TECHNICAL PUBLICATION SJ2004-1

MIDDLE ST. JOHNS RIVER BASIN
WATER QUALITY STATUS AND TRENDS: 2002

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MIDDLE ST. JOHNS RIVER BASIN WATER QUALITY STATUS AND TRENDS: 2002

by

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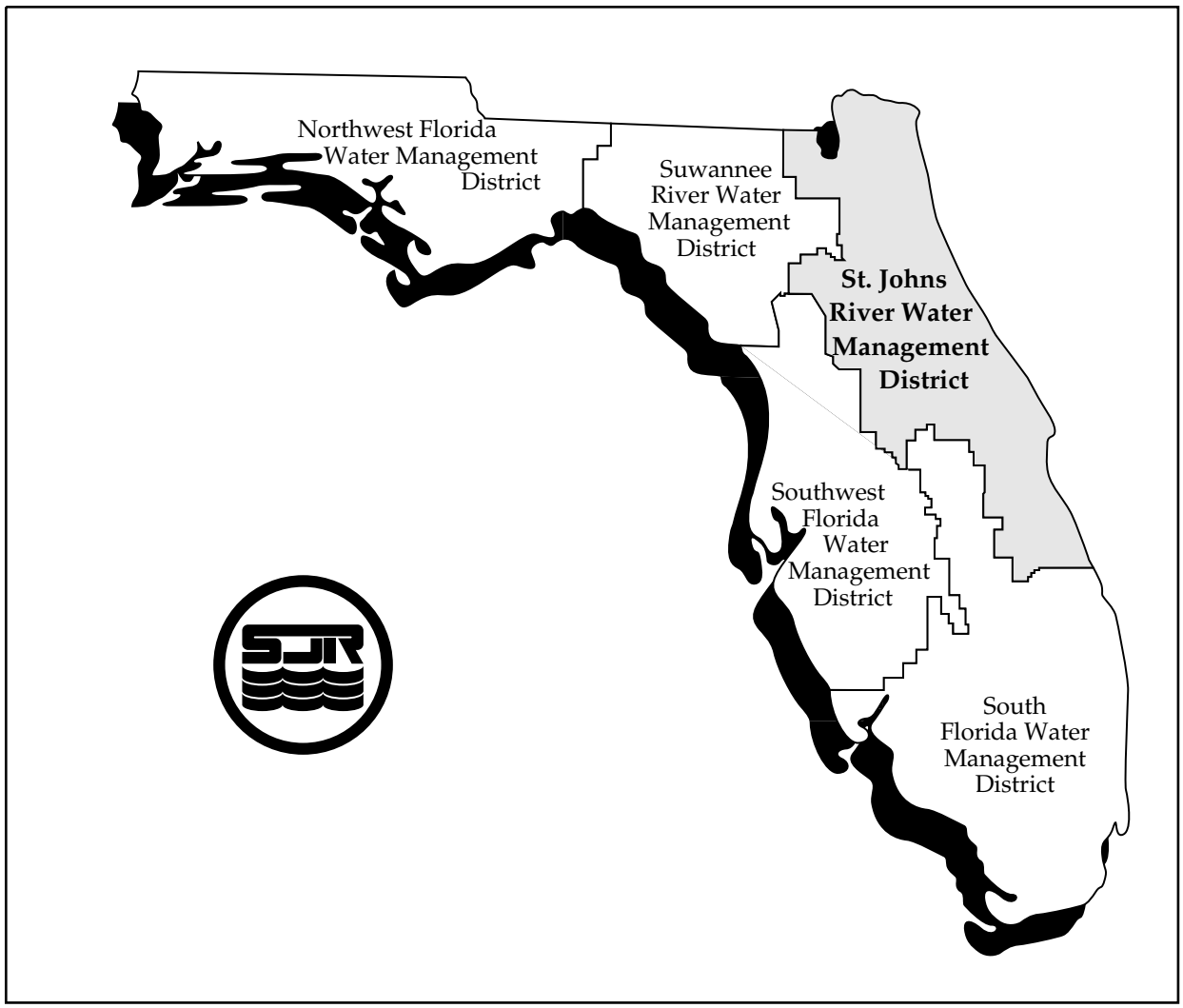
2004



The St. Johns River Water Management District (SJRWMD) was created by the Florida Legislature in 1972 to be one of five water management districts in Florida. It includes all or part of 18 counties in northeast Florida. The mission of SJRWMD is to ensure the sustainable use and protection of water resources for the benefit of the people of the District and the state of Florida. SJRWMD accomplishes its mission through regulation; applied research; assistance to federal, state, and local governments; operation and maintenance of water control works; and land acquisition and management.

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EXECUTIVE SUMMARY

The Middle St. Johns River Basin is a 771,065-acre watershed that includes the stretch of the St. Johns River north of the Econlockhatchee River and south of the city of DeLand. The basin's ecological and economic importance led to its 2002 designation as a priority for protection and/or restoration according to statutes set forth in Florida's Surface Water Improvement and Management Act of 1987. The Middle St. Johns River SWIM plan prioritized the evaluation of surface water quality status and trends as part of its water quality initiative (SJRWMD 2002). This is the first annual report that examines the status and trends of water quality for water bodies of regional significance in the Middle St. Johns River Basin.

This report focuses on (1) the St. Johns River upstream of Lake Harney, (2) the Econlockhatchee River, (3) Lake Harney, (4) the St. Johns River between Lake Jesup and Lake Harney, (5) Lake Jesup, (5) the St. Johns River between Lake Monroe and Lake Jesup, and (7) Lake Monroe. This report assessed the water quality of these water bodies using the Florida Water Quality Index (WQI, for rivers) and the Florida Trophic State Index (TSI, for lakes). The WQI incorporates data on nutrient concentrations, water clarity, oxygen demand, and biological diversity, while the TSI uses data on nutrients and chlorophyll *a* concentrations only (indicators of eutrophication). The status of water bodies was assessed using the median annual WQI or TSI value for the period 1998–2002. A rank regression technique was used to measure changes in water quality through time.

The Middle St. Johns River Basin water bodies cover the spectrum of water quality. The best water quality was noted in the Econlockhatchee River and Lake Harney, while Lake Jesup had the worst water quality. Water exiting Lake Harney declined in water quality as it flowed past Lake Jesup. Lake Monroe's water quality was assessed as fair.

Water quality in the basin has shown mixed temporal trends. The annual trophic state of Lakes Harney, Jesup, and Monroe showed no change during the period of record analyzed, as had the WQI calculated for the Econlockhatchee River. The future of water quality in this basin will depend on effective control of sediment and nutrient loading. The creation and implementation of stormwater treatment best management practices may help to improve the water quality in the Middle St. Johns River Basin.

CONTENTS

FIGURES

TABLES

INTRODUCTION

MIDDLE ST. JOHNS RIVER BASIN WATER QUALITY

The Middle St. Johns River Basin encompasses a diverse assemblage of surface water bodies providing important recreational opportunities, wildlife habitats, and water resources for central Florida. Rapid population growth centers in the Orlando regional area threaten the viability of ecological communities and the quality of the surface waters. The ecological and economic importance of this basin has recently led to its designation as a priority for protection and / or restoration according to statutes set forth in Florida's Surface Water Improvement and Management Act of 1987. This report partially fulfills the goals outlined in the Middle St. Johns River Basin SWIM Plan (SJRWMD 2002).

The middle basin is a 771,065-acre watershed that includes the stretch of the St. Johns River north of the Econlockhatchee River and south of the city of DeLand (Figure 1). The basin includes large lakes such as Lake Monroe (8,772 acres), Lake Harney (6,278 acres), and Lake Jesup (8,063 acres) and rivers, including the Econlockhatchee River, Deep Creek, the Wekiva River, and Blackwater Creek (Figure 1). To varying degrees, groundwater inputs, geology, circulation, and human activities influence water quality in the St. Johns River Basin. This report examines the current trends and status of water quality of several major water bodies in the Middle St. Johns River Basin. Determining the causes of water quality changes, while important for management and restoration programs, is beyond the scope of this report.

There are several chemicals that contribute to or indicate declining water quality. We chose to use the Florida Trophic State Index (TSI) (Huber et al. 1982) for lakes and the Water Quality Index (WQI) (Hand et al. 1988) for river segments to summarize the status and changes in water quality. The TSI incorporates data on nutrients (total phosphorus and total nitrogen) because high concentrations of these constituents contribute to the proliferation of algae, nuisance species of aquatic plants, and bacteria. Phytoplankton blooms resulting from excessive nutrients can result in fish kills, limit recreational activities, and impair the natural function of entire ecosystems. The WQI also includes data on total organic carbon and dissolved oxygen as indicators of potential oxygen stress, suspended solids and turbidity as indicators of particulates, and chlorophyll *a* as an indicator of algal proliferation.

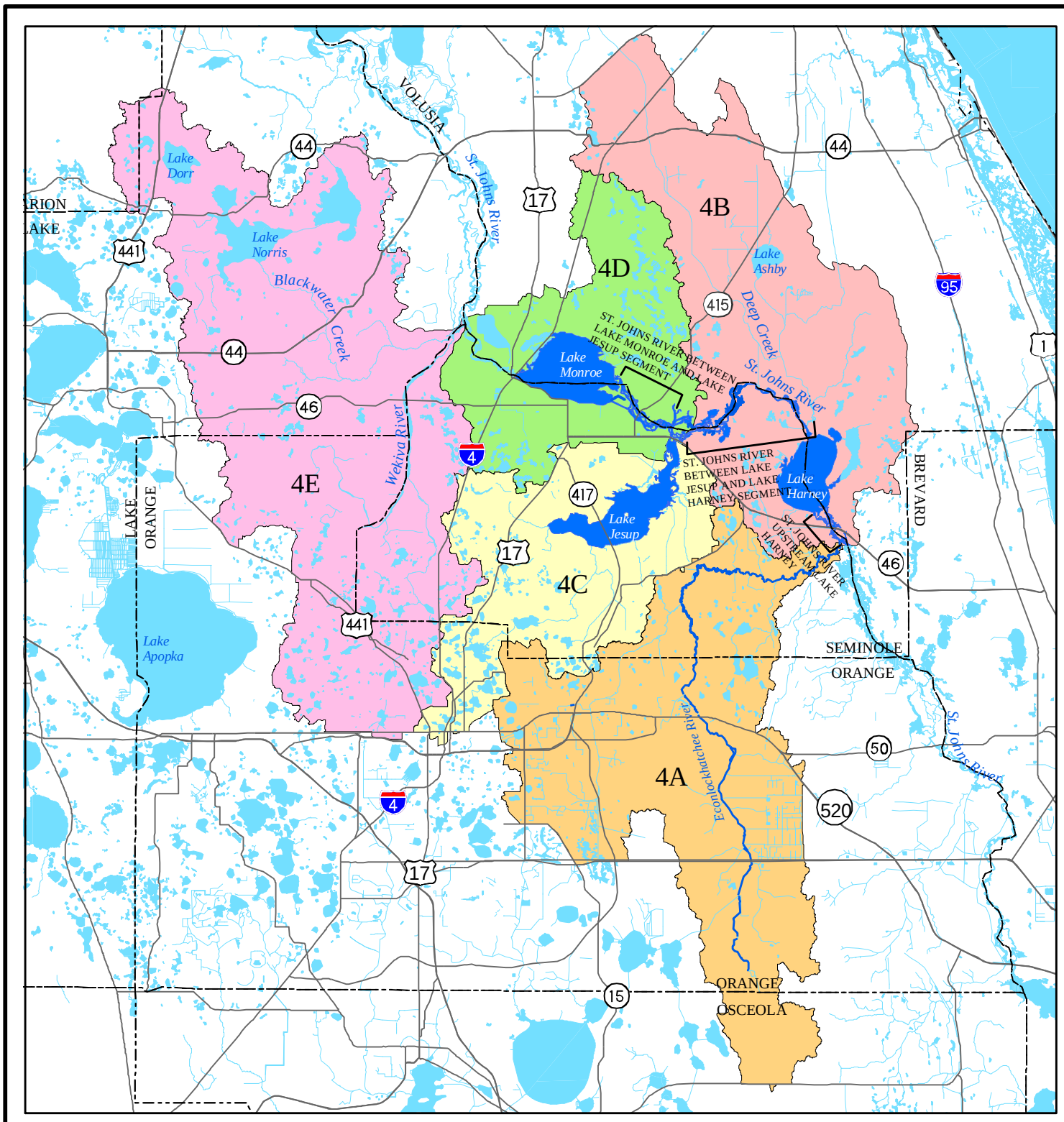
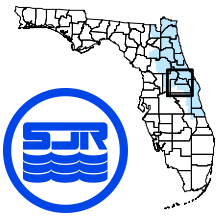
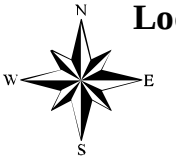


Figure 1. Middle St. Johns River Basin

Location Map - September 2003





3 1.5 0 3 Miles

1:475000

Legend

- County Boundaries
- Transportation - 500K

Planning Units

- 4A- Econlockhatchee River
- 4B- Deep Creek Unit
- 4C- Lake Jesup
- 4D- Lake Monroe Unit
- 4E- Wekiva River
- Water Bodies included in this report
- Hydrography

PROJECT GOALS

The goals of this project for the Middle St. Johns River Basin include

- Collecting and organizing water quality data
- Evaluating the status of water quality
- Determining if trends, positive or negative, exist in water quality analytes
- Creating a template and protocol for future water quality reports

SCOPE OF REPORT

This report focuses on water bodies of regional and biological significance for which the St. Johns River Water Management District (SJRWMD) has accumulated the necessary data for evaluating their water quality. The following lakes and rivers are examined in this report:

- St. Johns River upstream of Lake Harney
- Econlockhatchee River
- Lake Harney
- St. Johns River between Lake Jesup and Lake Harney
- Lake Jesup
- St. Johns River between Lake Monroe and Lake Jesup
- Lake Monroe

METHODS

SAMPLE COLLECTION

All samples were collected following SJRWMD's standard operating procedures for surface water collection (SJRWMD 1999). Water samples were collected at a depth of 0.5 meters below the water surface or half the depth if sites were less than 1 meter. The locations of all stations used in this status and trends analysis are shown in Appendix A.

QUALITY ASSURANCE/QUALITY CONTROL

SJRWMD has developed a quality assurance / quality control protocol to ensure accurate and reproducible water quality sampling and analysis (SJRWMD 1999). To assure that the highest quality data were used in the evaluation process, all data coded J, Q, M, O, V, and Y were eliminated prior to analysis (see Appendix B for code explanations). Data that were coded "!, #, and •" were also omitted if those data were outside the historic range of values. Values at the detection limit were left unchanged for this analysis.

STATISTICAL ANALYSIS PROCEDURES

All samples collected (including duplicate measurements) for a given month in a water body were averaged to generate a single monthly value. These monthly average values were used in the statistical analyses. Statistical summaries for each water body are included in Appendix C.

The status of water bodies was determined using one of two indices of water quality. Water quality was evaluated for rivers using the WQI (Hand et al. 1988) and for lakes using the TSI (Huber et al. 1982). Status was calculated as the mean TSI or WQI for the period 1998–2002. The WQI and TSI threshold criteria are listed in Table 1.

Trends were evaluated using the least-squares regression between ranked date and ranked TSI or WQI values. Tied ranks were averaged before analysis (Sokal and Rohlf 1995). We designated a trend in water quality when the slope of this regression was statistically significant ($p < 0.05$). This approach is robust for data with many different underlying distributions and is insensitive to extreme low or high values.

Table 1. The critical Water Quality Index and Trophic State Index thresholds for water quality designations in the Middle St. Johns River Basin

Index	Water Body Type	Good	Fair	Poor
WQI	Streams, rivers	< 45	45–60	>60
TSI	Lakes	< 60	60–70	>70

Note: TSI = Trophic State Index
WQI = Water Quality Index

Source: Friedemann and Hand 1989

Lake trophic status was estimated for Lake Jesup, Lake Harney, and Lake Monroe using the Florida TSI (Huber et al. 1982), modified according to Hand et al. (2000). Hand et al. (2000) eliminated the Secchi depth data from the index because of the highly colored nature of Florida's surface waters. TSI was calculated for each year by averaging the monthly mean chlorophyll a, total nitrogen, and/or total phosphorus. The TSI was only calculated when at least three monthly values existed for the three analytes required for the index.

Water quality in the Econlockhatchee River and four stretches of the St. Johns River was characterized using the Florida WQI (Hand et al. 1988). The WQI incorporates information on biological, chemical, and physical qualities of flowing water systems. Biological information was not included in this report. We calculated WQI using the average of water clarity (turbidity and total suspended solids), oxygen (dissolved oxygen), oxygen demand (total organic carbon), and nutrients (total nitrogen and total phosphorus. WQI was calculated for each year using average monthly analyte values for years having three or more months of data and containing data from at least three categories (e.g., water clarity, dissolved oxygen, and nutrients).

Because seasonal changes in water quality analytes could obscure patterns in long-term data sets, seasonality was evaluated by comparing the average values for wet (June through September) and dry (October through May) seasons. Seasonal averages were compared statistically using a Students t-test.

RESULTS

STATUS OF MIDDLE BASIN WATER QUALITY

Basinwide Status and Trends

Water quality in the Middle St. Johns River Basin ranged from good to poor compared with other Florida water bodies. Of the water bodies examined, the best water quality was noted in the Econlockhatchee River and Lake Harney. The St. Johns River segments tended to have index values indicating fair condition. The quality of water improved as it passed through Lake Harney but degraded as the river received outflow from Lake Jesup. Lake Jesup had the poorest water quality of all of the water bodies examined (Figure 2). While the lakes differ in their current status, all of the lakes showed stability in water quality as measured by trends in their TSI. Unfortunately, all segments of the St. Johns River examined showed increasing trends in their WQI, indicating a pattern of degradation of water quality through time (Figure 3).

St. Johns River Upstream of Lake Harney

Analysis indicated that the St. Johns River upstream of Lake Harney had a WQI rating of 59 (Figure 2). Because this index value is so close to the threshold of fair and poor, it is difficult to clearly designate its water quality status as either fair or poor. This site showed a clear trend of degrading water quality. The trend was most pronounced from 1987 through 2002 (Figure 4). This decline in water quality was associated with an increase in total suspended solids that also began to rise in 1987 (Appendix C).

Econlockhatchee River

The Econlockhatchee River has historically had heavy nutrient loading by effluent released from wastewater treatment facilities. Currently, the Econlockhatchee River has a WQI rating of 38, reflecting its relatively good water quality (Figure 2). We found no discernable trend in the annual WQI values, indicating that the Econlockhatchee River water quality is stable (Figure 5). Since 1985, total nitrogen concentrations have declined in this river. Similar decreases in total phosphorus have been measured since the early 1980s (Appendix C). While nutrient concentrations have declined in this river, other

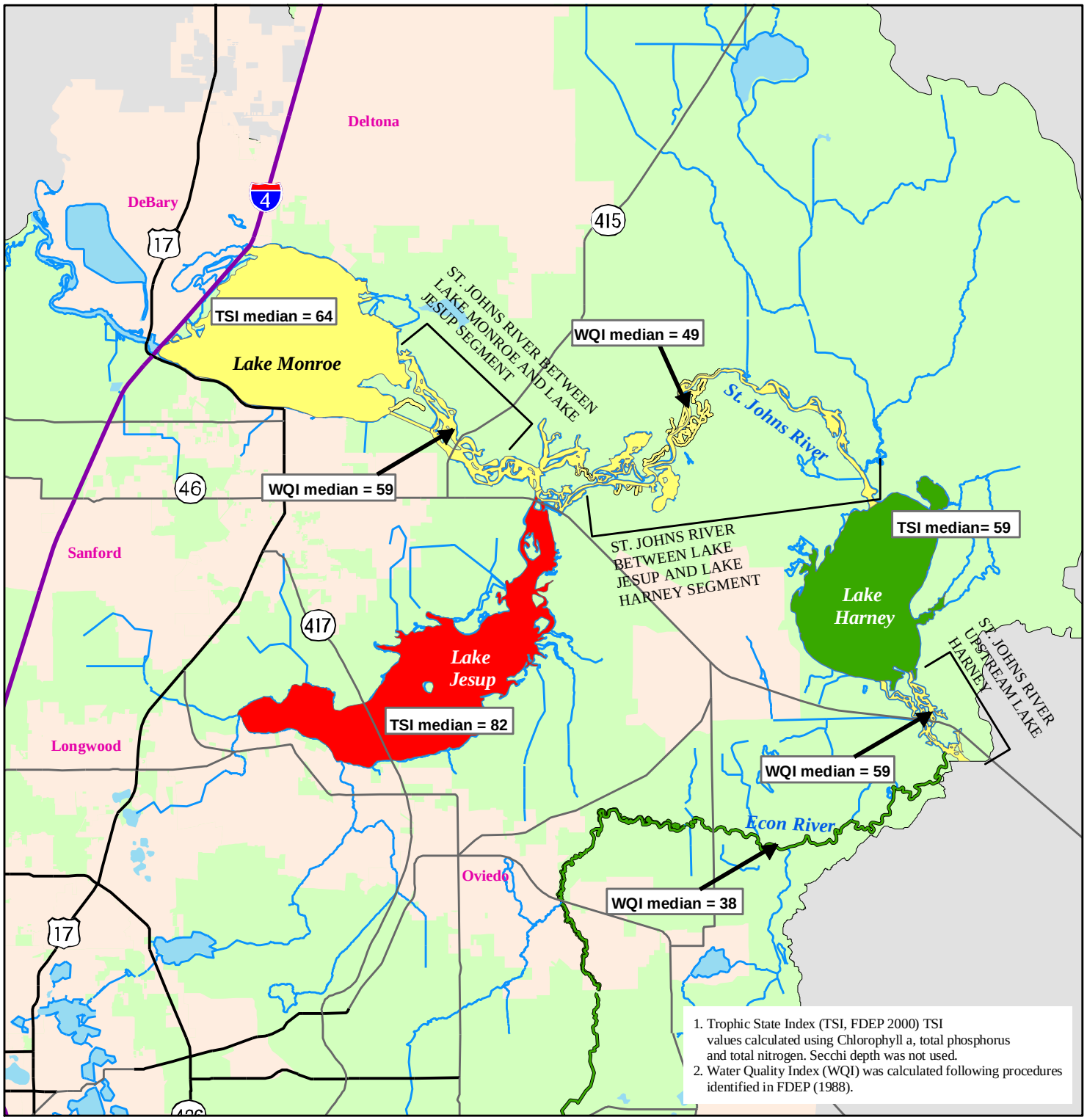
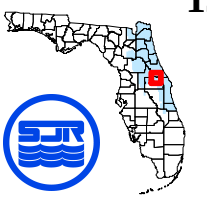
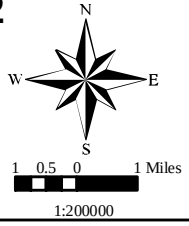


Figure 2 .
Median Annual Trophic State Index and Water Quality Index 1998 - 2002





Legend

Transportation - 500K
- Interstate
- US Highway
- State Road
- Streams
- Lakes
- Municipalities
- MSJRB Boundary

Trophic State Index
- Poor: TSI > 70
- Fair: 60 < TSI < 70
- Good: TSI < 60

Water Quality Index
- Poor: WQI > 60
- Fair: 45 < WQI < 60
- Good: WQI < 45

The St. Johns River Water Management District prepares and uses this Information for its own purposes and this information may not be suitable for other purposes. This information is provided as is. Further documentation of this data can be obtained by contacting: St. Johns River Water Management District, Geographic Information Systems,Program Management, P.O.Box 1429,Palatka, Florida 32178-1429. Tel: (386) 329-4176.

