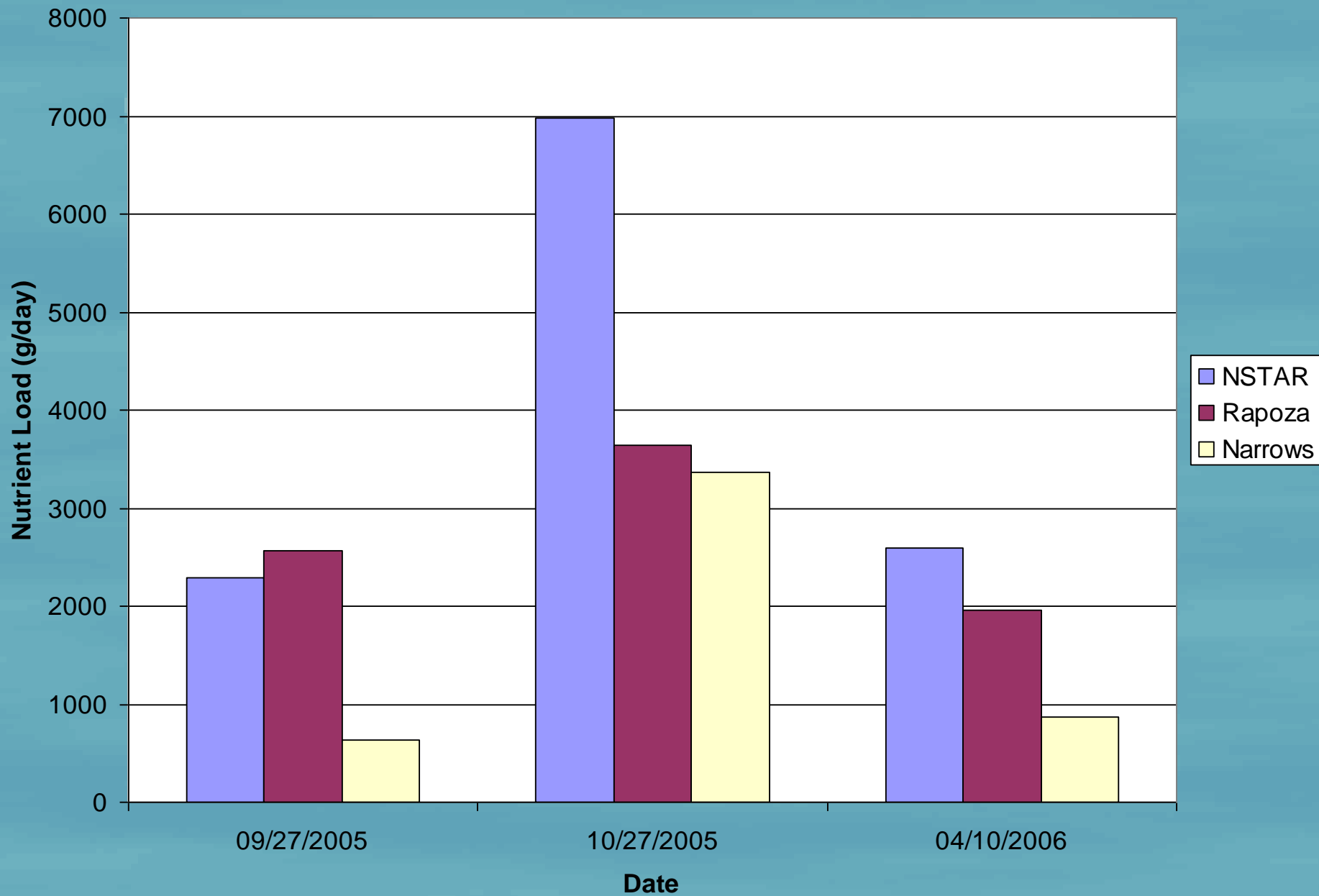
Reactive Phosphorus Concentration, Rattlesnake Brook, 2005-2006



Nutrient Load of Reactive Phosphorus in Rattlesnake Brook during 2005 and 2006



Nutrient Load of Nitrates in Rattlesnake Brook during 2005 and 2006

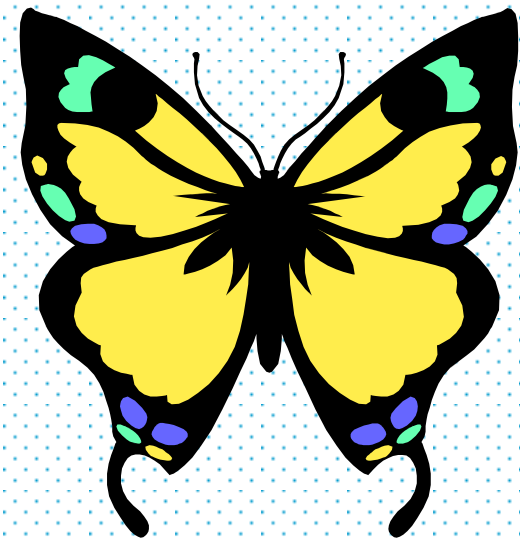


Macroinvertebrate Samples (NStar, Rattlesnake Brook)