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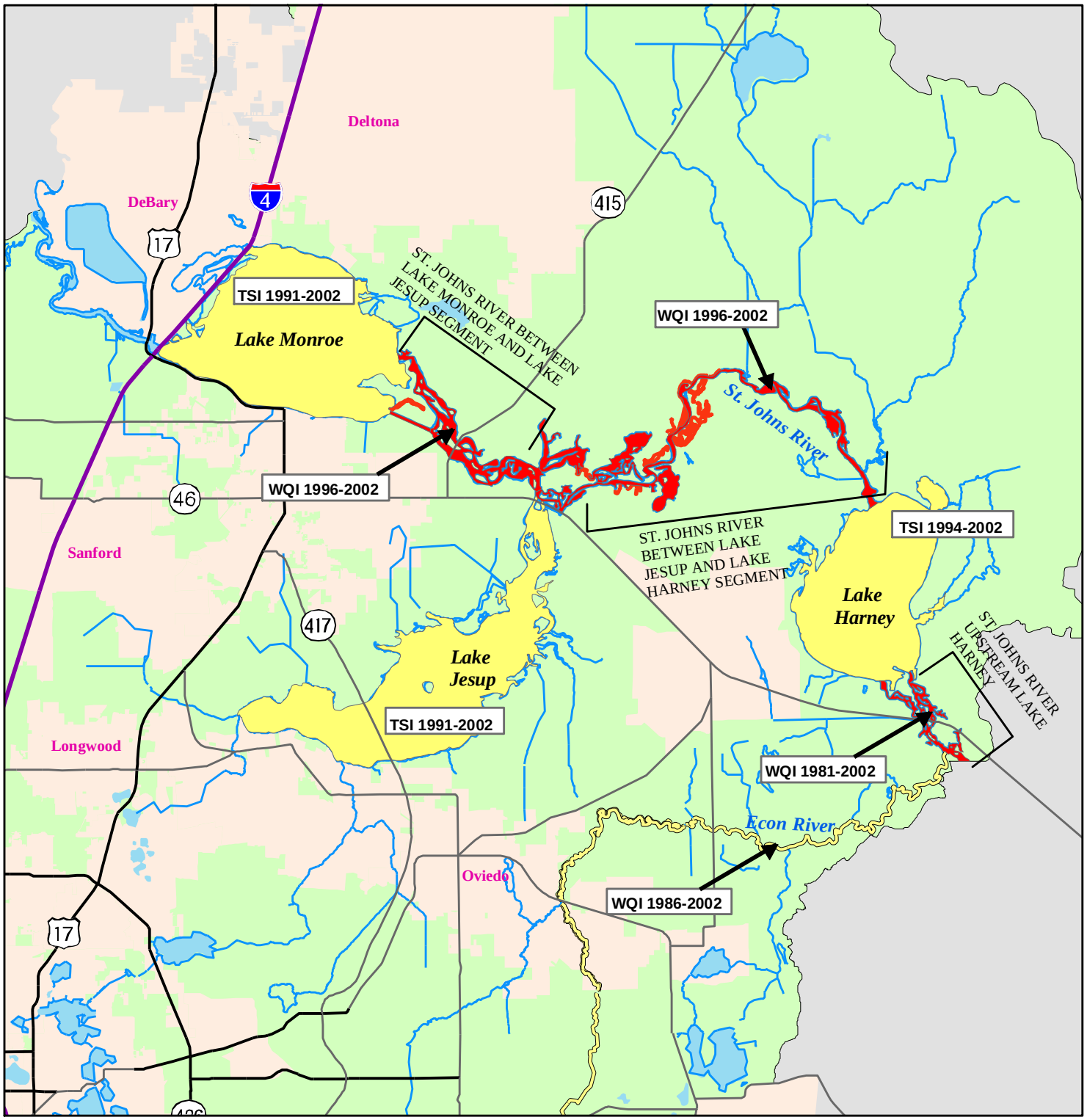
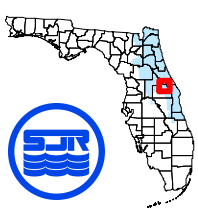
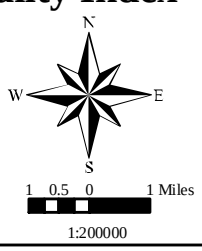


Figure 3 .
Temporal Trends in Trophic State Index and Water Quality Index





Legend

Transportation - 500K
- Interstate
- US Highway
- State Road
- Streams
- Lakes
- Municipalities
- MSJRB Boundary

Trophic State Index Trend
- Decline in Water Quality
- No Change in Water Quality
- Improving Water Quality

Water Quality Index Trend
- Decline in Water Quality
- No Change in Water Quality
- Improving Water Quality

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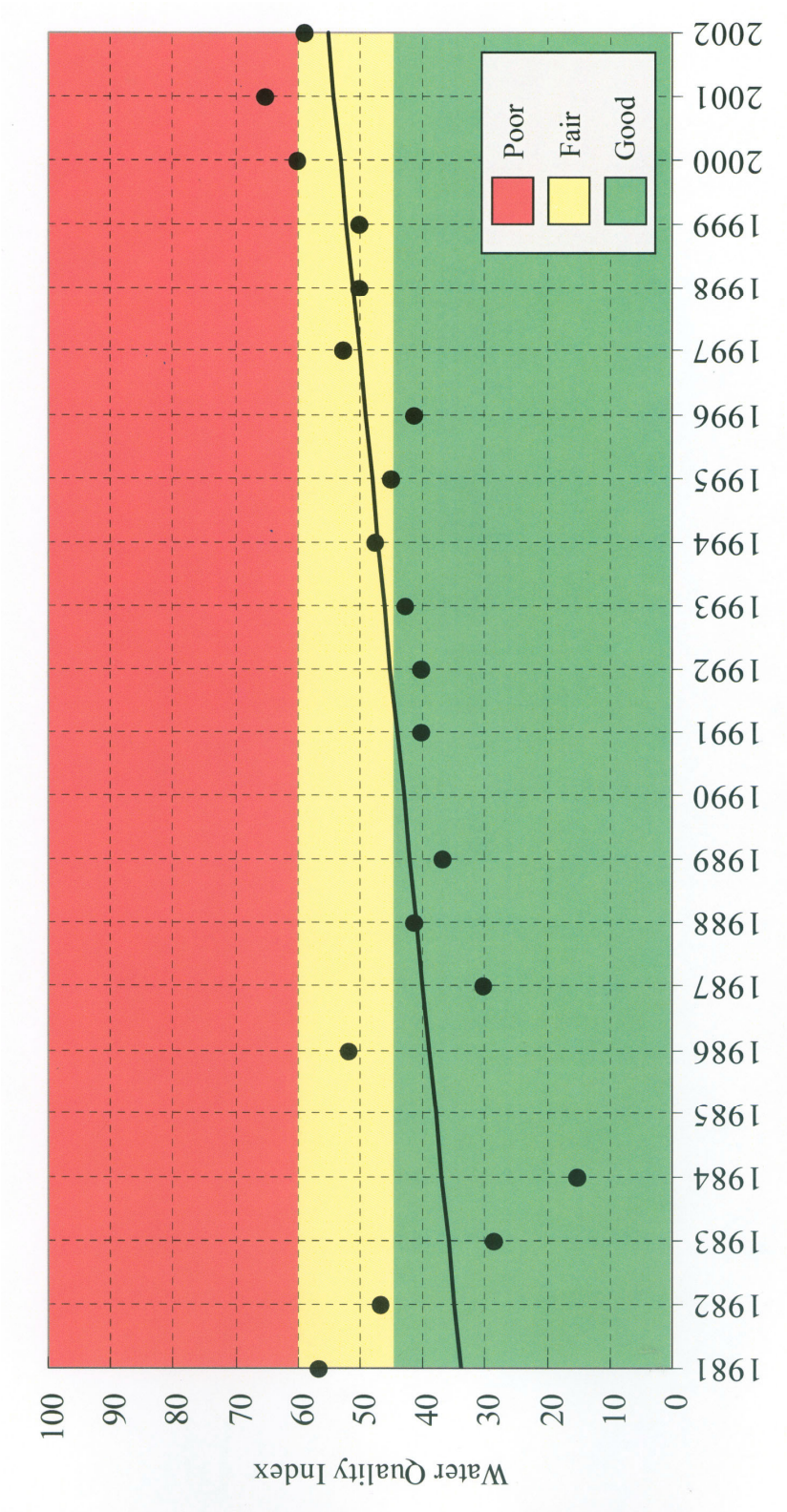

Figure 4. Annual average Florida Water Quality Index estimates for the St. Johns River upstream of Lake Harney from 1981-2002. Colored regions highlight qualitative water quality designations.

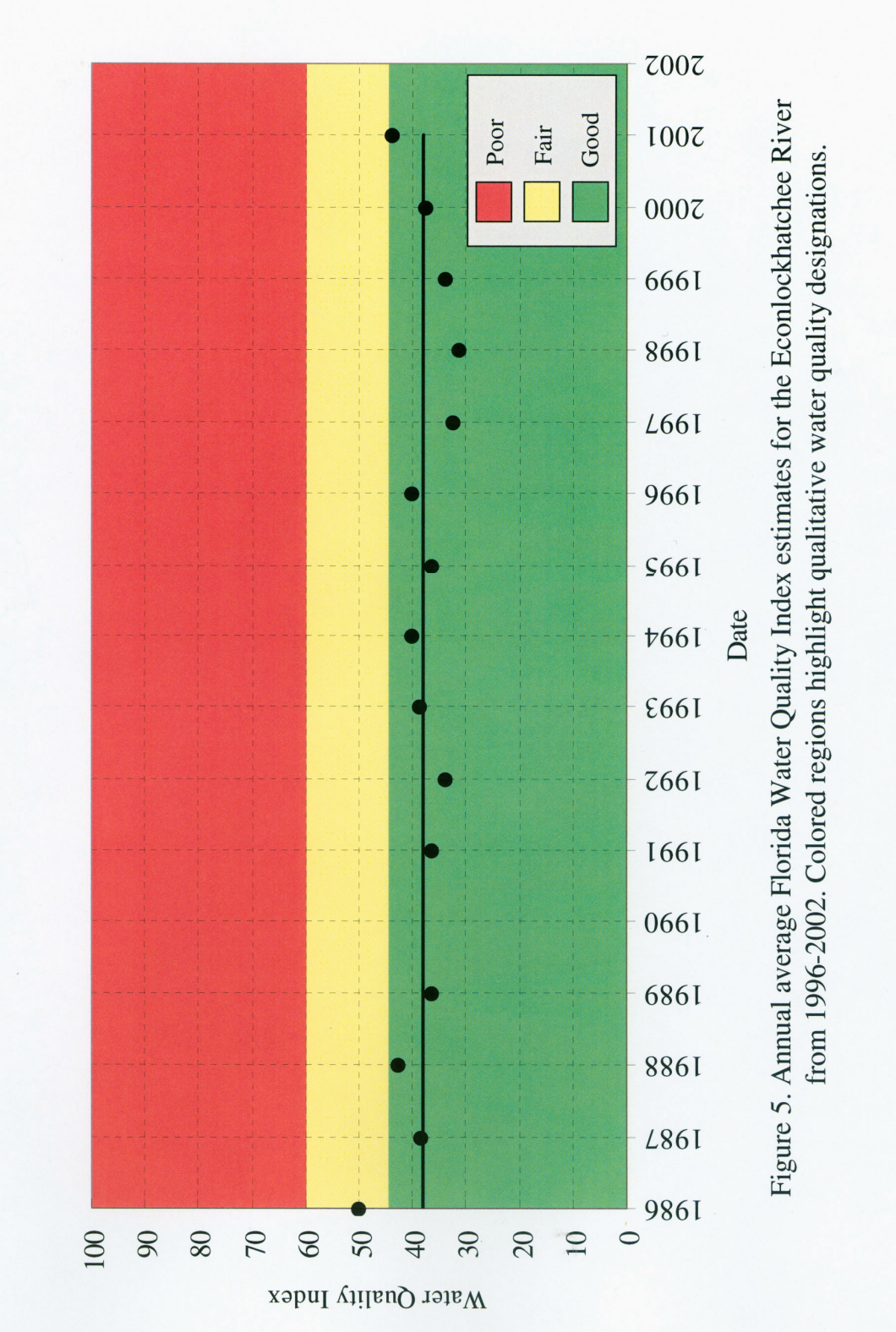

Figure 5. Annual average Florida Water Quality Index estimates for the Econlockhatchee River from 1996-2002. Colored regions highlight qualitative water quality designations.

analytes have not shown similar improvements. For example, the concentration of suspended materials continues to rise at 1.7 milligrams per liter per decade (Appendix C).

Lake Harney

Lake Harney is the water body located farthest upstream in the MSJRB. The median annual TSI for the period 1998–2002 for this water body was 59. This TSI value indicated that Lake Harney hovers in the good / fair range for Florida water bodies. However, this value should be considered provisional, because there were insufficient data to calculate TSI for the years 1999–2001 (Figure 2). The annual TSIs showed no significant trend including the years 1994–1998 and 2002 (Figure 6). The longer, more complete record of total phosphorus showed a much different picture of Lake Harney. Total phosphorus concentration has increased at approximately 30 micrograms per liter per decade (Appendix C). Increased concentrations of phosphorus can lead to the problems associated with eutrophication in lakes.

St. Johns River Between Lake Jesup and Lake Harney

The WQI for the St. Johns River between Lake Jesup and Lake Harney was calculated to be 49, indicating fair water quality (Figure 2). This portion of the river receives outfall from Lake Harney, the lake with the lowest level of nutrient impairment among the lakes examined in this report. Trend analysis showed that this river segment declined in water quality from 1996 through 2002 (Figure 7). This decline was attributed to significant increases in chlorophyll *a*, total nitrogen, total phosphorus, and total suspended solids during this period (Appendix C).

Lake Jesup

Lake Jesup had the poorest water quality in the basin. Lake Jesup's median annual TSI of 82 confirmed its poor water quality (Figure 2). Lake Jesup exhibited poor water quality throughout the 1990s, but the annual TSI showed no trend either decreasing or increasing during that period (Figure 8). Chlorophyll *a* and total nitrogen concentrations increased significantly over this time period despite a significant decrease in total phosphorus concentration (Appendix C). Efficient use of phosphorus by the invasive cyanobacterium *Cylindrospermopsis raciborskii* could explain this perplexing trend (Dobberfuhl 2003).

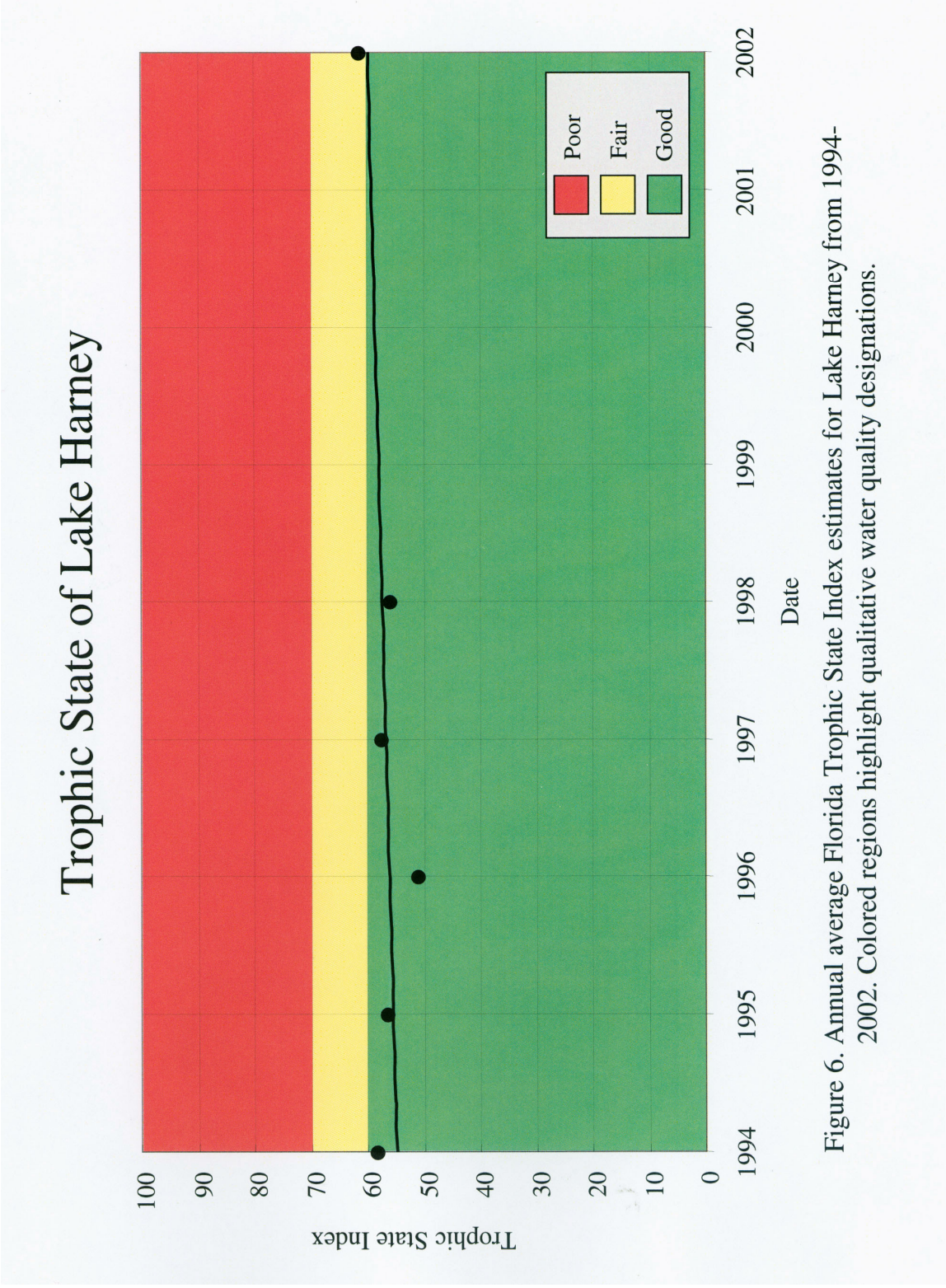

Figure 6. Annual average Florida Trophic State Index estimates for Lake Harney from 1994-2002. Colored regions highlight qualitative water quality designations.

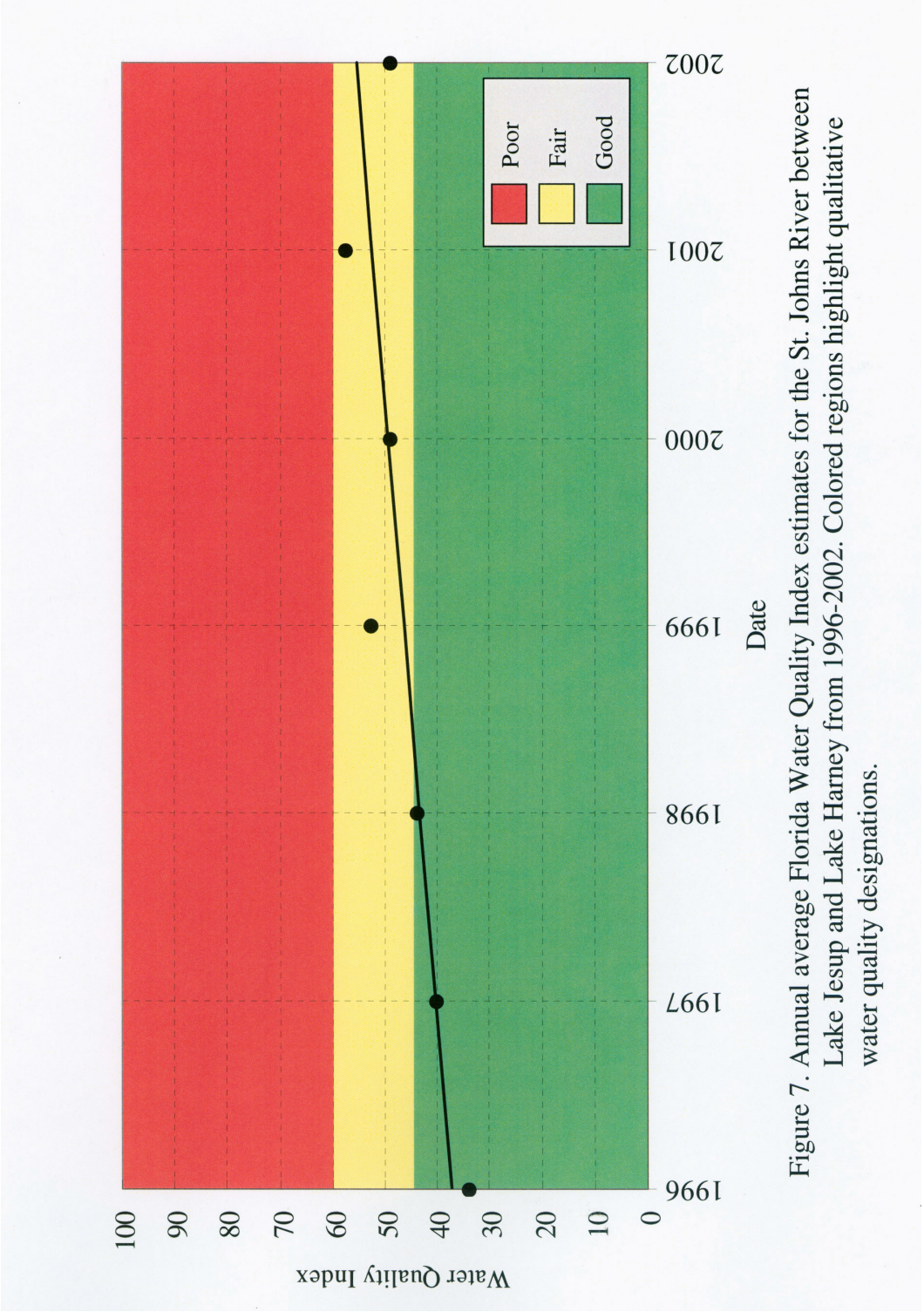

Figure 7. Annual average Florida Water Quality Index estimates for the St. Johns River between Lake Jesup and Lake Harney from 1996-2002. Colored regions highlight qualitative water quality designations.

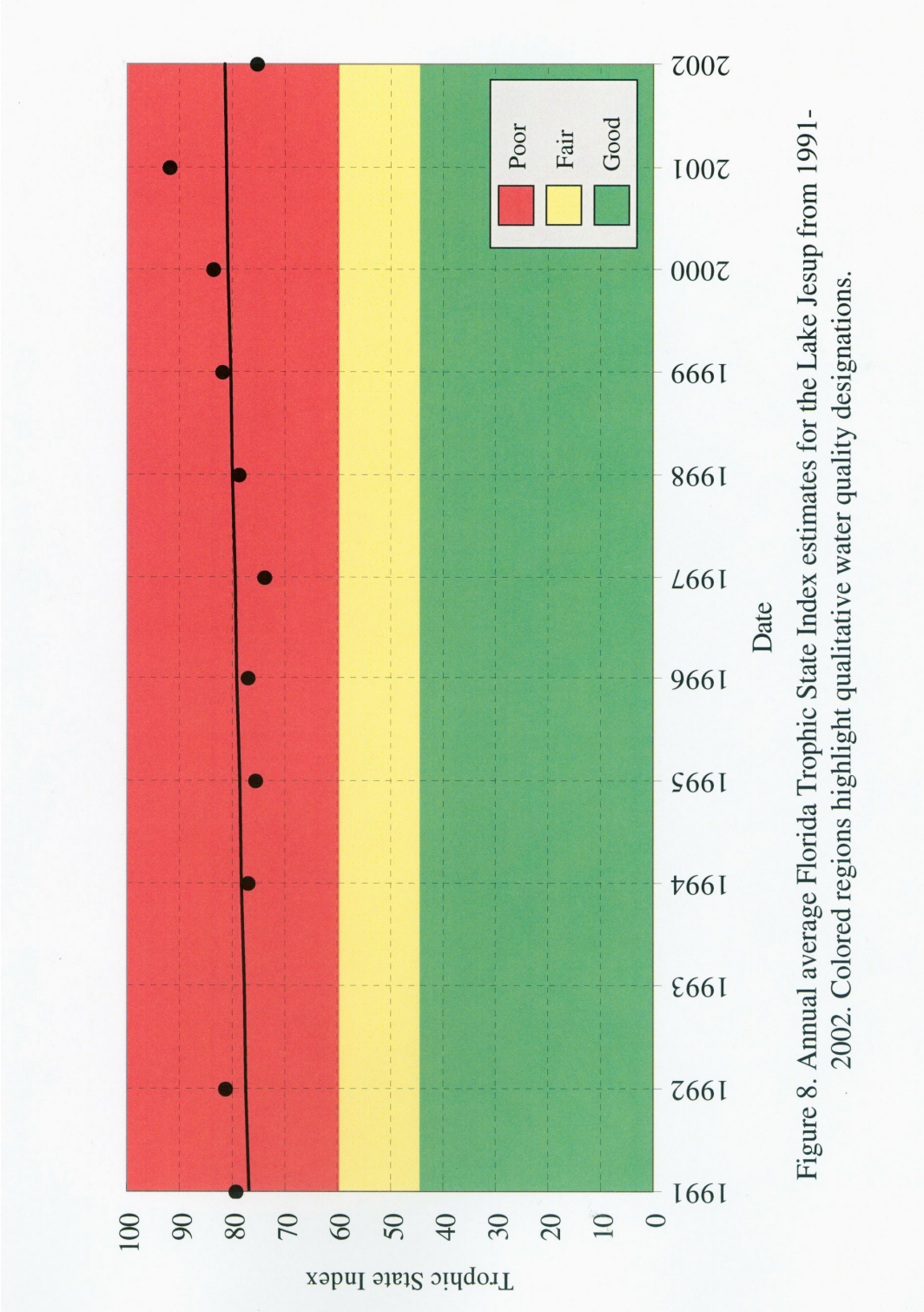

Figure 8. Annual average Florida Trophic State Index estimates for the Lake Jesup from 1991-2002. Colored regions highlight qualitative water quality designations.

St. Johns River Between Lake Monroe and Lake Jesup

With a median annual WQI value of 59, the St. Johns River downstream of the Lake Jesup outlet showed fair water quality (Figure 2). The trend showed a significant decline in water quality from 1996 to 2002, as measured by rising annual WQI values (Figure 9). Total nitrogen, total organic carbon, total phosphorus, and turbidity all increased significantly during this 7-year period (Appendix C). High concentrations of these analytes are typically associated with degraded waters. The assessment for this segment of the river focused on results from sampling location OW-SJR-2, which is in close proximity to the outfall from Lake Jesup (Appendix A). Because of Lake Jesup's strong negative influence on St. Johns River water quality, future assessments of this river segment's water quality should be determined from sampling stations farther downstream, closer to Lake Monroe.

Lake Monroe

The median annual TSI for Lake Monroe was 64. This value placed Lake Monroe's status squarely in the fair water quality category (Figure 2). While there was no detectable trend in annual TSI from 1991 to 2002 (Figure 10), TSI exceeded the Florida Department of Environmental Protection's Impaired Waters rule TSI criteria of 60 for impairment during all 11 years SJRWMD had adequate data to make the calculation.

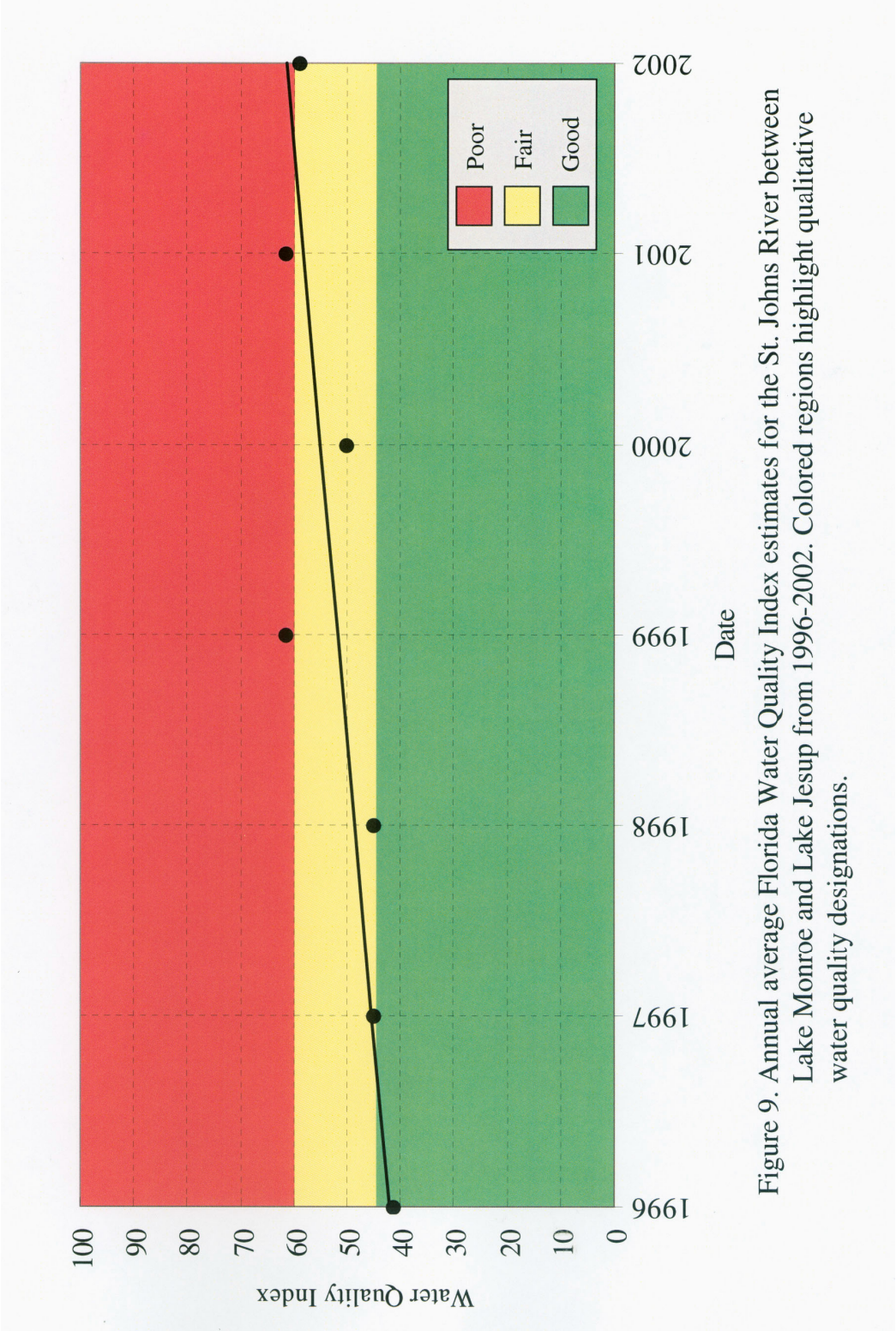

Figure 9. Annual average Florida Water Quality Index estimates for the St. Johns River between Lake Monroe and Lake Jesup from 1996-2002. Colored regions highlight qualitative water quality designations.

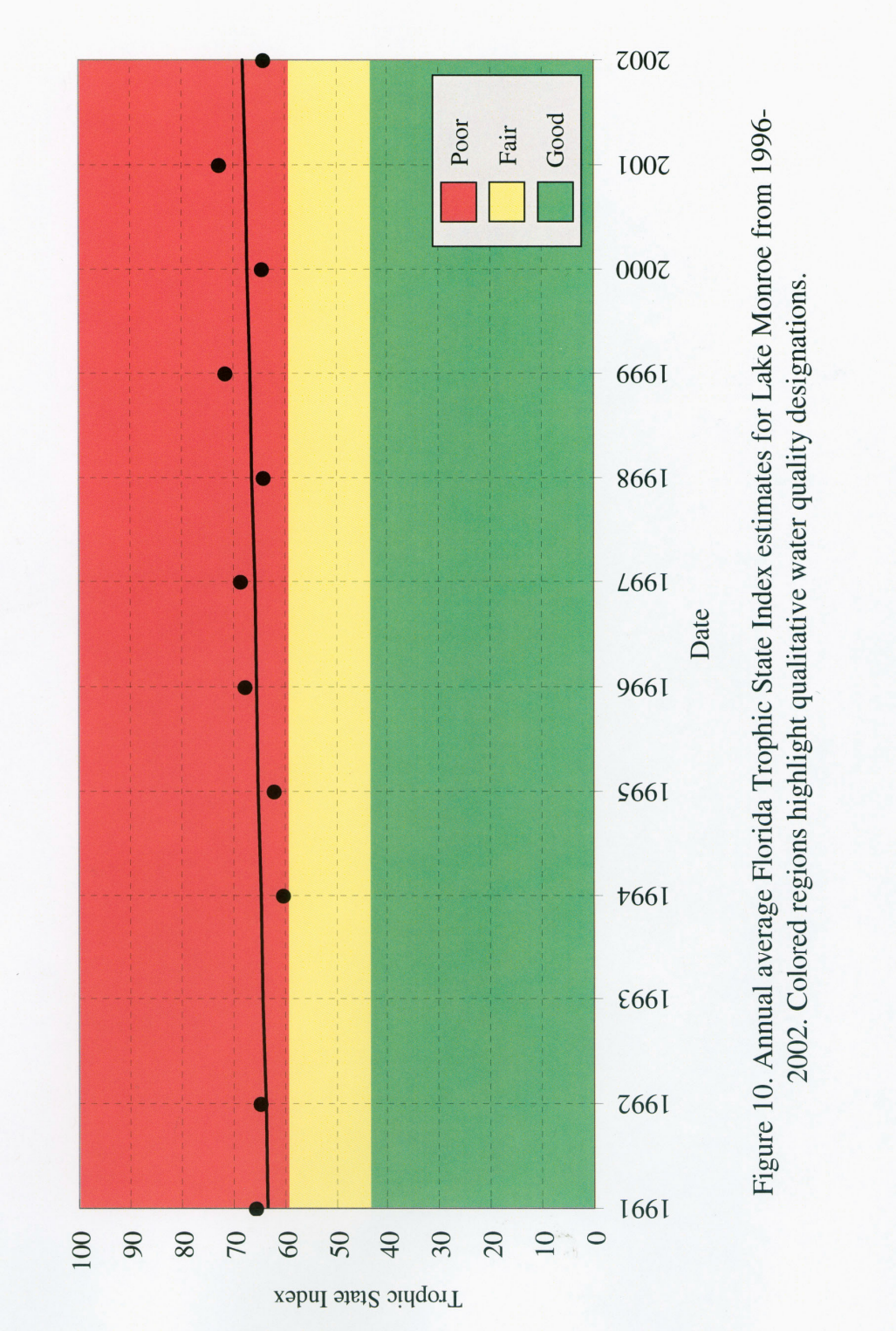

Figure 10. Annual average Florida Trophic State Index estimates for Lake Monroe from 1996-2002. Colored regions highlight qualitative water quality designations.

CONCLUSIONS

The quality of surface waters in the Middle St. Johns River Basin differed remarkably between water bodies. The St. Johns River enters the basin in fair / poor condition and improves after flowing through Lake Harney. Lake Harney has a retention time ranging from 7 to 49 days (Brezonik et al. 1976), limiting the time available for algal growth. This short retention time may explain why Lake Harney had a TSI indicating good water quality conditions (for nutrients). In the St. Johns River between Lake Harney and Lake Jesup, water quality, as measured by the WQI, was better than that measured upstream of Lake Harney. Particulates that are often associated with poor water quality in rivers likely settle to the bottom of Lake Harney as the water makes its way through the lake. Lake Jesup had the worst water quality of all the major lakes and contributed to degradation of water quality in the St. Johns River downstream. More data from water quality sampling stations farther downstream of Lake Jesup are needed to more accurately assess Lake Jesup's effects on this stretch of the St. Johns River. The quality of water, as measured by TSI in Lake Monroe, was intermediate between the other lakes. Lake Monroe has estimated hydraulic retention time similar to Lake Harney (9 to 34 days; Brezonik et al. 1976) but had higher TSI values. Further analysis is needed to determine the causes of Lake Monroe's elevated TSI values.

Indices such as the TSI and the WQI are useful tools for assessing the status and trends of water bodies; however, caution should be used when examining the results of such indices. The indices are derived from relationships estimated using data collected from a variety of lakes or streams in various geographic regions. There can be strong regional geographic and hydrographic influences on the constituent concentrations in water bodies; these spatial differences in natural background characteristics of water can limit the applicability of the index to a given water body. There have been many different approaches to calculating index values (using medians or means) incorporating different time periods (e.g., daily, monthly, or annually). The technique used to calculate these indices has a profound effect on the index values. There are equally valid considerations about the data, including length of the record, frequency of collection, data reliability, sampling technique, and analysis methods. TSI is calculated using nutrients and chlorophyll *a* concentrations only (indicators of eutrophication), whereas WQI incorporates data on nutrients, water clarity, oxygen demand, and biological diversity. Therefore, comparisons between TSI and WQI are not recommended. While TSI and WQI provide a measure of water quality, they provide little specific information on the analytes most

affecting water quality. Threshold values between the categories good, fair, and poor are not rigorously defined scientifically. Thus, these designations should be considered general guidelines for assessing water quality rather than definitive numerical criteria. For all of the reasons described above, it is important that the results of this analysis be considered primarily qualitative rather than quantitative when compared to similar estimates of water quality.

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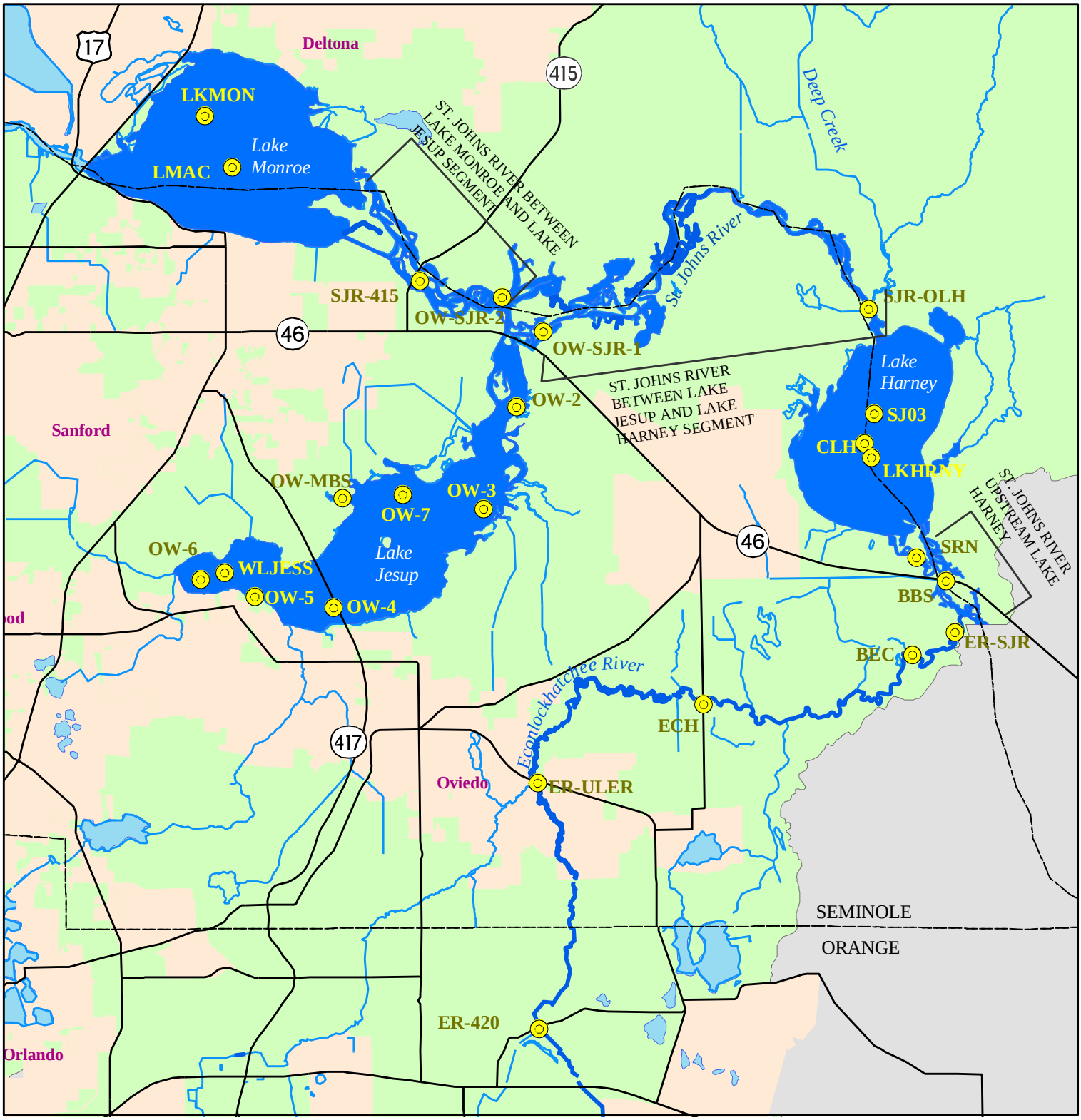
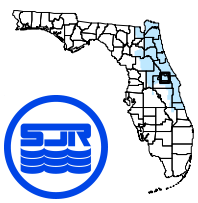
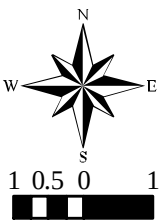
APPENDIX A—WATER QUALITY STATIONS USED FOR THE 2002 STATUS AND TRENDS REPORT



Appendix A
Water Quality Stations Used for the 2002 Status and Trends Report





Legend

- Water Quality Stations
- Transportation
- Streams
- Lakes
- Water Bodies included in this report
- County Boundaries
- Municipalities
- MSJRB Boundary

The St. Johns River Water Management District prepares and uses this Information for its own purposes and this information may not be suitable for other purposes. This information is provided as is. Further documentation of this data can be obtained by contacting: St. Johns River Water Management District, Geographic Information Systems,Program Management, P.O.Box 1429,Palatka, Florida 32178-1429. Tel: (386) 329-4176.