Trichoptera	
Hydropsychidae	36
Limnephilidae	1
Philopotamidae	1
Rhyacophilidae	1
Diptera	
Chironomidae	1
Odonata	
Calopterygidae	1
Corduliidae	4
Hemiptera	
Veliidae	1
Megaloptera	
Corydalidae	12
Lepidoptera	
Pyralidae	1
Coleoptera	
Elmidae	3

•2% Tolerant

•76% Intolerant



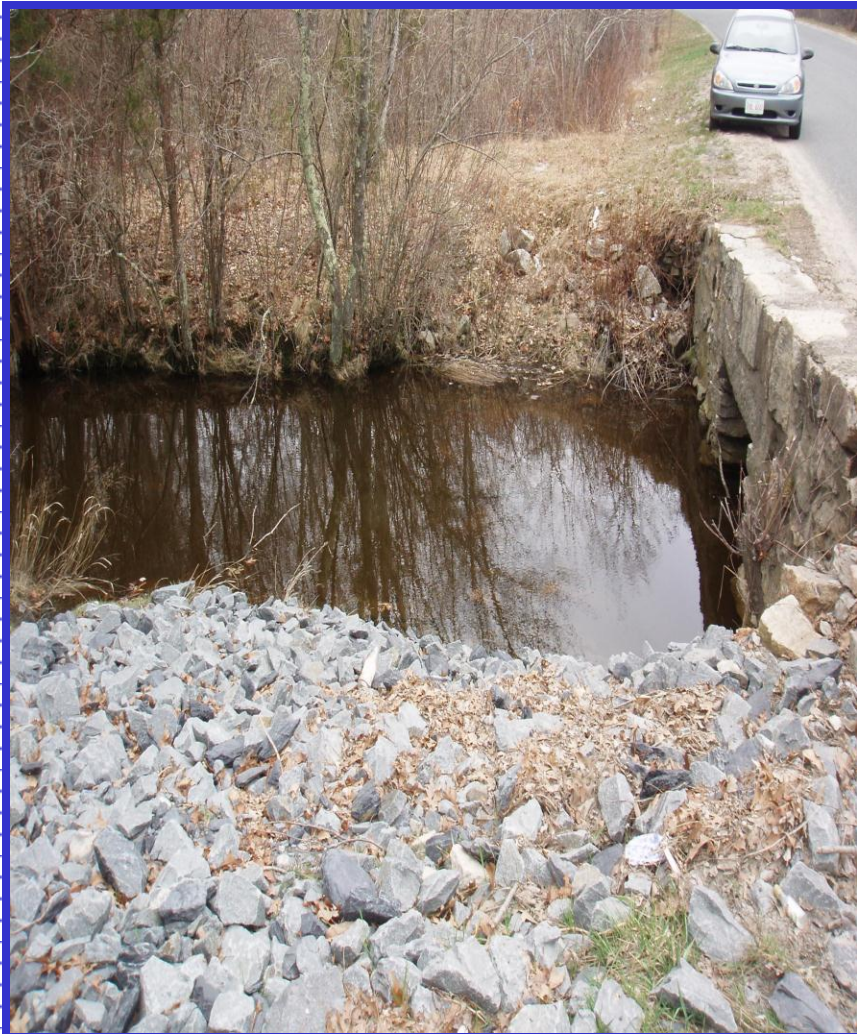
Trichoptera Rhyacophilidae



Rare Species
Found at NSTAR

Macroinvertebrate Samples

(Narrows Road, Rattlesnake Brook)



Trichoptera	
Hydropsychidae	1
Polycentropodidae	1
Coleoptera	
Elmidae	1
Amphipoda	129
Isopoda	1
% Tolerant	98
% Intolerant	1

Comparison of Family Biotic Index on Rattlesnake Brook



Conclusion

- The water quality data and the biotic index indicate an overall good water quality for Rattlesnake Brook.
- The difference between Narrows Road and NSTAR is due to the fact that it is a completely different habitat.
- According to the results we have obtained so far, Stop & Shop has had little effect on water quality of Rattlesnake Brook.
- Other organisms such as deer and trout are no longer present.
- Future problems may be the construction of single family homes upstream from NSTAR.

The Rattlesnake Team
would like to acknowledge our deep
appreciation towards

- Kim McCoy and Dr. Kevin Curry of the watershed access lab
- Mr. And Mrs. Carl Rapoza
- Nstar Corp.