Author:mmartine, Source:V:\msjrb\all\projects\trend_report\mxd\mb_stations_appendixa.mxd, Time:1/15/2003 1:40:33 PM

APPENDIX B—QUALITY ASSURANCE AND QUALITY CONTROL CODES

QACID	QACNM
$	STORET — calculated value
^	Value flagged by range checking program and/or data manager; see comments
0	
1	Over 20% CV-Trophic (ES Remark code)
2	Dissolved greater than total
3	Constituents greater than total
4	Out of range
5	QA problem; see QA samples and blanks
6	Preservation error
7	Split sample
A	Value reported is the mean of two or more determinations
B	Results based upon colony counts outside the acceptable range
C	Calculated value
D	Data unreliable (STORET — field measurement)
E	Extra samples taken at composite stations
F	When reporting species, F determines the female sex
G	Maximum of two or more determinations
H	Value based on field kit determination; results may not be accurate
I	Value reported is between the lab method detection limit and the practical quantitation limit
J	Estimated value; value not accurate
K	Actual value is known to be less than value given
L	Actual value is known to be greater than value given
M	Presence of material verified but not quantified; actual value is less than given value
N	Presumptive evidence of presence of material
O	Sample amount was insufficient or sample was lost
P	Evidence of presence of material; presence of analyte was not confirmed by analysis
Q	Sample held beyond accepted holding time (# indicates days held beyond holding time limit)
R	Analysis not requested
S	Laboratory test (old meaning lost or insufficient sample)
T	Value reported is less than the laboratory method detection limit
U	Indicates material was analyzed for but not detected. Case of species, indicates undetermined sex
V	Indicates that the analyte was detected in both the sample and the associated method blank
W	Value observed is less than lowest value reportable under 'T' code
X	Value is quasi-vertically integrated sample
Y	Lab analysis was from an unpreserved or improperly preserved sample; value not accurate
Z	Too many colonies present; numeric value represents the filtration volume
#	Data not accurate; determined by DM/PM. See narrative explanation for detailed information
>	Blank values exceed 2 x the MDL

APPENDIX C—DETAILED STATISTICAL ANALYSES AND CHARTS

Water Quality Reports

ST JOHNS RIVER UPSTREAM OF LAKE HARNEY RIVER Station(s): (All)
Mean Chlorophyll-A (MG/M3) 1982 to 2002
Storet Number 32210

Summary

I. Descriptive Statistics

	Start	End
Dates	6/1/1982	12/1/2002
	Average	Std Dev
Mean	4.4102	3.9506
	lower	upper
95 % C.I.	3.4913	5.3292
	Period of Record	
1st Quartile	1.5440	
Median	2.9500	
2nd Quartile	5.4615	

	1998-2002	
Sample Size	Average	Std Dev
3.00	5.55	3.25
Median	4.5000	
1st Quartile	3.7250	
2nd Quartile	6.8500	

Testing Assumptions

I. Skewness

Statistic	2.4574

II. Kurtosis

Statistic	7.6145

III. KS Test - Normality

N	71
Critical Dmax	0.1055
Dmax	0.1671
Result	Reject Normality

Quality Assurance/Quality Control

QA for
ST JOHNS RIVER UPSTREAM OF LAKE HARNE

All J,Q,T,V,!, #, and Y were omitted
Remark Codes in this data set

	3
I	1
T	1
W	6
(blank)	77
Grand Total	88

Seasonality (Oct-May vs June-Sept)

I. Descriptive Statistics

	Wet (J-S)	Dry (O-M)
N	24	47
Mean	4.3303	4.4510
SD	3.7236	4.8352
1st Quartile	2.3878	1.4495
Median	3.3041	2.4780
2nd Quartile	5.2152	5.8095

II. Parametric Statistical Test

Two Sample	t-statistic	P-value
t-test	0.9077	0.3672
Result	No Seasonality	

Trend Analysis

I. Least-Squares Regression

Slope	6.005E-05	2.419134063	Intercept
SE slope	0.0003026	10.04861046	SE intercept
r-square	0.0005703	4.494396841	SE y-est.
F value	0.0393727	69	Sample N
SS regress	0.7953119	1393.772605	

Slope Significance	P-value	0.843295701
Result	Slope not greater than 0	

II. Decadal Rate Change Estimate

Rate (/10y)	0.219165	MG/M3/Decade

III. Pearson's r Correlation Coefficient

Pearsons r	0.0239
Result	Weak Correlation

IV. Least-Squares Rank Regression

(Non-parametric Trend Analysis +/-)

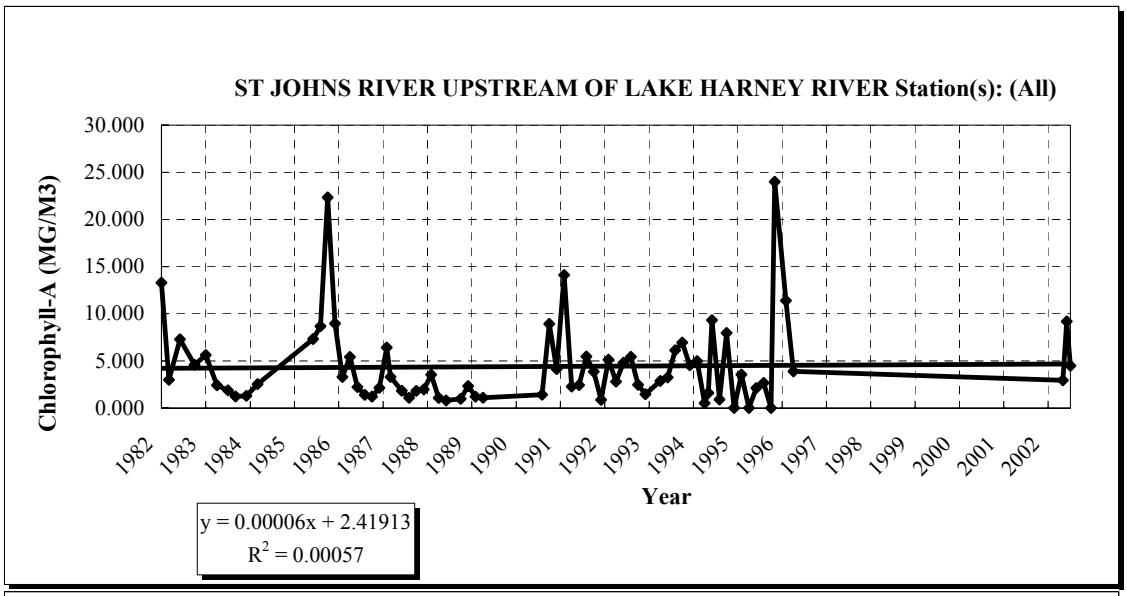
Slope	-0.0078471	36.28249497	Intercept
SE slope	0.1203781	4.986618679	SE intercept
r-square	6.158E-05	20.78745573	SE y-est.
F value	0.0042493	69	Sample N
SS regress	1.8362173	29816.16378	

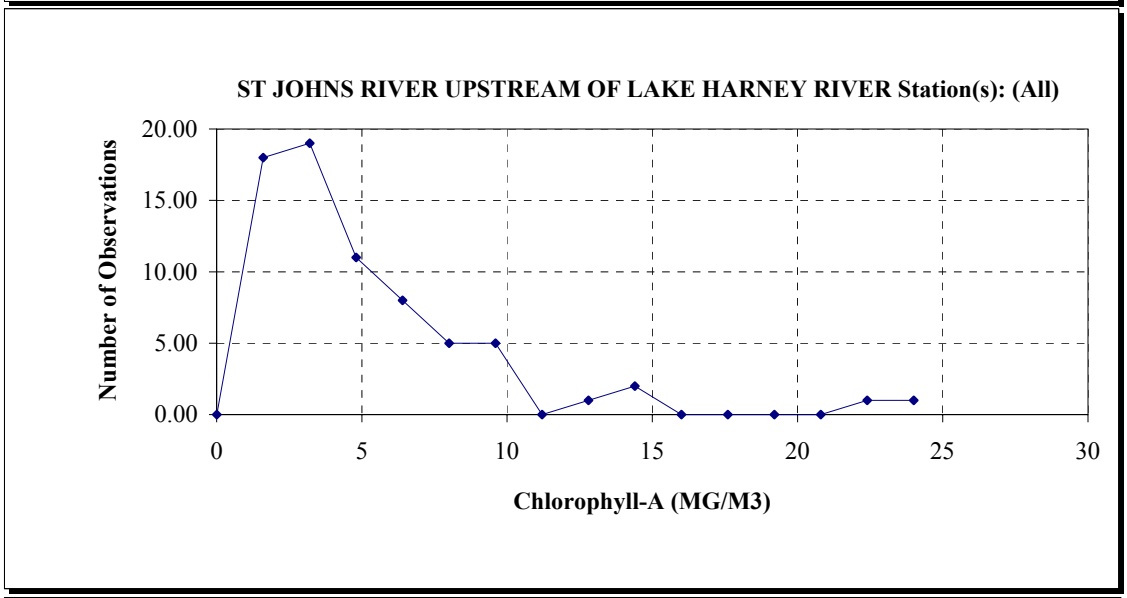
Slope Significance	P-value	0.948213645
Result	Slope equivalent to 0	

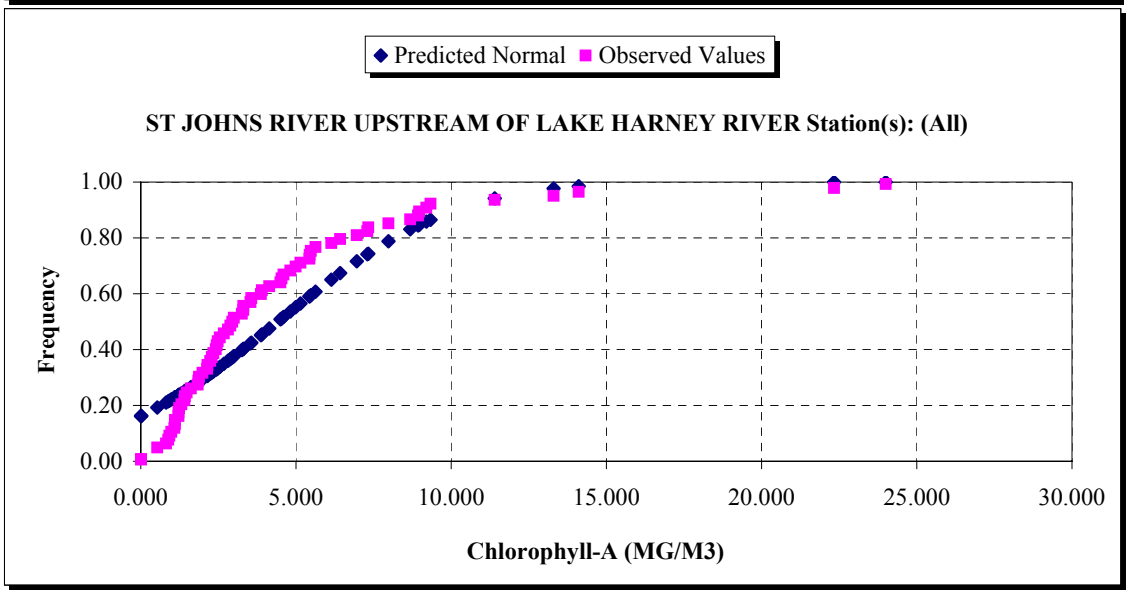
V. Rank Correlation

(Non-parametric Test of Association)

	rho	rho critical
Pearson (ranks)	-0.0078	0.1966
Result:	No significant association	


ST JOHNS RIVER UPSTREAM OF LAKE HARNEY RIVER Station(s): (All)
Chlorophyll-A (MG/M3)
30.000
25.000
20.000
15.000
10.000
5.000
0.000
1982
1983
1984
1985
1986
1987
1988
1989
1990
1991
1992
1993
1994
1995
1996
1997
1998
1999
2000
2001
2002
Year
y = 0.00006x + 2.41913
R2 = 0.00057


ST JOHNS RIVER UPSTREAM OF LAKE HARNEY RIVER Station(s): (All)
Number of Observations
20.00
15.00
10.00
5.00
0.00
0
5
10
15
20
25
30
Chlorophyll-A (MG/M3)


Predicted Normal
Observed Values
ST JOHNS RIVER UPSTREAM OF LAKE HARNEY RIVER Station(s): (All)
Frequency
1.00
0.80
0.60
0.40
0.20
0.00
0.000
5.000
10.000
15.000
20.000
25.000
30.000
Chlorophyll-A (MG/M3)

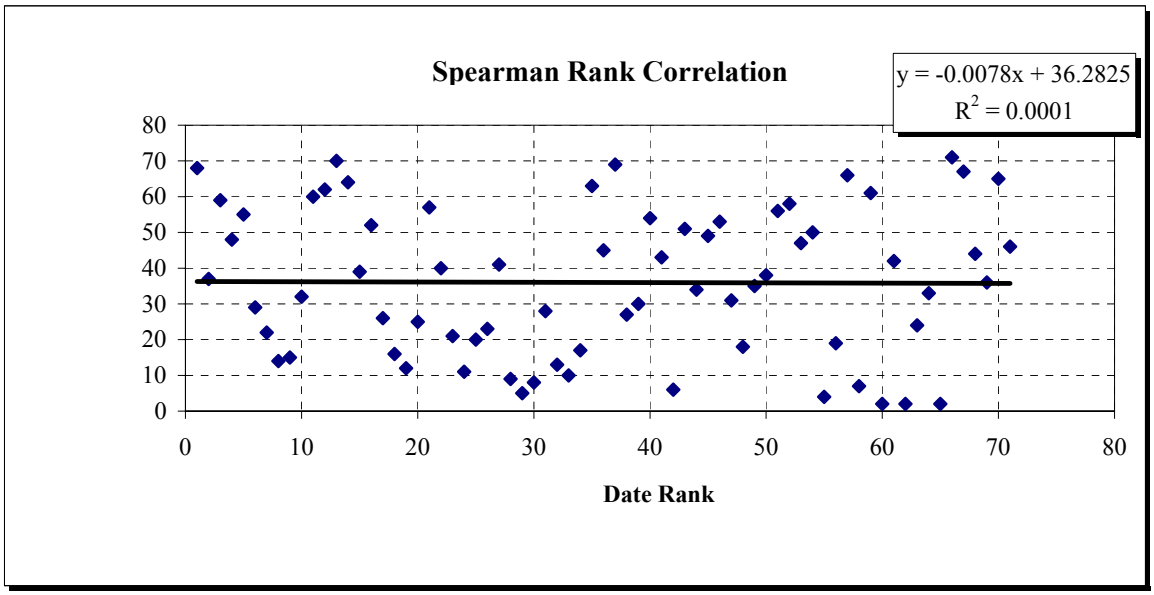


Table of Mean Period of Record Chlorophyll-A (MG/M3)

			95% Confidence Interval		
Year	**Median**	**Annual Ave**	**Lower**	**Upper**	**# Months**
1982	7.3000	7.8667	2.0126	13.7207	3
1983	3.5100	3.6316	1.8895	5.3737	4
1984	1.3095	1.6980	0.8657	2.5304	3
1985	7.3282	7.3282	#DIV/0!	#DIV/0!	1
1986	7.0573	8.4938	2.6433	14.3443	6
1987	2.0015	2.7258	1.1625	4.2892	6
1988	1.4679	1.7270	0.9267	2.5272	6
1989	1.1600	1.4113	0.7981	2.0244	4
1991	3.2940	5.5570	1.5727	9.5413	6
1992	4.3447	3.8353	2.4438	5.2269	6
1993	2.8850	3.1084	1.8249	4.3919	5
1994	4.9913	4.8717	2.6191	7.1244	7
1995	1.5313	2.4366	0.0066	4.8666	6
1996	3.9000	8.3970	-0.0987	16.8927	5
2002	4.5000	5.5500	1.8671	9.2329	3

Station Summary	
Station ID	**Samples collected**
SRN	88
Grand Total	88

Total Samples in Raw Data	
Total	89

Quality Assurance Codes Omitted	
Code	**Samples omitted**
Q	1
Grand Total	1

Water Quality Reports

ST JOHNS RIVER UPSTREAM OF LAKE HARNEY RIVER Station(s): (All)
Mean Dissolved Oxygen (MG/L) 1980 to 2002
Storet Number 300

Summary

I. Descriptive Statistics

	Start	End
Dates	1/1/1980	12/1/2002
	Average	Std Dev
Mean	5.8647	1.6089
	lower	upper
95 % C.I.	5.6131	6.1164
	Period of Record	
1st Quartile	4.5000	
Median	6.1000	
2nd Quartile	7.3700	

	1998-2002	
Sample Size	Average	Std Dev
57.00	5.52	2.55
Median	5.3600	
1st Quartile	4.0600	
2nd Quartile	7.1400	

Testing Assumptions

I. Skewness

Statistic	-0.1675

II. Kurtosis

Statistic	-0.2825

III. KS Test - Normality

N	157
Critical Dmax	0.0728
Dmax	0.0583
Result	Can't reject Normality

Quality Assurance/Quality Control

QA for
ST JOHNS RIVER UPSTREAM OF LAKE HARNE

All J,Q,T,V,!, #, and Y were omitted
Remark Codes in this data set

	7
(blank)	185
Grand Total	192

Seasonality (Oct-May vs June-Sept)

I. Descriptive Statistics

	Wet (J-S)	Dry (O-M)
N	54	103
Mean	4.5860	6.5351
SD	2.0264	2.0005
1st Quartile	3.2350	5.2800
Median	4.5850	6.7200
2nd Quartile	6.0750	7.9800

II. Parametric Statistical Test

Two Sample	t-statistic	P-value
t-test	0.0000	1.0000
Result	No Seasonality	

Trend Analysis

I. Least-Squares Regression

Slope	-8.751E-05	8.846356743	Intercept
SE slope	6.75E-05	2.306486007	SE intercept
r-square	0.0107281	2.203054422	SE y-est.
F value	1.6808838	155	Sample N
SS regress	8.1580835	752.2845619	

Slope Significance	P-value	0.196733948
Result	Slope not greater than 0	

II. Decadal Rate Change Estimate

Rate (/10y)	-0.319403	MG/L/Decade

III. Pearson's r Correlation Coefficient

Pearsons r	-0.1036
Result	Weak Correlation

IV. Least-Squares Rank Regression

(Non-parametric Trend Analysis +/-)

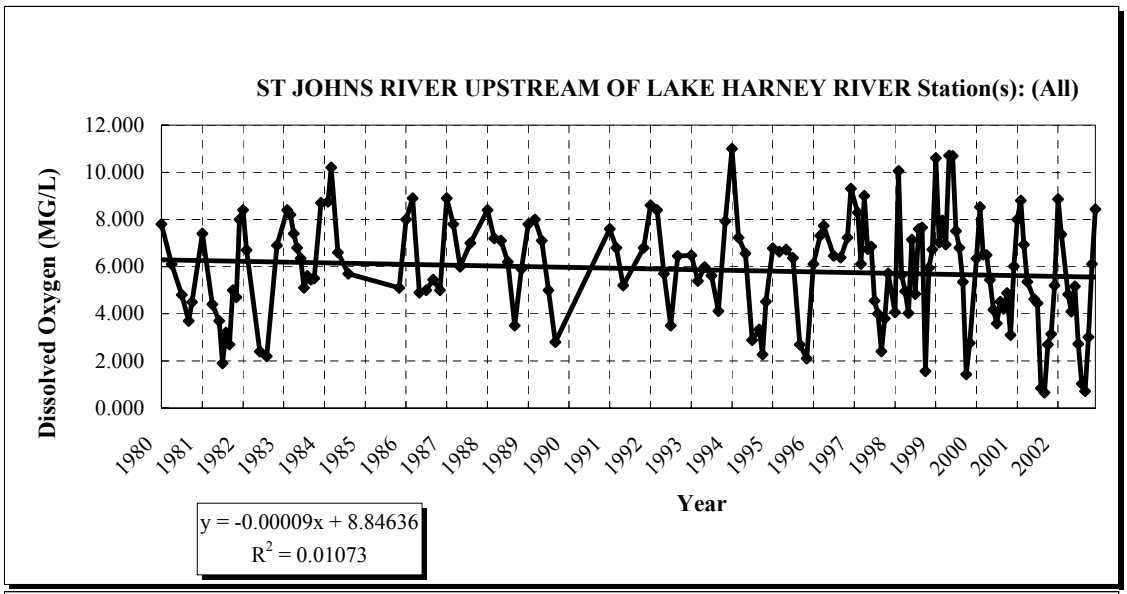
Slope	-0.1241418	88.80720235	Intercept
SE slope	0.0796973	7.258580041	SE intercept
r-square	0.0154125	45.25780854	SE y-est.
F value	2.4263259	155	Sample N
SS regress	4969.7688	317481.7312	

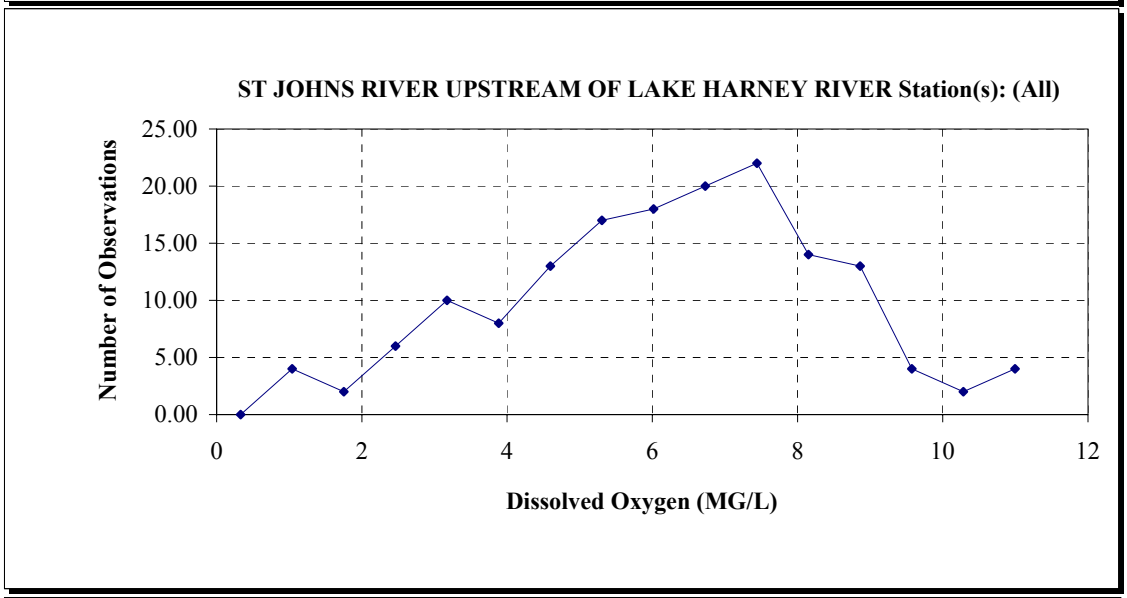
Slope Significance	P-value	0.121351719
Result	Slope equivalent to 0	

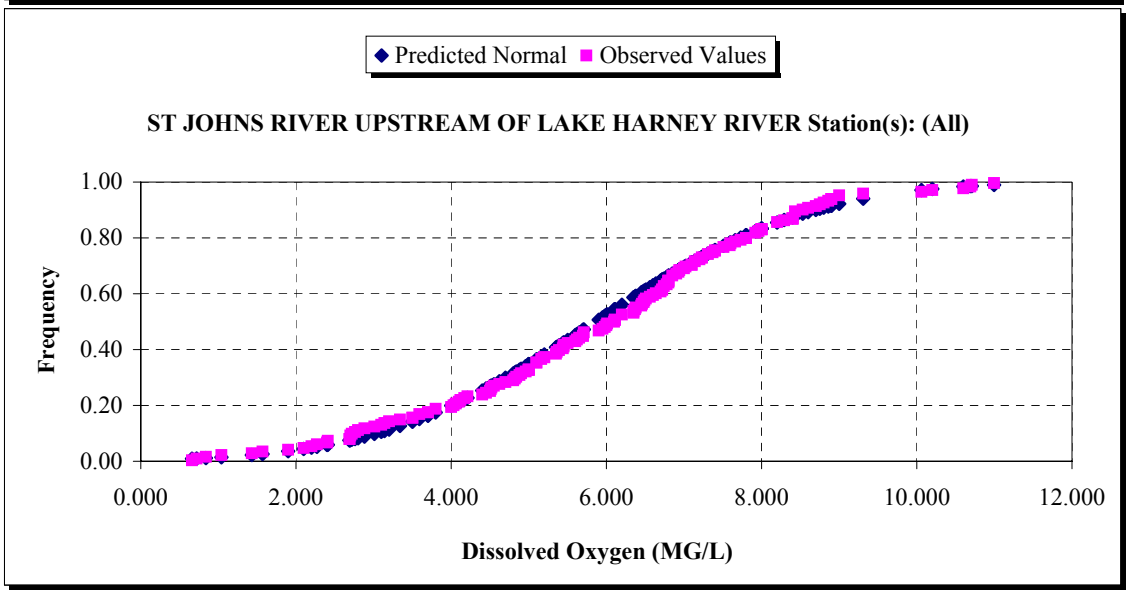
V. Rank Correlation

(Non-parametric Test of Association)

	rho	rho critical
Pearson (ranks)	-0.1241	0.1317
Result:	No significant association	


ST JOHNS RIVER UPSTREAM OF LAKE HARNEY RIVER Station(s): (All)
Dissolved Oxygen (MG/L)
12.000
10.000
8.000
6.000
4.000
2.000
0.000
1980
1981
1982
1983
1984
1985
1986
1987
1988
1989
1990
1991
1992
1993
1994
1995
1996
1997
1998
1999
2000
2001
2002
Year
y = -0.00009x + 8.84636
R2 = 0.01073


ST JOHNS RIVER UPSTREAM OF LAKE HARNEY RIVER Station(s): (All)
Number of Observations
25.00
20.00
15.00
10.00
5.00
0.00
0
2
4
6
8
10
12
Dissolved Oxygen (MG/L)


Predicted Normal
Observed Values
ST JOHNS RIVER UPSTREAM OF LAKE HARNEY RIVER Station(s): (All)
Frequency
1.00
0.80
0.60
0.40
0.20
0.00
0.000
2.000
4.000
6.000
8.000
10.000
12.000
Dissolved Oxygen (MG/L)

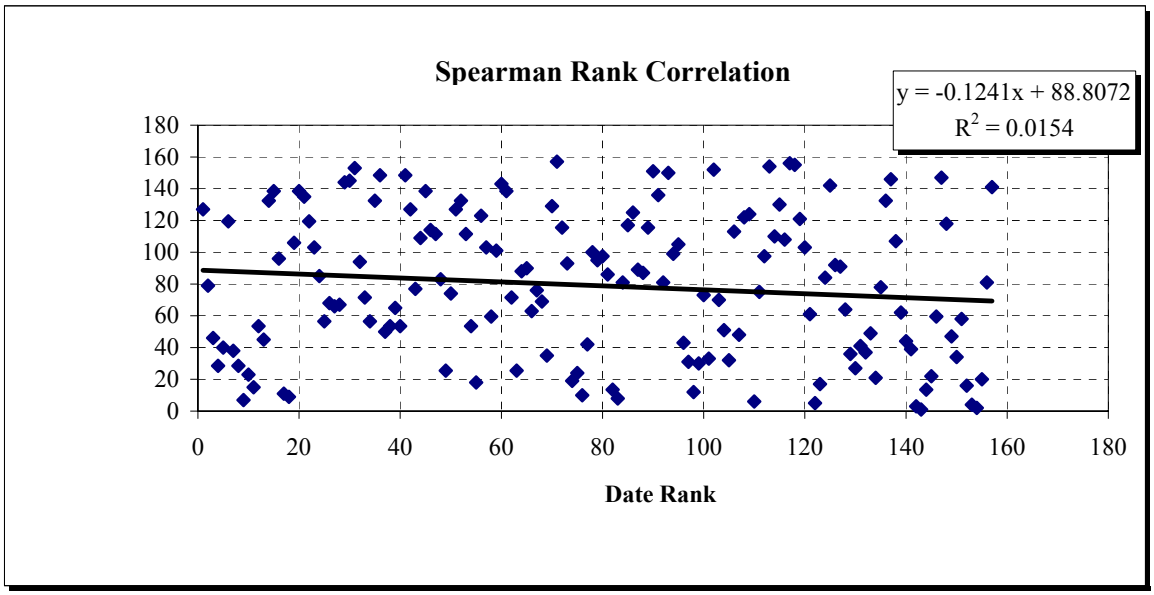


Table of Mean Period of Record Dissolved Oxygen (MG/L)

			95% Confidence Interval		
Year	**Median**	**Annual Ave**	**Lower**	**Upper**	**# Months**
1980	4.8000	5.3800	3.9729	6.7871	5
1981	4.4000	4.5556	3.2234	5.8877	9
1982	6.7000	5.3200	2.8351	7.8049	5
1983	6.5750	6.7500	5.9105	7.5895	10
1984	7.6750	7.8125	5.8112	9.8138	4
1985	5.1000	5.1000	#DIV/0!	#DIV/0!	1
1986	5.2250	6.2083	4.7922	7.6245	6
1987	7.4000	7.4250	6.2211	8.6289	4
1988	6.6500	6.3833	5.0527	7.7140	6
1989	7.1000	6.1400	4.2001	8.0799	5
1991	6.8000	6.6000	5.6135	7.5865	4
1992	6.4500	6.5300	4.6884	8.3716	5
1993	5.8000	5.9183	4.9108	6.9259	6
1994	4.5200	5.3998	3.1135	7.6860	7
1995	6.5033	5.2156	3.4575	6.9736	6
1996	7.2300	7.2186	6.4098	8.0273	7
1997	5.9100	5.7460	4.4592	7.0328	10
1998	5.8000	5.8525	4.6089	7.0961	12
1999	7.0200	7.0700	5.2655	8.8745	11
2000	5.1600	5.3158	4.4465	6.1851	12
2001	4.6200	4.6082	3.0332	6.1831	11
2002	4.8200	4.7582	3.1195	6.3969	11

Station Summary	
Station ID	**Samples collected**
BBS	27
SRN	165
Grand Total	192

Total Samples in Raw Data	
Total	198

Quality Assurance Codes Omitted	
Code	**Samples omitted**
J	6
Grand Total	6

Water Quality Reports

ST JOHNS RIVER UPSTREAM OF LAKE HARNEY RIVER Station(s): (All)
Mean Total Nitrogen - calculated (MG/L as N) 1981 to 2002
Storet Number 600

Summary

I. Descriptive Statistics

	Start	End
Dates	7/1/1981	12/1/2002
	Average	Std Dev
Mean	1.5884	1.0949
	lower	upper
95 % C.I.	1.4016	1.7752
	Period of Record	
1st Quartile	1.3514	
Median	1.5475	
2nd Quartile	1.7580	

	1998-2002	
Sample Size	Average	Std Dev
56.00	1.68	0.33
Median	1.6280	
1st Quartile	1.4606	
2nd Quartile	1.8053	

Testing Assumptions

I. Skewness

Statistic	1.6784

II. Kurtosis

Statistic	9.1975

III. KS Test - Normality

N	132
Critical Dmax	0.0776
Dmax	0.1172
Result	Reject Normality

Quality Assurance/Quality Control

QA for
ST JOHNS RIVER UPSTREAM OF LAKE HARNE

All J,Q,T,V,!, #, and Y were omitted
Remark Codes in this data set

	6
(blank)	152
Grand Total	158

Seasonality (Oct-May vs June-Sept)

I. Descriptive Statistics

	Wet (J-S)	Dry (O-M)
N	43	89
Mean	1.5845	1.5903
SD	0.5899	0.2913
1st Quartile	1.3250	1.3660
Median	1.5420	1.5480
2nd Quartile	1.7470	1.7670

II. Parametric Statistical Test

Two Sample	t-statistic	P-value
t-test	0.9518	0.3430
Result	No Seasonality	

Trend Analysis

I. Least-Squares Regression

Slope	6.808E-06	1.351924493	Intercept
SE slope	1.639E-05	0.570522443	SE intercept
r-square	0.001325	0.411887984	SE y-est.
F value	0.1724737	130	Sample N
SS regress	0.0292605	22.05472247	

Slope Significance	P-value	0.678607307
Result	Slope not greater than 0	

II. Decadal Rate Change Estimate

Rate (/10y)	0.0248507	MG/L as N/Decade

III. Pearson's r Correlation Coefficient

Pearsons r	0.0364
Result	Weak Correlation

IV. Least-Squares Rank Regression

(Non-parametric Trend Analysis +/-)

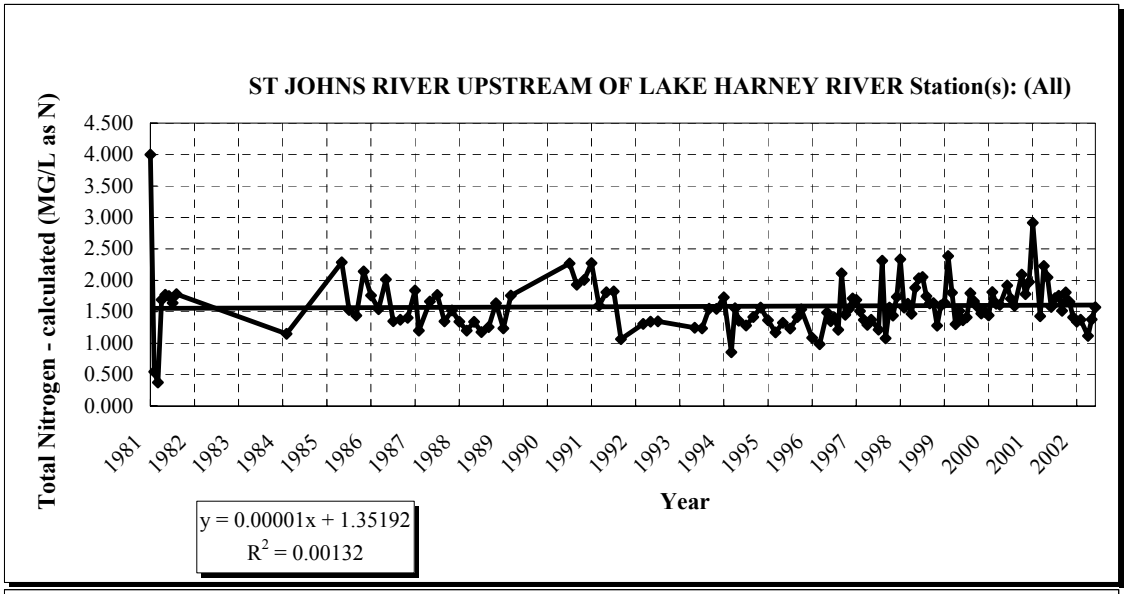
Slope	0.137128	57.38098543	Intercept
SE slope	0.0868772	6.658535835	SE intercept
r-square	0.0188041	38.03324841	SE y-est.
F value	2.4913877	130	Sample N
SS regress	3603.862	188048.638	

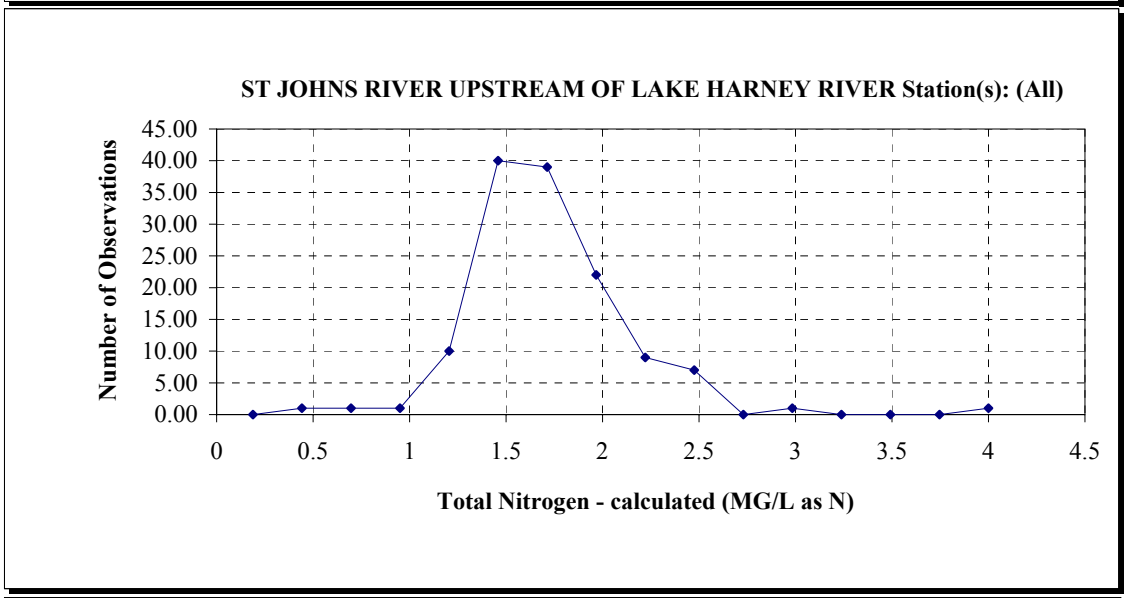
Slope Significance	P-value	0.116901006
Result	Slope equivalent to 0	

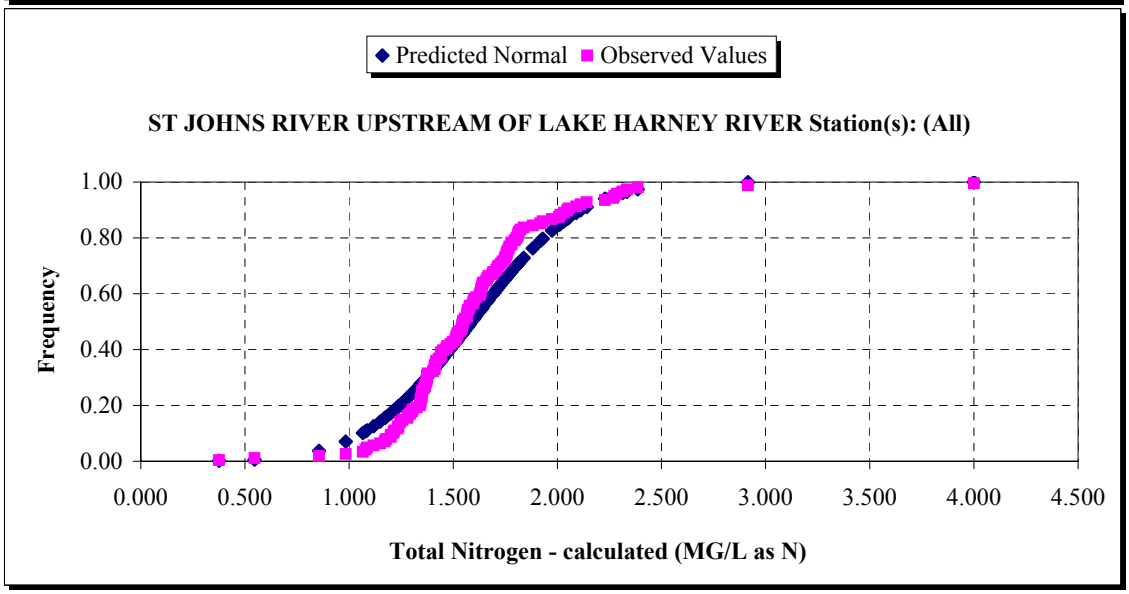
V. Rank Correlation

(Non-parametric Test of Association)

	rho	rho critical
Pearson (ranks)	0.1371	0.1437
Result:	No significant association	


ST JOHNS RIVER UPSTREAM OF LAKE HARNEY RIVER Station(s): (All)
Total Nitrogen - calculated (MG/L as N)
4.500
4.000
3.500
3.000
2.500
2.000
1.500
1.000
0.500
0.000
1981
1982
1983
1984
1985
1986
1987
1988
1989
1990
1991
1992
1993
1994
1995
1996
1997
1998
1999
2000
2001
2002
Year
y = 0.00001x + 1.35192
R2 = 0.00132


ST JOHNS RIVER UPSTREAM OF LAKE HARNEY RIVER Station(s): (All)
Number of Observations
45.00
40.00
35.00
30.00
25.00
20.00
15.00
10.00
5.00
0.00
0
0.5
1
1.5
2
2.5
3
3.5
4
4.5
Total Nitrogen - calculated (MG/L as N)


Predicted Normal
Observed Values
ST JOHNS RIVER UPSTREAM OF LAKE HARNEY RIVER Station(s): (All)
Frequency
1.00
0.80
0.60
0.40
0.20
0.00
0.000
0.500
1.000
1.500
2.000
2.500
3.000
3.500
4.000
4.500
Total Nitrogen - calculated (MG/L as N)

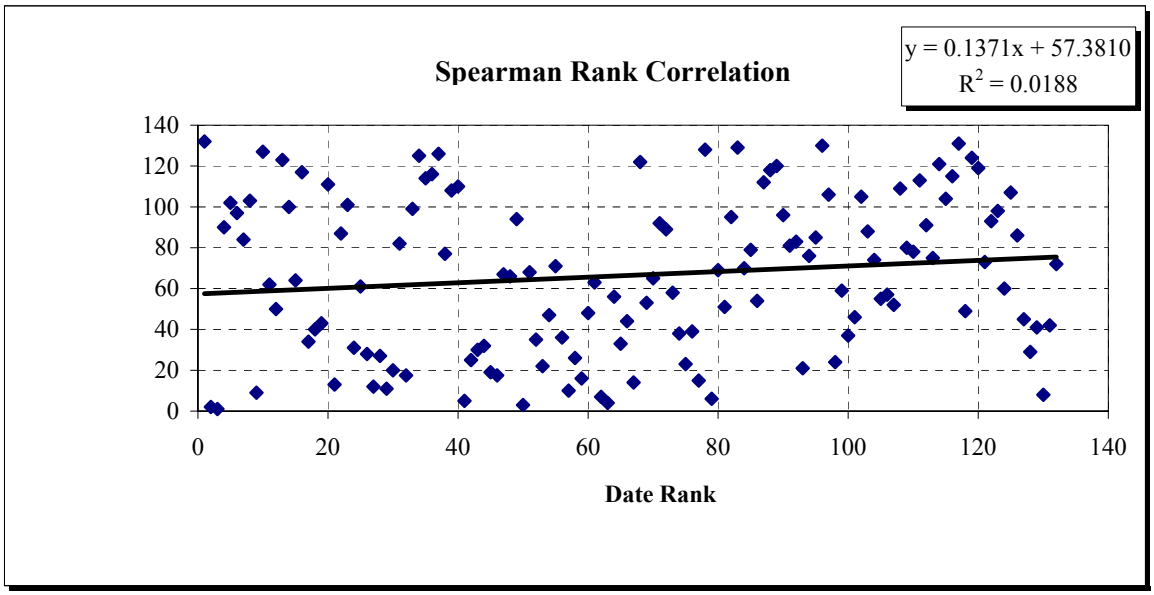


Table of Mean Period of Record Total Nitrogen - calculated (MG/L as N)

			95% Confidence Interval		
Year	**Median**	**Annual Ave**	**Lower**	**Upper**	**# Months**
1981	1.7210	1.6890	0.6530	2.7250	6
1982	1.7100	1.7100	1.5728	1.8472	2
1984	1.1490	1.1490	#DIV/0!	#DIV/0!	1
1985	2.2860	2.2860	#DIV/0!	#DIV/0!	1
1986	1.6515	1.7380	1.5090	1.9670	6
1987	1.3885	1.4720	1.2850	1.6590	6
1988	1.3460	1.4198	1.2613	1.5783	6
1989	1.2570	1.4128	1.1817	1.6439	5
1991	1.9690	1.9820	1.7717	2.1923	6
1992	1.3255	1.3850	1.0744	1.6956	4
1993	1.2975	1.2975	1.1966	1.3984	2
1994	1.5470	1.4046	1.1908	1.6185	7
1995	1.3450	1.3548	1.2480	1.4617	6
1996	1.3495	1.2999	1.1459	1.4539	7
1997	1.4520	1.5164	1.3690	1.6638	11
1998	1.5970	1.6885	1.4660	1.9111	12
1999	1.6360	1.6638	1.4853	1.8423	12
2000	1.6100	1.6218	1.5240	1.7196	11
2001	1.8772	1.9346	1.6685	2.2007	10
2002	1.5170	1.5140	1.3892	1.6388	11

Station Summary	
Station ID	**Samples collected**
BBS	8
SRN	150
Grand Total	158

Total Samples in Raw Data	
Total	174

Quality Assurance Codes Omitted	
Code	**Samples omitted**
Q8	1
J	2
Q	11
Q1	2
Grand Total	16

Water Quality Reports

ST JOHNS RIVER UPSTREAM OF LAKE HARNEY RIVER Station(s): (All)
Mean Total Organic Carbon (MG/L as C) 1988 to 2002
Storet Number 680

Summary

I. Descriptive Statistics

	Start	End
Dates	3/1/1988	12/1/2002
	Average	Std Dev
Mean	22.2252	4.3953
	lower	upper
95 % C.I.	21.4254	23.0251
	Period of Record	
1st Quartile	18.2937	
Median	21.7650	
2nd Quartile	24.9750	

	1998-2002	
Sample Size	Average	Std Dev
60.00	22.70	6.02
Median	22.9725	
1st Quartile	18.4075	
2nd Quartile	25.8950	

Testing Assumptions

I. Skewness

Statistic	0.3309

II. Kurtosis

Statistic	0.5563

III. KS Test - Normality

N	116
Critical Dmax	0.0828
Dmax	0.0758
Result	Can't reject Normality

Quality Assurance/Quality Control

QA for
ST JOHNS RIVER UPSTREAM OF LAKE HARNE

All J,Q,T,V,!, #, and Y were omitted
Remark Codes in this data set

	7
(blank)	142
Grand Total	149

Seasonality (Oct-May vs June-Sept)

I. Descriptive Statistics

	Wet (J-S)	Dry (O-M)
N	39	77
Mean	22.8853	21.8909
SD	6.5571	4.7203
1st Quartile	18.4625	18.2600
Median	22.7000	21.5000
2nd Quartile	26.5400	24.6400

II. Parametric Statistical Test

Two Sample	t-statistic	P-value
t-test	0.4027	0.6879
Result	No Seasonality	

Trend Analysis

I. Least-Squares Regression

Slope	0.0002384	13.7504065	Intercept
SE slope	0.0003503	12.463479	SE intercept
r-square	0.004046	5.412162565	SE y-est.
F value	0.4631155	114	Sample N
SS regress	13.565349	3339.231414	

Slope Significance	P-value	0.497551359
Result	Slope not greater than 0	

II. Decadal Rate Change Estimate

Rate (/10y)	0.8700635	MG/L as C/Decade

III. Pearson's r Correlation Coefficient

Pearsons r	0.0636
Result	Weak Correlation

IV. Least-Squares Rank Regression

(Non-parametric Trend Analysis +/-)

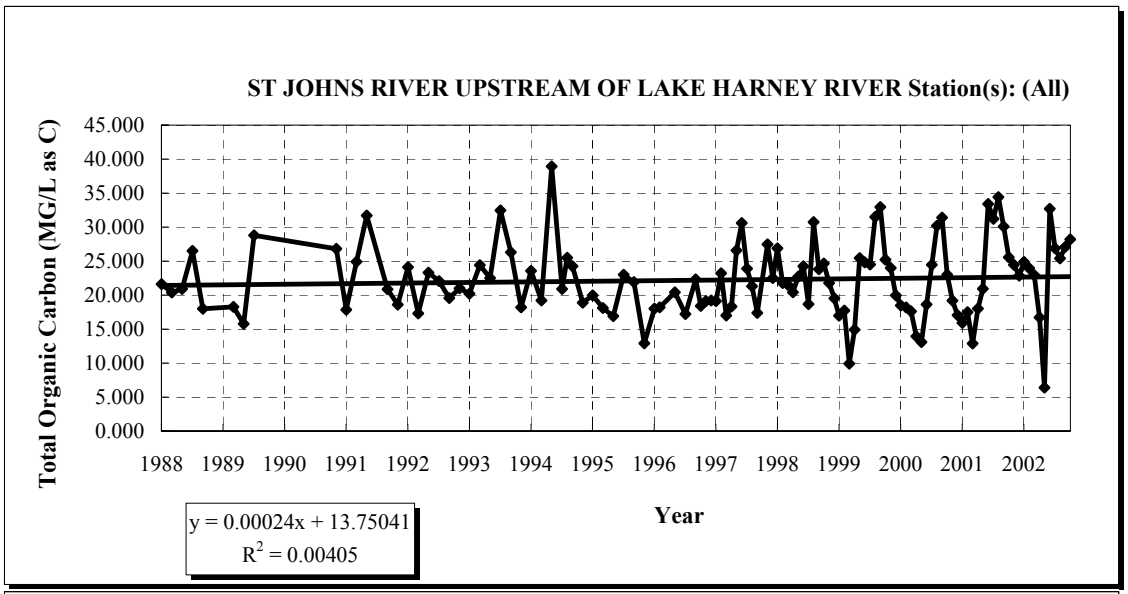
Slope	0.1088302	52.13343328	Intercept
SE slope	0.0931016	6.275556077	SE intercept
r-square	0.0118442	33.57663511	SE y-est.
F value	1.3664224	114	Sample N
SS regress	1540.4915	128522.5085	

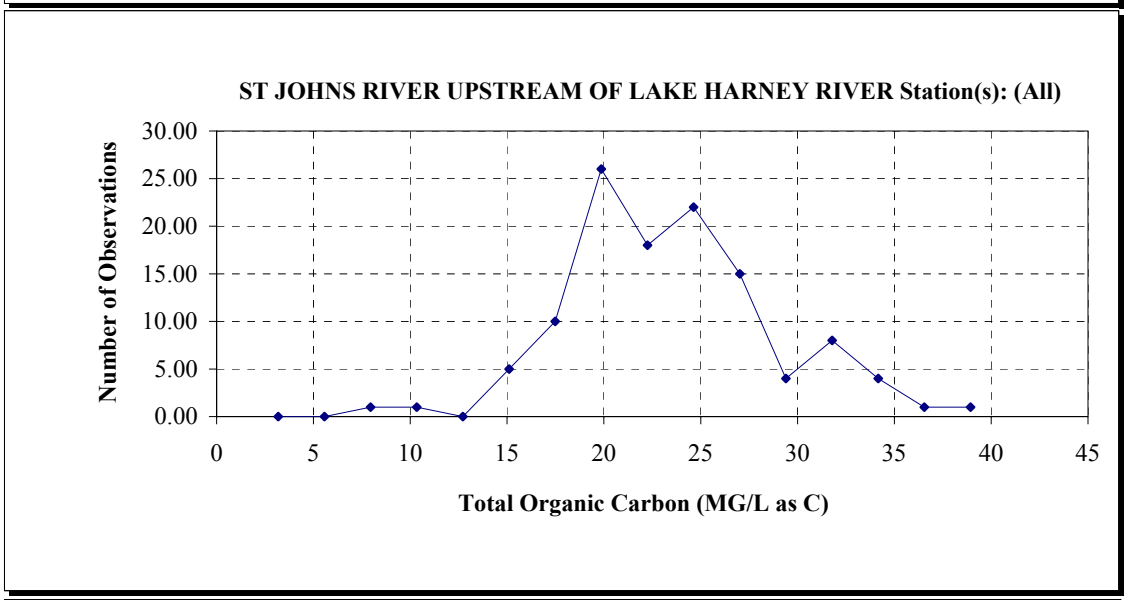
Slope Significance	P-value	0.24486601
Result	Slope equivalent to 0	

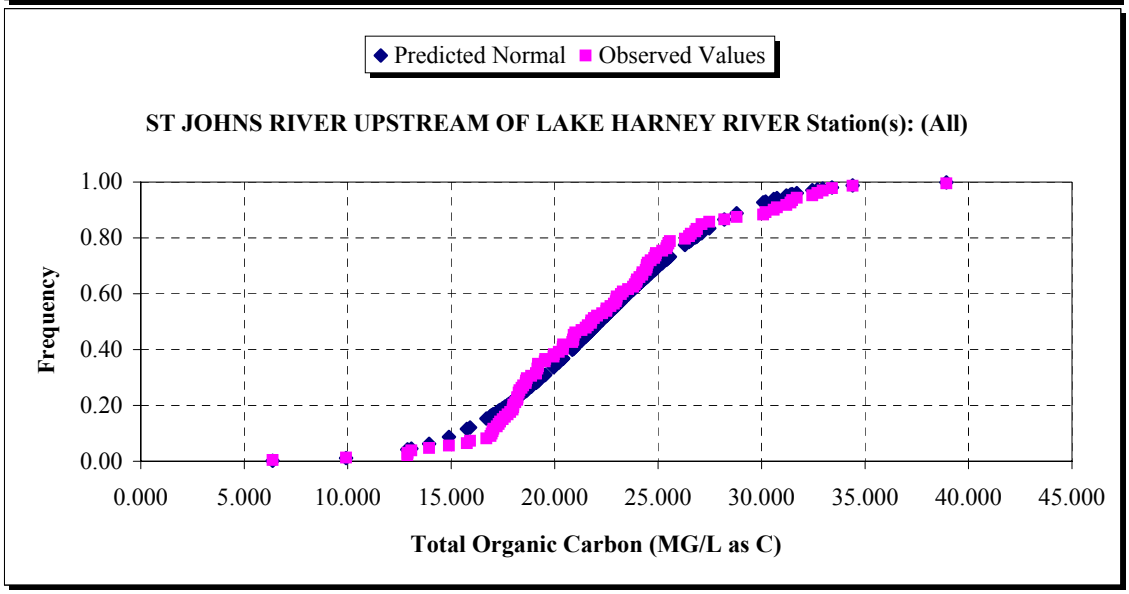
V. Rank Correlation

(Non-parametric Test of Association)

	rho	rho critical
Pearson (ranks)	0.1088	0.1534
Result:	No significant association	


ST JOHNS RIVER UPSTREAM OF LAKE HARNEY RIVER Station(s): (All)
Total Organic Carbon (MG/L as C)
45.000
40.000
35.000
30.000
25.000
20.000
15.000
10.000
5.000
0.000
1988 1989 1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002
Year
y = 0.00024x + 13.75041
R2 = 0.00405


ST JOHNS RIVER UPSTREAM OF LAKE HARNEY RIVER Station(s): (All)
Number of Observations
30.00
25.00
20.00
15.00
10.00
5.00
0.00
0 5 10 15 20 25 30 35 40 45
Total Organic Carbon (MG/L as C)


Predicted Normal
Observed Values
ST JOHNS RIVER UPSTREAM OF LAKE HARNEY RIVER Station(s): (All)
Frequency
1.00
0.80
0.60
0.40
0.20
0.00
0.000 5.000 10.000 15.000 20.000 25.000 30.000 35.000 40.000 45.000
Total Organic Carbon (MG/L as C)

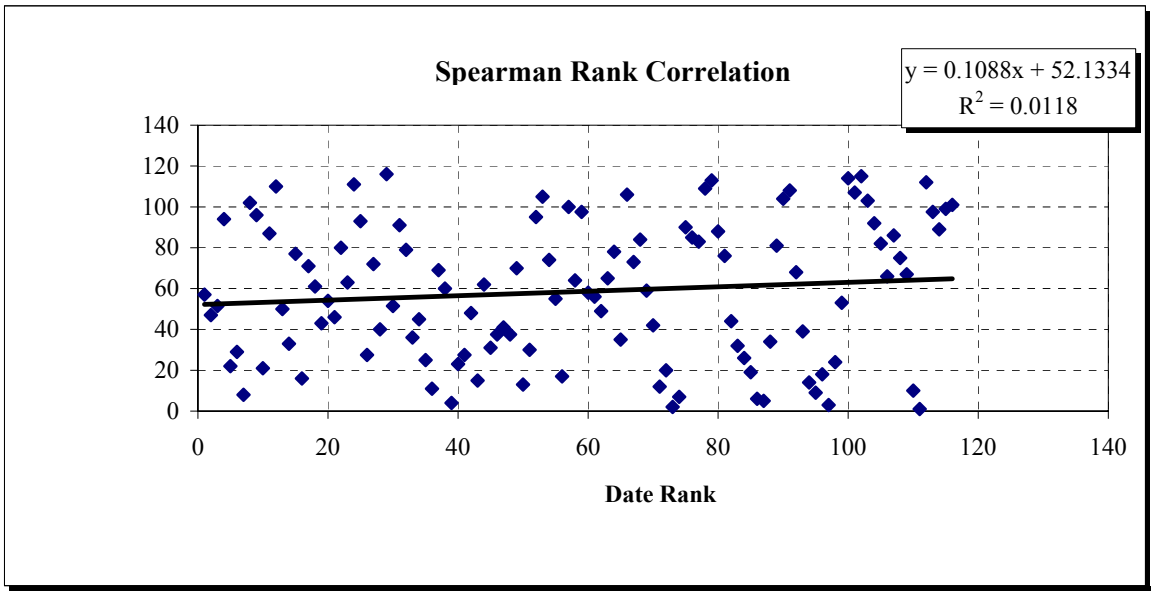


Table of Mean Period of Record Total Organic Carbon (MG/L as C)

			95% Confidence Interval		
Year	**Median**	**Annual Ave**	**Lower**	**Upper**	**# Months**
1988	20.9000	21.4720	18.7330	24.2110	5
1989	18.2600	20.9367	13.1116	28.7617	3
1991	24.9000	24.4200	19.7242	29.1158	5
1992	20.8000	20.8167	18.6297	23.0037	6
1993	23.4500	24.4750	20.8754	28.0746	6
1994	23.5500	24.3619	19.2038	29.5200	7
1995	19.4167	19.7889	17.9347	21.6430	6
1996	18.2000	18.2000	16.0440	20.3560	7
1997	19.2000	21.4200	18.9036	23.9364	11
1998	23.2450	23.7738	21.8884	25.6591	12
1999	23.1350	22.0979	18.3128	25.8830	12
2000	19.2850	21.0713	17.8225	24.3200	12
2001	20.0450	23.0058	18.7425	27.2691	12
2002	24.6650	23.5363	19.8064	27.2661	12

Station Summary	
Station ID	**Samples collected**
SRN	149
Grand Total	149

Total Samples in Raw Data	
Total	150

Quality Assurance Codes Omitted	
Code	**Samples omitted**
Q	1
Grand Total	1

Water Quality Reports

ST JOHNS RIVER UPSTREAM OF LAKE HARNEY RIVER Station(s): (All)
Mean Total Phosphorus-T (MG/L as P) 1980 to 2002
Storet Number 665

Summary

I. Descriptive Statistics

	Start	End
Dates	1/1/1980	12/1/2002
	Average	Std Dev
Mean	0.1074	0.2318
	lower	upper
95 % C.I.	0.0717	0.1431
	Period of Record	
1st Quartile	0.0690	
Median	0.0872	
2nd Quartile	0.1170	

	1998-2002	
Sample Size	Average	Std Dev
59.00	0.10	0.03
Median	0.0960	
1st Quartile	0.0803	
2nd Quartile	0.1168	

Testing Assumptions

I. Skewness

Statistic	4.3369

II. Kurtosis

Statistic	24.8138

III. KS Test - Normality

N	162
Critical Dmax	0.0728
Dmax	0.2408
Result	Reject Normality

Quality Assurance/Quality Control

QA for
ST JOHNS RIVER UPSTREAM OF LAKE HARNE

All J,Q,T,V,!, #, and Y were omitted
Remark Codes in this data set

	7
K	1
(blank)	187
Grand Total	195

Seasonality (Oct-May vs June-Sept)

I. Descriptive Statistics

	Wet (J-S)	Dry (O-M)
N	53	109
Mean	0.1310	0.0959
SD	0.1213	0.0658
1st Quartile	0.0810	0.0610
Median	0.1040	0.0820
2nd Quartile	0.1230	0.1090

II. Parametric Statistical Test

Two Sample	t-statistic	P-value
t-test	0.0531	0.9577
Result	No Seasonality	

Trend Analysis

I. Least-Squares Regression

Slope	-1.049E-05	0.46536294	Intercept
SE slope	2.628E-06	0.089987027	SE intercept
r-square	0.0904688	0.085215314	SE y-est.
F value	15.91481	160	Sample N
SS regress	0.1155678	1.161863958	

Slope Significance	P-value	0.000100611
Result	Slope greater than 0	

II. Decadal Rate Change Estimate

Rate (/10y)	-0.0382732	MG/L as P/Decade

III. Pearson's r Correlation Coefficient

Pearsons r	-0.3008
Result	Weak Correlation

IV. Least-Squares Rank Regression

(Non-parametric Trend Analysis +/-)

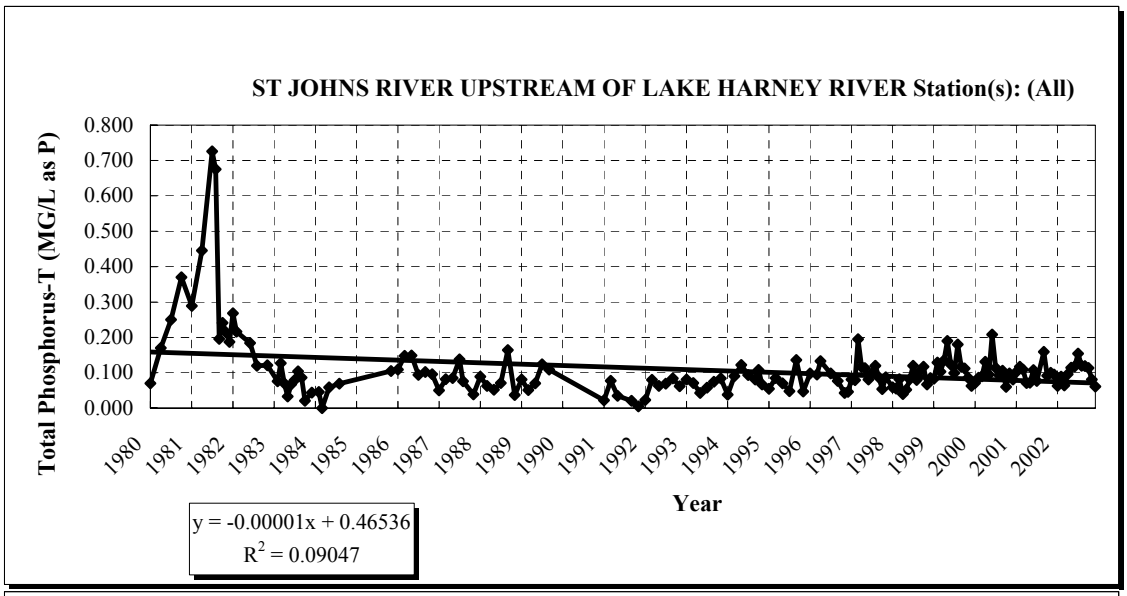
Slope	-0.0079767	82.15010352	Intercept
SE slope	0.0790473	7.427571067	SE intercept
r-square	6.364E-05	47.05010346	SE y-est.
F value	0.010183	160	Sample N
SS regress	22.54224	354193.9578	

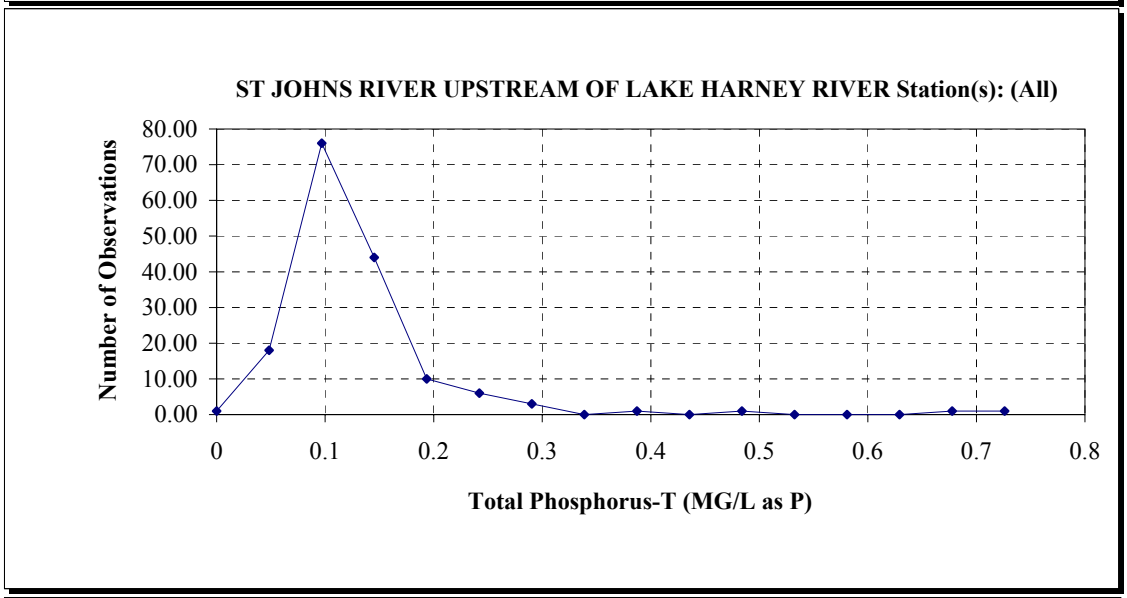
Slope Significance	P-value	0.919747555
Result	Slope equivalent to 0	

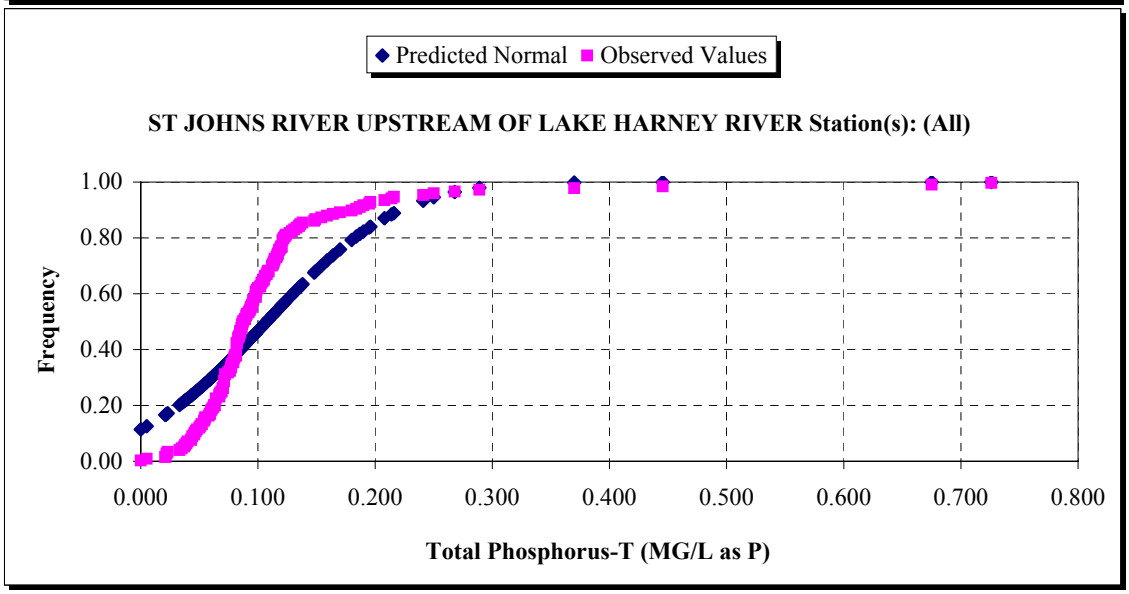
V. Rank Correlation

(Non-parametric Test of Association)

	rho	rho critical
Pearson (ranks)	-0.0080	0.1296
Result:	No significant association	


ST JOHNS RIVER UPSTREAM OF LAKE HARNEY RIVER Station(s): (All)
Total Phosphorus-T (MG/L as P)
0.800
0.700
0.600
0.500
0.400
0.300
0.200
0.100
0.000
1980 1981 1982 1983 1984 1985 1986 1987 1988 1989 1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002
Year
y = -0.00001x + 0.46536
R2 = 0.09047


ST JOHNS RIVER UPSTREAM OF LAKE HARNEY RIVER Station(s): (All)
Number of Observations
80.00
70.00
60.00
50.00
40.00
30.00
20.00
10.00
0.00
0 0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8
Total Phosphorus-T (MG/L as P)


Predicted Normal
Observed Values
ST JOHNS RIVER UPSTREAM OF LAKE HARNEY RIVER Station(s): (All)
Frequency
1.00
0.80
0.60
0.40
0.20
0.00
0.000 0.100 0.200 0.300 0.400 0.500 0.600 0.700 0.800
Total Phosphorus-T (MG/L as P)

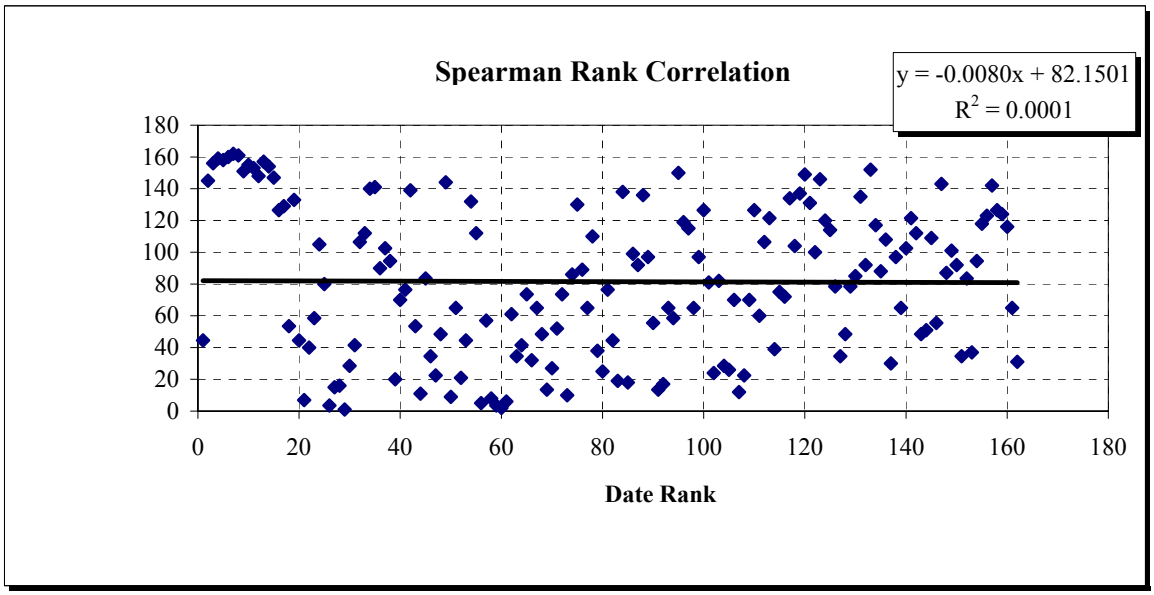


Table of Mean Period of Record Total Phosphorus-T (MG/L as P)

			95% Confidence Interval		
Year	**Median**	**Annual Ave**	**Lower**	**Upper**	**# Months**
1980	0.2100	0.2150	0.0907	0.3393	4
1981	0.2650	0.3717	0.2197	0.5237	8
1982	0.1840	0.1818	0.1262	0.2374	5
1983	0.0730	0.0708	0.0509	0.0907	10
1984	0.0522	0.0434	0.0135	0.0732	4
1985	0.1050	0.1050	#DIV/0!	#DIV/0!	1
1986	0.1055	0.1163	0.0960	0.1367	6
1987	0.0790	0.0783	0.0507	0.1060	6
1988	0.0670	0.0793	0.0433	0.1154	6
1989	0.0810	0.0870	0.0612	0.1128	5
1991	0.0220	0.0321	0.0080	0.0562	5
1992	0.0660	0.0635	0.0461	0.0809	6
1993	0.0728	0.0686	0.0562	0.0810	6
1994	0.0905	0.0857	0.0653	0.1061	7
1995	0.0623	0.0734	0.0463	0.1006	6
1996	0.0950	0.0843	0.0607	0.1079	7
1997	0.0875	0.1010	0.0794	0.1227	11
1998	0.0808	0.0786	0.0641	0.0931	12
1999	0.1143	0.1183	0.0971	0.1394	12
2000	0.0940	0.1028	0.0812	0.1243	12
2001	0.1000	0.1001	0.0855	0.1148	11
2002	0.1047	0.0994	0.0832	0.1157	12

Station Summary	
Station ID	**Samples collected**
BBS	25
SRN	170
Grand Total	195

Total Samples in Raw Data	
Total	200

Quality Assurance Codes Omitted	
Code	**Samples omitted**
#	2
Q	3
Grand Total	5

Water Quality Reports

ST JOHNS RIVER UPSTREAM OF LAKE HARNEY RIVER Station(s): (All)
Mean Total Suspended Solids (MG/L) 1981 to 2002
Storet Number 530

Summary

I. Descriptive Statistics

	Start	End
Dates	6/1/1981	12/1/2002
	Average	Std Dev
Mean	6.8603	4.1298
	lower	upper
95 % C.I.	6.1972	7.5234
	Period of Record	
1st Quartile	3.0000	
Median	5.0000	
2nd Quartile	9.0000	

	1998-2002	
Sample Size	Average	Std Dev
59.00	9.85	6.00
Median	9.0000	
1st Quartile	5.0000	
2nd Quartile	14.5000	

Testing Assumptions

I. Skewness

Statistic	1.7336

II. Kurtosis

Statistic	4.2768

III. KS Test - Normality

N	149
Critical Dmax	0.0731
Dmax	0.1563
Result	Reject Normality

Quality Assurance/Quality Control

QA for
ST JOHNS RIVER UPSTREAM OF LAKE HARNE

All J,Q,T,V,!, #, and Y were omitted
Remark Codes in this data set

I	4
K	4
T	8
U	18
(blank)	146
Grand Total	180

Seasonality (Oct-May vs June-Sept)

I. Descriptive Statistics

	Wet (J-S)	Dry (O-M)
N	50	99
Mean	6.9227	6.8288
SD	6.3297	5.4958
1st Quartile	2.3000	3.0000
Median	5.0000	5.0000
2nd Quartile	10.5000	9.0000

II. Parametric Statistical Test

Two Sample	t-statistic	P-value
t-test	0.9291	0.3544
Result	No Seasonality	

Trend Analysis

I. Least-Squares Regression

Slope	0.0008256	-21.5942547	Intercept
SE slope	0.0001889	6.5257435	SE intercept
r-square	0.1150015	5.44435611	SE y-est.
F value	19.101968	147	Sample N
SS regress	566.2017	4357.228977	

Slope Significance	P-value	2.33002E-05
Result	Slope greater than 0	

II. Decadal Rate Change Estimate

Rate (/10y)	3.0134085	MG/L/Decade

III. Pearson's r Correlation Coefficient

Pearsons r	0.3391
Result	Weak Correlation

IV. Least-Squares Rank Regression

(Non-parametric Trend Analysis +/-)

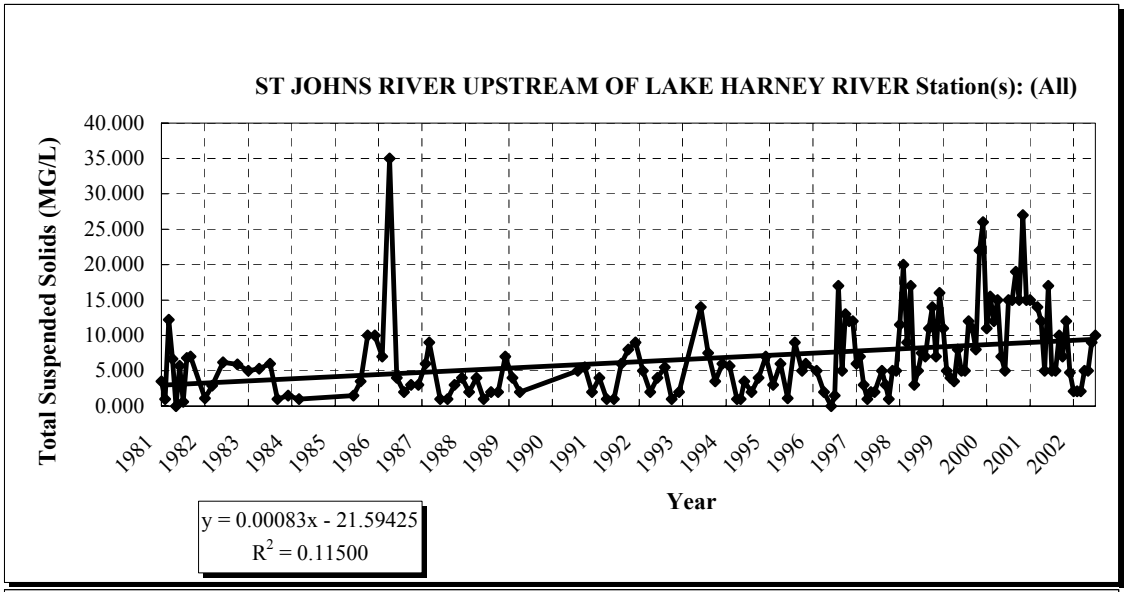
Slope	0.4147633	43.89275349	Intercept
SE slope	0.0748638	6.472577879	SE intercept
r-square	0.1727364	39.30526101	SE y-est.
F value	30.694265	147	Sample N
SS regress	47419.679	227100.8208	

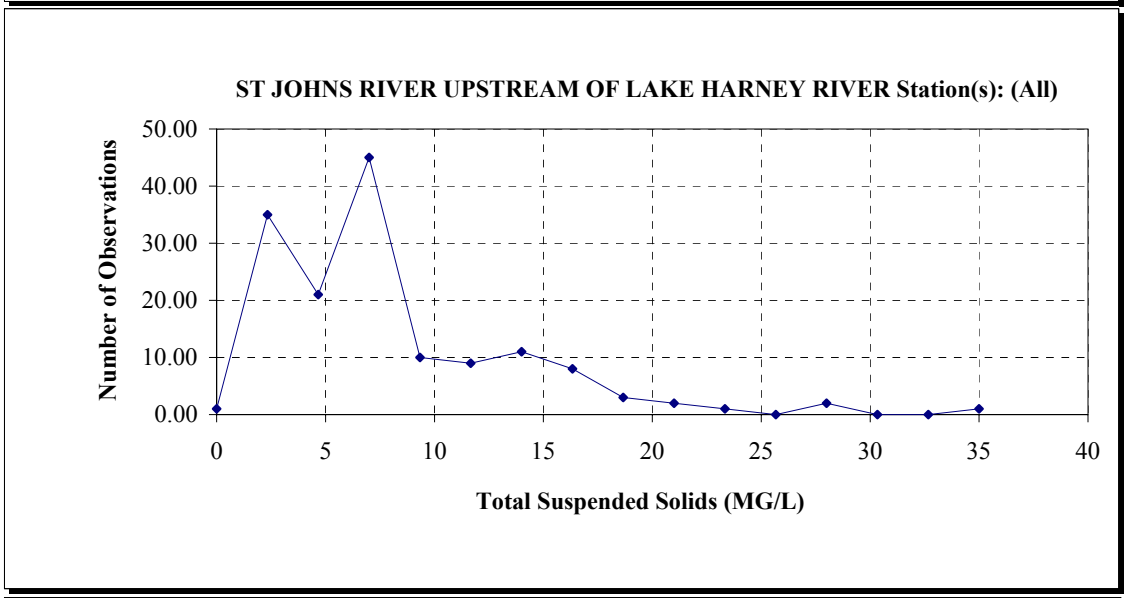
Slope Significance	P-value	1.35732E-07
Result	Slope different than 0	

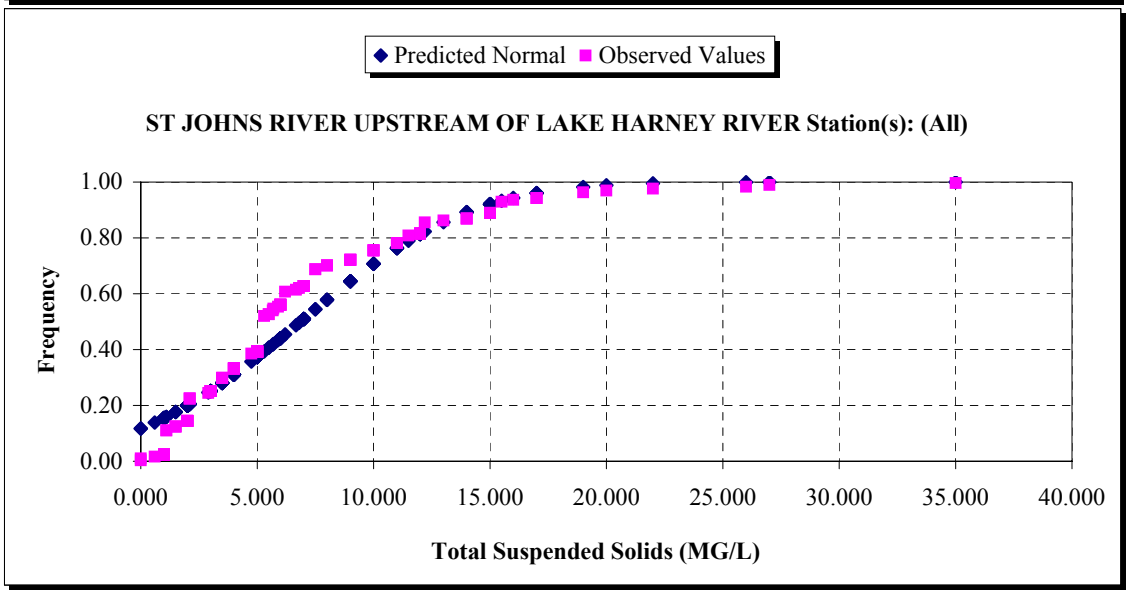
V. Rank Correlation

(Non-parametric Test of Association)

	rho	rho critical
Pearson (ranks)	0.4156	0.1352
Result:	Significant association	


ST JOHNS RIVER UPSTREAM OF LAKE HARNEY RIVER Station(s): (All)
Total Suspended Solids (MG/L)
40.000
35.000
30.000
25.000
20.000
15.000
10.000
5.000
0.000
1981
1982
1983
1984
1985
1986
1987
1988
1989
1990
1991
1992
1993
1994
1995
1996
1997
1998
1999
2000
2001
2002
Year
y = 0.00083x - 21.59425
R2 = 0.11500


ST JOHNS RIVER UPSTREAM OF LAKE HARNEY RIVER Station(s): (All)
Number of Observations
50.00
40.00
30.00
20.00
10.00
0.00
0
5
10
15
20
25
30
35
40
Total Suspended Solids (MG/L)


Predicted Normal
Observed Values
ST JOHNS RIVER UPSTREAM OF LAKE HARNEY RIVER Station(s): (All)
Frequency
1.00
0.80
0.60
0.40
0.20
0.00
0.000
5.000
10.000
15.000
20.000
25.000
30.000
35.000
40.000
Total Suspended Solids (MG/L)

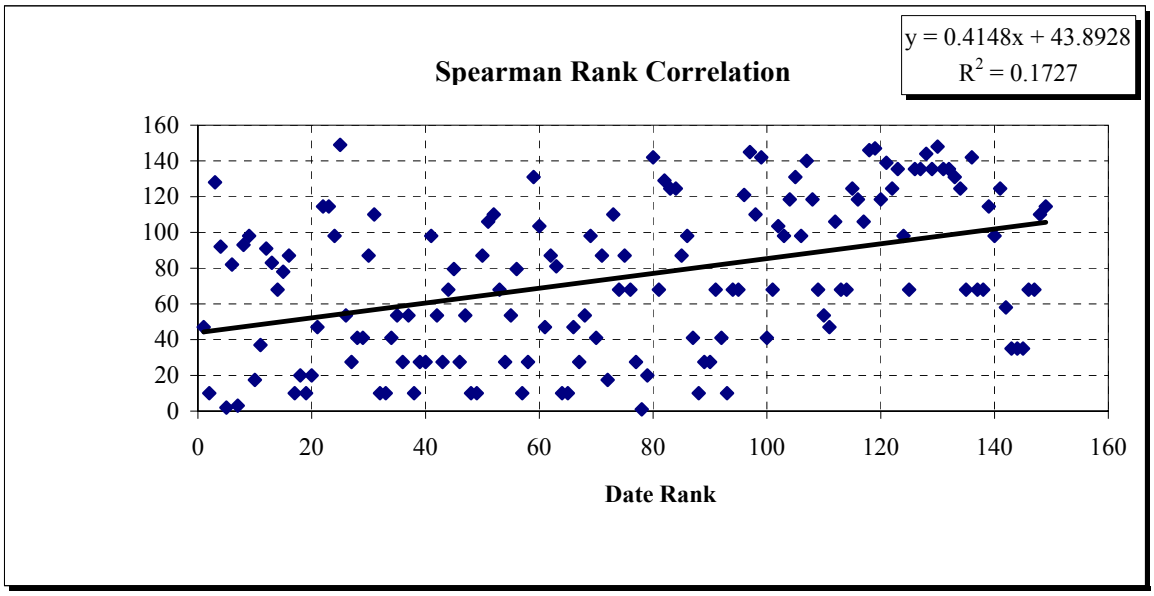


Table of Mean Period of Record Total Suspended Solids (MG/L)

			95% Confidence Interval		
Year	**Median**	**Annual Ave**	**Lower**	**Upper**	**# Months**
1981	3.5000	4.2390	1.0150	7.4630	7
1982	6.2000	4.8000	2.4768	7.1232	5
1983	5.6000	5.5500	5.0800	6.0200	4
1984	1.0000	1.1667	0.8400	1.4933	3
1985	1.5000	1.5000	#DIV/0!	#DIV/0!	1
1986	8.5000	11.5833	2.1347	21.0319	6
1987	3.0000	4.0000	1.6264	6.3736	6
1988	2.5000	2.5000	1.3971	3.6029	6
1989	2.0000	3.4000	1.4796	5.3204	5
1991	3.0000	3.0833	1.4747	4.6919	6
1992	5.5000	5.6667	3.6007	7.7326	6
1993	3.7500	5.6250	-0.1640	11.4140	4
1994	3.5000	4.0238	2.1712	5.8764	7
1995	3.5000	3.8500	2.0158	5.6842	6
1996	5.0000	4.0714	1.7839	6.3590	7
1997	6.0000	7.2727	4.0784	10.4670	11
1998	5.0000	7.6667	4.3757	10.9577	12
1999	7.0000	8.0417	5.7325	10.3508	12
2000	12.0000	13.2917	9.8874	16.6960	12
2001	15.0000	14.4545	10.8564	18.0527	11
2002	5.0000	6.1708	4.2420	8.0997	12

Station Summary	
Station ID	**Samples collected**
BBS	9
SRN	171
Grand Total	180

Total Samples in Raw Data	
Total	185

Quality Assurance Codes Omitted	
Code	**Samples omitted**
Q	4
UQ6	1
Grand Total	5

Water Quality Reports

ST JOHNS RIVER UPSTREAM OF LAKE HARNEY RIVER Station(s): (All)
Mean Turbidity, Laboratory Nephelometric (NTU) 1982 to 2002
Storet Number 82079

Summary

I. Descriptive Statistics

	Start	End
Dates	6/1/1982	12/1/2002
	Average	Std Dev
Mean	4.4765	0.8413
	lower	upper
95 % C.I.	4.3319	4.6211
	Period of Record	
1st Quartile	2.3167	
Median	3.4500	
2nd Quartile	6.2250	

	1998-2002	
Sample Size	Average	Std Dev
53.00	5.87	3.58
Median	5.7350	
1st Quartile	3.0900	
2nd Quartile	7.2000	

Testing Assumptions

I. Skewness

Statistic	1.7387

II. Kurtosis

Statistic	5.2852

III. KS Test - Normality

N	130
Critical Dmax	0.0782
Dmax	0.1342
Result	Reject Normality

Quality Assurance/Quality Control

QA for
ST JOHNS RIVER UPSTREAM OF LAKE HARNE

All J,Q,T,V,!, #, and Y were omitted
Remark Codes in this data set

	6
I	1
T	1
(blank)	154
Grand Total	162

Seasonality (Oct-May vs June-Sept)

I. Descriptive Statistics

	Wet (J-S)	Dry (O-M)
N	47	83
Mean	4.5343	4.4438
SD	2.6509	3.2365
1st Quartile	2.4000	2.1975
Median	3.9000	3.4000
2nd Quartile	6.4600	5.9000

II. Parametric Statistical Test

Two Sample	t-statistic	P-value
t-test	0.8635	0.3895
Result	No Seasonality	

Trend Analysis

I. Least-Squares Regression

Slope	0.0004454	-10.9649996	Intercept
SE slope	0.0001177	4.087444498	SE intercept
r-square	0.1006595	2.882394449	SE y-est.
F value	14.32651	128	Sample N
SS regress	119.02748	1063.449313	

Slope Significance	P-value	0.000235093
Result	Slope greater than 0	

II. Decadal Rate Change Estimate

Rate (/10y)	1.6255864	NTU/Decade

III. Pearson's r Correlation Coefficient

Pearsons r	0.3173
Result	Weak Correlation

IV. Least-Squares Rank Regression

(Non-parametric Trend Analysis +/-)

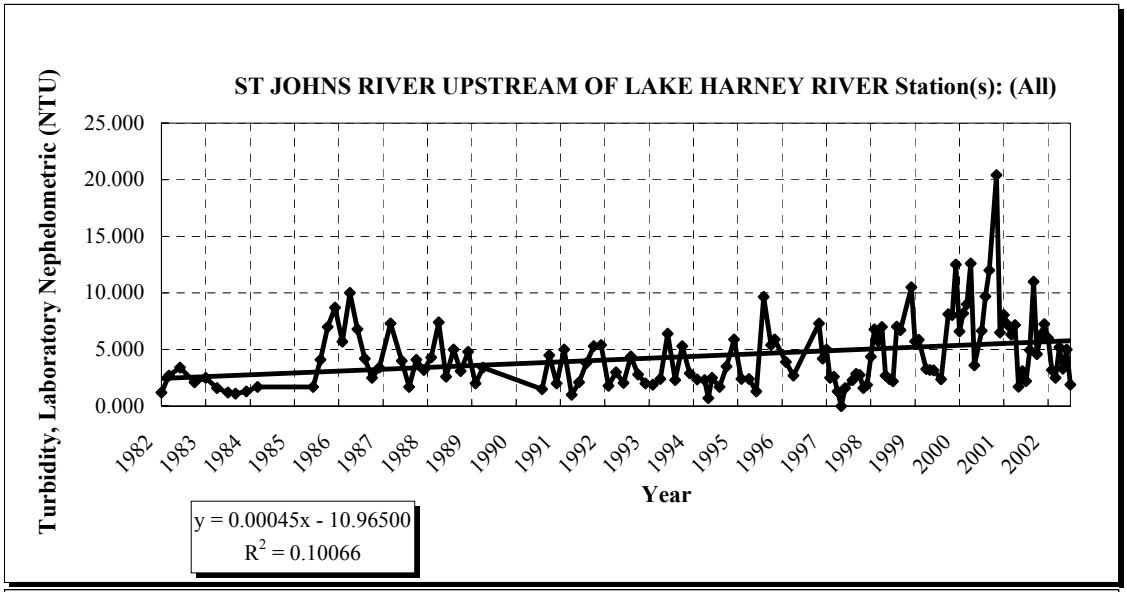
Slope	0.3395376	43.26028623	Intercept
SE slope	0.0831307	6.27540749	SE intercept
r-square	0.1153022	35.56912744	SE y-est.
F value	16.682167	128	Sample N
SS regress	21105.658	161940.8419	

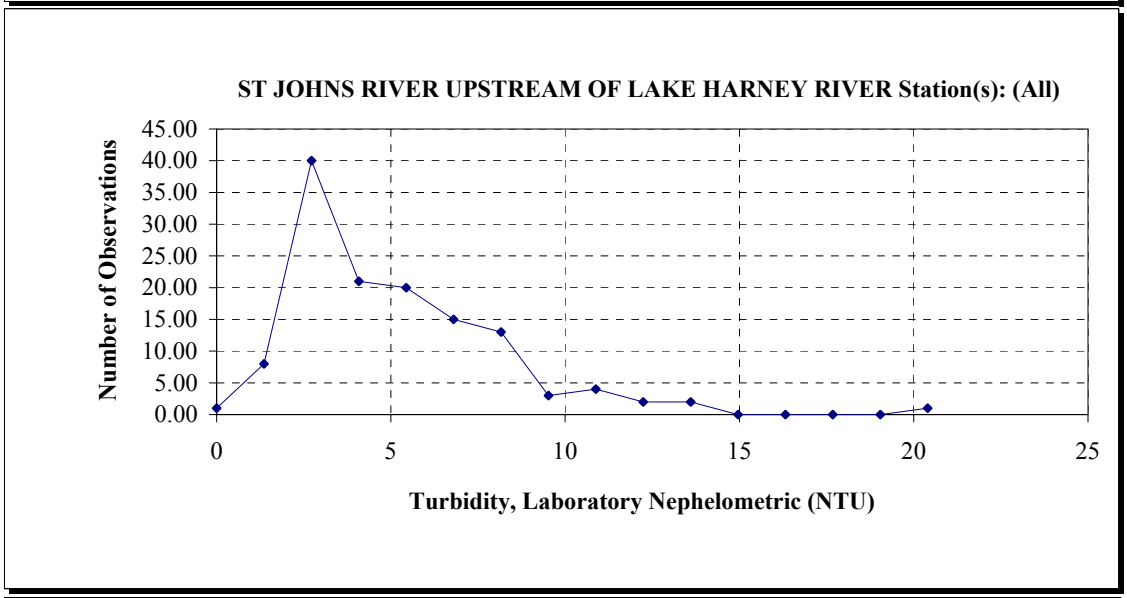
Slope Significance	P-value	7.74043E-05
Result	Slope different than 0	

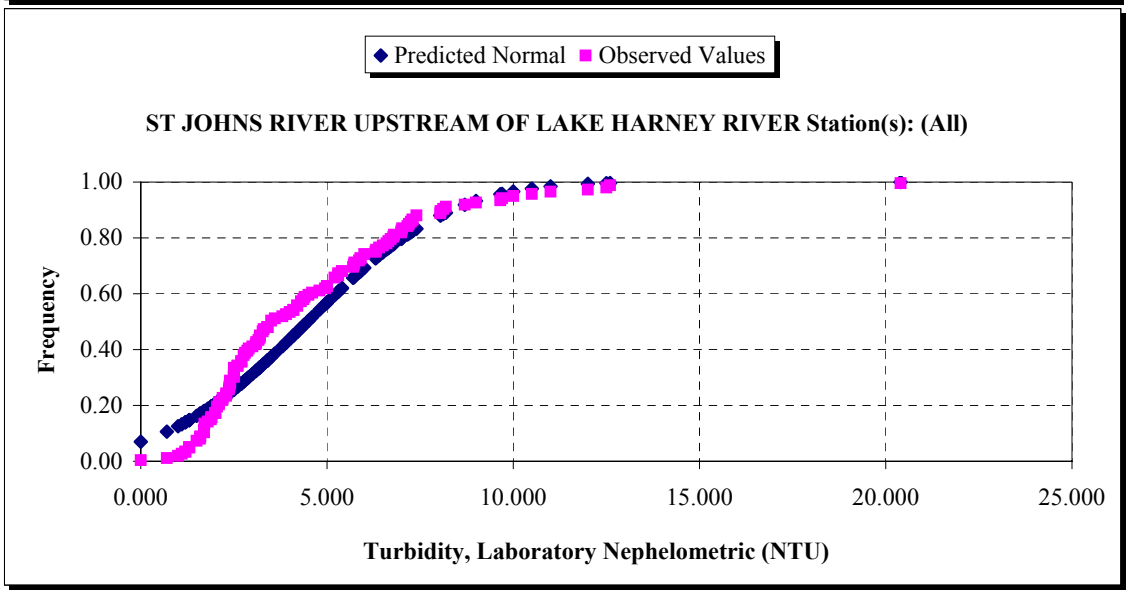
V. Rank Correlation

(Non-parametric Test of Association)

	rho	rho critical
Pearson (ranks)	0.3396	0.1448
Result:	Significant association	


ST JOHNS RIVER UPSTREAM OF LAKE HARNEY RIVER Station(s): (All)
Turbidity, Laboratory Nephelometric (NTU)
25.000
20.000
15.000
10.000
5.000
0.000
1982
1983
1984
1985
1986
1987
1988
1989
1990
1991
1992
1993
1994
1995
1996
1997
1998
1999
2000
2001
2002
Year
y = 0.00045x - 10.96500
R2 = 0.10066


ST JOHNS RIVER UPSTREAM OF LAKE HARNEY RIVER Station(s): (All)
Number of Observations
45.00
40.00
35.00
30.00
25.00
20.00
15.00
10.00
5.00
0.00
0
5
10
15
20
25
Turbidity, Laboratory Nephelometric (NTU)


Predicted Normal
Observed Values
ST JOHNS RIVER UPSTREAM OF LAKE HARNEY RIVER Station(s): (All)
Frequency
1.00
0.80
0.60
0.40
0.20
0.00
0.000
5.000
10.000
15.000
20.000
25.000
Turbidity, Laboratory Nephelometric (NTU)

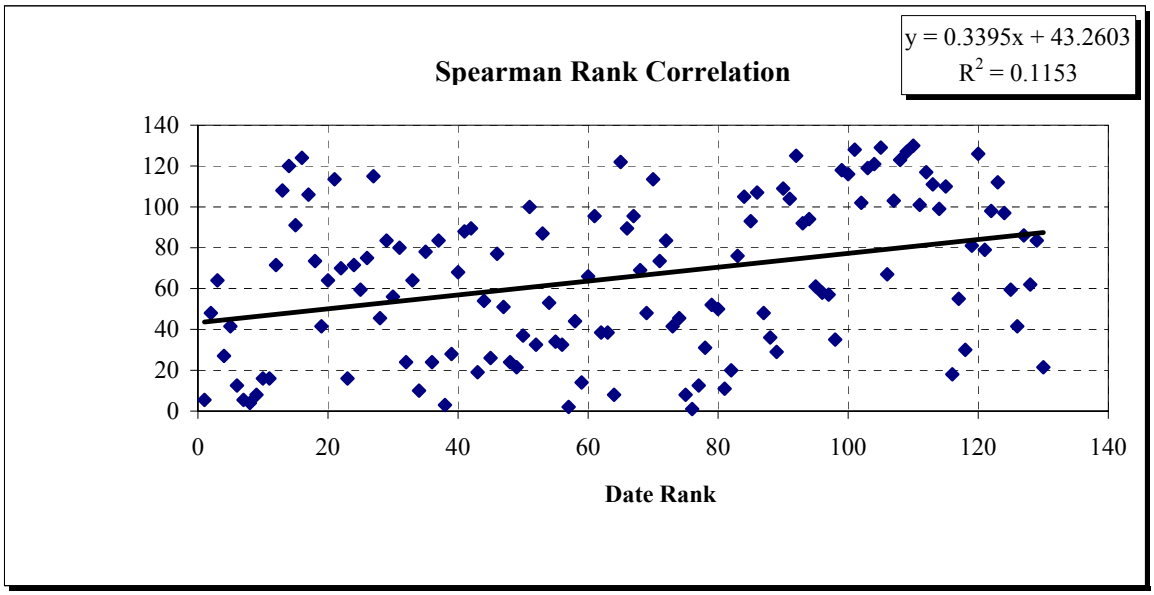


Table of Mean Period of Record Turbidity, Laboratory Nephelometric (NTU)

			95% Confidence Interval		
Year	**Median**	**Annual Ave**	**Lower**	**Upper**	**# Months**
1982	2.7000	2.4333	1.1615	3.7052	3
1983	1.8500	1.8500	1.2928	2.4072	4
1984	1.3000	1.3667	1.0210	1.7124	3
1985	1.7000	1.7000	#DIV/0!	#DIV/0!	1
1986	6.9000	7.0500	5.3710	8.7290	6
1987	4.0000	4.2800	2.6909	5.8691	5
1988	3.6500	3.8833	2.3044	5.4622	6
1989	3.4000	3.6600	2.5659	4.7541	5
1991	2.0500	2.6833	1.3584	4.0082	6
1992	3.4000	3.5583	2.3104	4.8063	6
1993	2.6000	3.3167	1.9066	4.7268	6
1994	2.3667	2.6238	1.6103	3.6373	7
1995	2.4000	2.8667	1.5348	4.1985	6
1996	5.4000	5.5100	3.1996	7.8204	5
1997	2.5500	3.0625	1.4446	4.6804	8
1998	2.7300	3.5446	2.4532	4.6359	12
1999	5.7900	5.6794	3.9330	7.4257	8
2000	8.0800	7.7680	5.7369	9.7991	10
2001	7.1600	7.6664	4.5665	10.7662	11
2002	4.9750	5.1000	3.7159	6.4841	12

Station Summary	
Station ID	**Samples collected**
SRN	162
Grand Total	162

Total Samples in Raw Data	
Total	169

Quality Assurance Codes Omitted	
Code	**Samples omitted**
Q1	6
Q5	1
Grand Total	7

Water Quality Reports

ECONLOCKHATCHEE RIVER STREAM Station(s): (All)
Mean Dissolved Oxygen (MG/L) 1980 to 2002
Storet Number 300

Summary

I. Descriptive Statistics

	Start	End
Dates	4/1/1980	12/1/2002
	Average	Std Dev
Mean	6.4449	0.8767
	lower	upper
95 % C.I.	6.2986	6.5912
	Period of Record	
1st Quartile	5.4000	
Median	6.3800	
2nd Quartile	7.5175	

	1998-2002	
Sample Size	Average	Std Dev
56.00	6.51	1.68
Median	6.3350	
1st Quartile	5.3869	
2nd Quartile	7.5525	

Testing Assumptions

I. Skewness

Statistic	0.3394

II. Kurtosis

Statistic	0.7965

III. KS Test - Normality

N	138
Critical Dmax	0.0759
Dmax	0.0437
Result	Can't reject Normality

Quality Assurance/Quality Control

QA for
ECONLOCKHATCHEE RIVER STR Dissolved Oxy

All J,Q,T,V,!, #, and Y were omitted
Remark Codes in this data set

	17
(blank)	144
Grand Total	161

Seasonality (Oct-May vs June-Sept)

I. Descriptive Statistics

	Wet (J-S)	Dry (O-M)
N	47	91
Mean	5.5106	6.9274
SD	1.3989	1.3126
1st Quartile	4.8150	6.3150
Median	5.4000	6.9000
2nd Quartile	5.9100	7.7450

II. Parametric Statistical Test

Two Sample	t-statistic	P-value
t-test	0.0000	1.0000
Result	No Seasonality	

Trend Analysis

I. Least-Squares Regression

Slope	0.0001095	2.639643085	Intercept
SE slope	6.003E-05	2.090475663	SE intercept
r-square	0.0238691	1.485121193	SE y-est.
F value	3.3255769	136	Sample N
SS regress	7.3348423	299.9595543	

Slope Significance	P-value	0.070405741
Result	Slope not greater than 0	

II. Decadal Rate Change Estimate

Rate (/10y)	0.3995396	MG/L/Decade

III. Pearson's r Correlation Coefficient

Pearsons r	0.1545
Result	Weak Correlation

IV. Least-Squares Rank Regression

(Non-parametric Trend Analysis +/-)

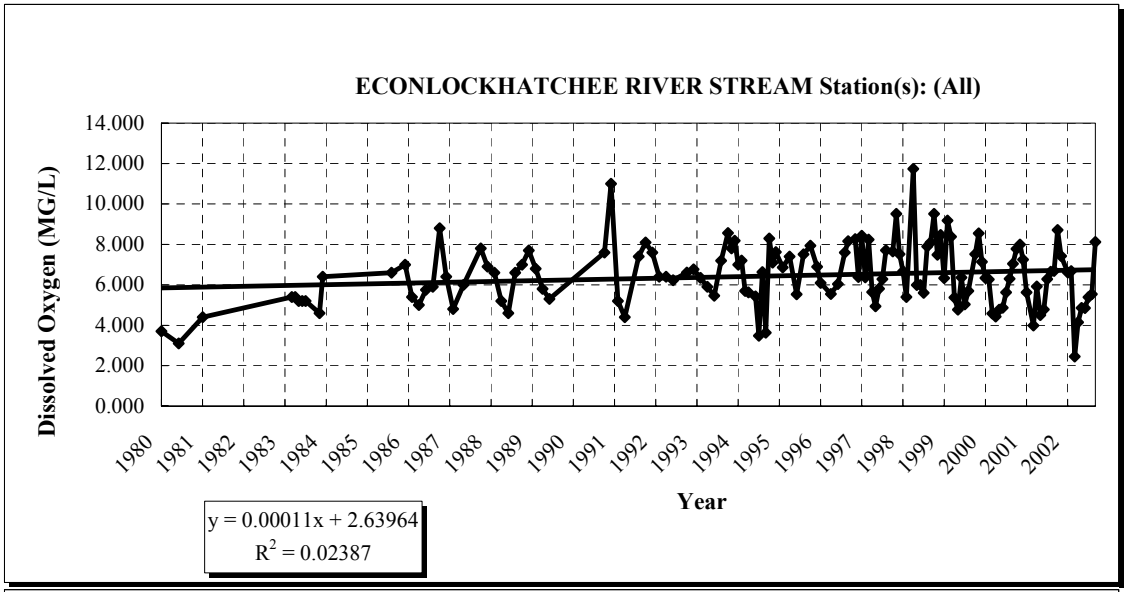
Slope	0.0648875	64.99032053	Intercept
SE slope	0.0855618	6.854119081	SE intercept
r-square	0.004211	40.04023243	SE y-est.
F value	0.5751244	136	Sample N
SS regress	922.05101	218037.949	

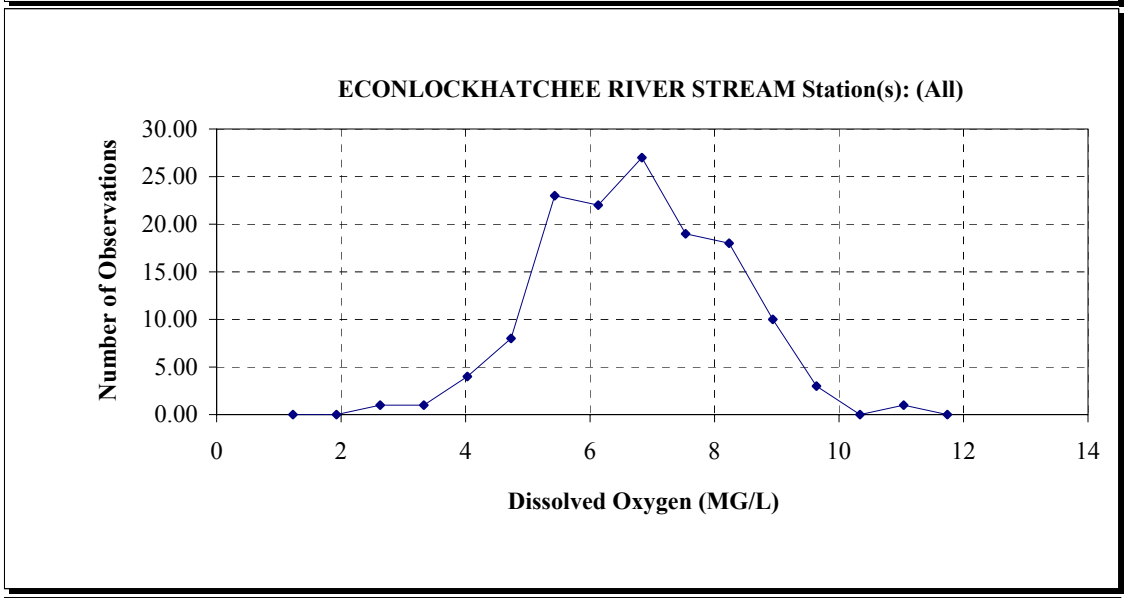
Slope Significance	P-value	0.449541996
Result	Slope equivalent to 0	

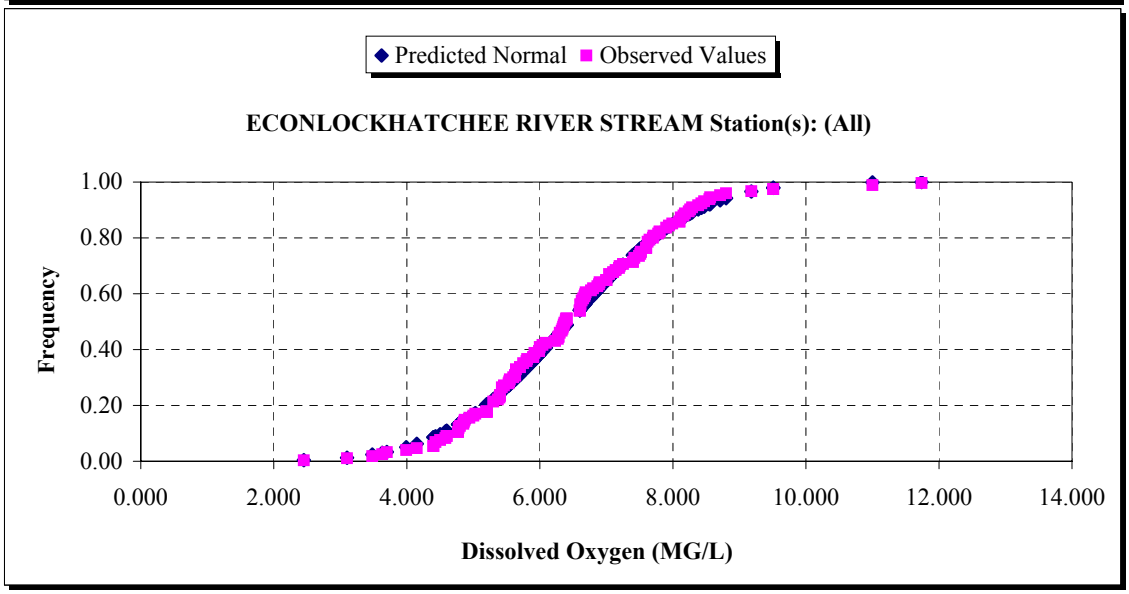
V. Rank Correlation

(Non-parametric Test of Association)

	rho	rho critical
Pearson (ranks)	0.0649	0.1405
Result:	No significant association	


ECONLOCKHATCHEE RIVER STREAM Station(s): (All)
Dissolved Oxygen (MG/L)
14.000
12.000
10.000
8.000
6.000
4.000
2.000
0.000
1980
1981
1982
1983
1984
1985
1986
1987
1988
1989
1990
1991
1992
1993
1994
1995
1996
1997
1998
1999
2000
2001
2002
Year
y = 0.00011x + 2.63964
R2 = 0.02387


ECONLOCKHATCHEE RIVER STREAM Station(s): (All)
Number of Observations
30.00
25.00
20.00
15.00
10.00
5.00
0.00
0
2
4
6
8
10
12
14
Dissolved Oxygen (MG/L)


Predicted Normal
Observed Values
ECONLOCKHATCHEE RIVER STREAM Station(s): (All)
Frequency
1.00
0.80
0.60
0.40
0.20
0.00
0.000
2.000
4.000
6.000
8.000
10.000
12.000
14.000
Dissolved Oxygen (MG/L)

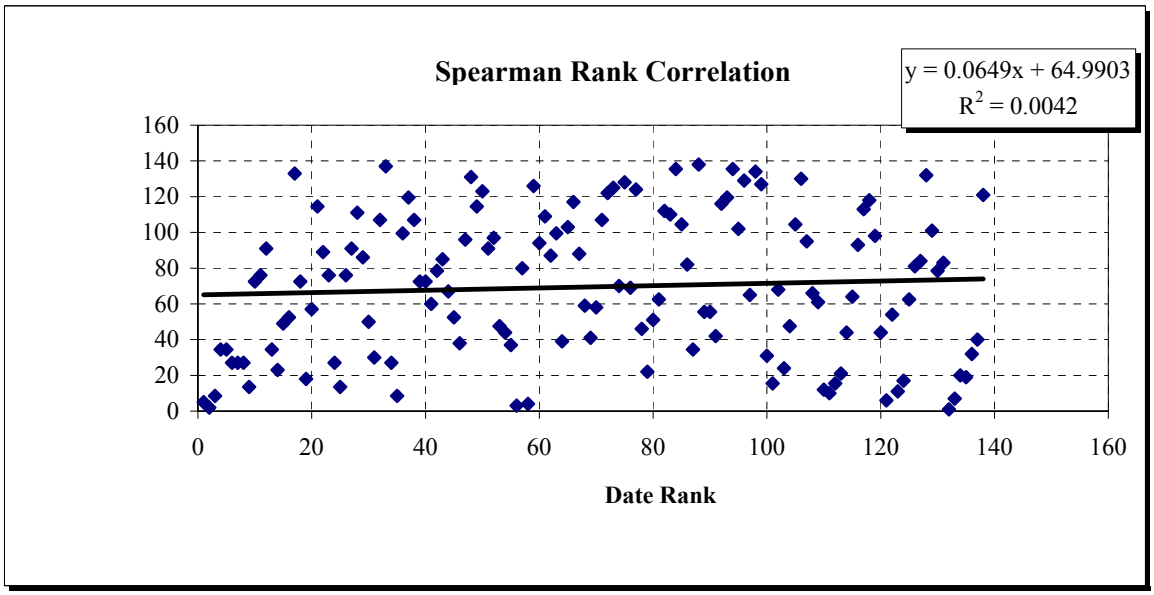


Table of Mean Period of Record Dissolved Oxygen (MG/L)

			95% Confidence Interval		
Year	**Median**	**Annual Ave**	**Lower**	**Upper**	**# Months**
1980	3.4000	3.4000	2.8120	3.9880	2
1981	4.4000	4.4000	#DIV/0!	#DIV/0!	1
1983	5.2000	5.2800	5.1840	5.3760	5
1984	5.5000	5.5000	3.7360	7.2640	2
1985	6.6000	6.6000	#DIV/0!	#DIV/0!	1
1986	5.7500	5.8100	5.1523	6.4677	5
1987	6.2000	6.5000	4.8563	8.1437	4
1988	6.6000	6.2833	5.3442	7.2225	6
1989	6.8000	6.5200	5.6761	7.3639	5
1991	7.4000	7.1200	4.8661	9.3739	5
1992	6.4000	6.9460	6.2038	7.6882	5
1993	6.4800	6.3800	5.8817	6.8783	6
1994	6.6300	6.2945	5.2891	7.3000	11
1995	7.4000	7.1879	6.5527	7.8230	7
1996	6.8900	6.8957	6.1320	7.6595	7
1997	6.3800	6.8070	6.0313	7.5827	10
1998	7.5200	7.4609	6.3426	8.5792	11
1999	6.3600	6.9627	5.9494	7.9760	11
2000	6.2850	6.1200	5.3821	6.8579	12
2001	6.2800	6.1327	5.3533	6.9122	11
2002	5.5400	5.8891	4.8031	6.9751	11

Station Summary	
Station ID	**Samples collected**
BEC	10
ECH	142
ER-420	3
ER-SJR	3
ER-ULER	3
Grand Total	161

Total Samples in Raw Data	
Total	166

Quality Assurance Codes Omitted	
Code	**Samples omitted**
J	5
Grand Total	5

Water Quality Reports

ECONLOCKHATCHEE RIVER STREAM Station(s): (All)
Mean Total Nitrogen - calculated (MG/L as N) 1985 to 2002
Storet Number 600

Summary

I. Descriptive Statistics

	Start	End
Dates	11/1/1985	12/1/2002
	Average	Std Dev
Mean	1.2064	2.5110
	lower	upper
95 % C.I.	0.7608	1.6520
	Period of Record	
1st Quartile	0.9268	
Median	1.0497	
2nd Quartile	1.2432	

1998-2002

Sample Size	Average	Std Dev
54.00	1.10	0.28
Median	1.0510	
1st Quartile	0.9235	
2nd Quartile	1.1300	

Testing Assumptions

I. Skewness

Statistic	6.5906

II. Kurtosis

Statistic	53.5895

III. KS Test - Normality

N	122
Critical Dmax	0.0808
Dmax	0.2848
Result	Reject Normality

Quality Assurance/Quality Control

QA for
ECONLOCKHATCHEE RIVER STR Total Nitrogen

All J,Q,T,V,!, #, and Y were omitted
Remark Codes in this data set

	12
I	2
T	1
T	1
(blank)	129
Grand Total	145

Seasonality (Oct-May vs June-Sept)

I. Descriptive Statistics

	Wet (J-S)	Dry (O-M)
N	40	82
Mean	1.2211	1.1992
SD	0.5807	0.9150
1st Quartile	0.9415	0.9193
Median	1.0965	1.0060
2nd Quartile	1.3045	1.2040

II. Parametric Statistical Test

Two Sample	t-statistic	P-value
t-test	0.8728	0.3845
Result	No Seasonality	

Trend Analysis

I. Least-Squares Regression

Slope	-0.0001488	6.425957375	Intercept
SE slope	3.92E-05	1.376731294	SE intercept
r-square	0.1072169	0.77619825	SE y-est.
F value	14.411151	120	Sample N
SS regress	8.6824838	72.29804682	

Slope Significance	P-value	0.000231878
Result	Slope greater than 0	

II. Decadal Rate Change Estimate

Rate (/10y)	-0.5431266	MG/L as N/Decade

III. Pearson's r Correlation Coefficient

Pearsons r	-0.3274
Result	Weak Correlation

IV. Least-Squares Rank Regression

(Non-parametric Trend Analysis +/-)

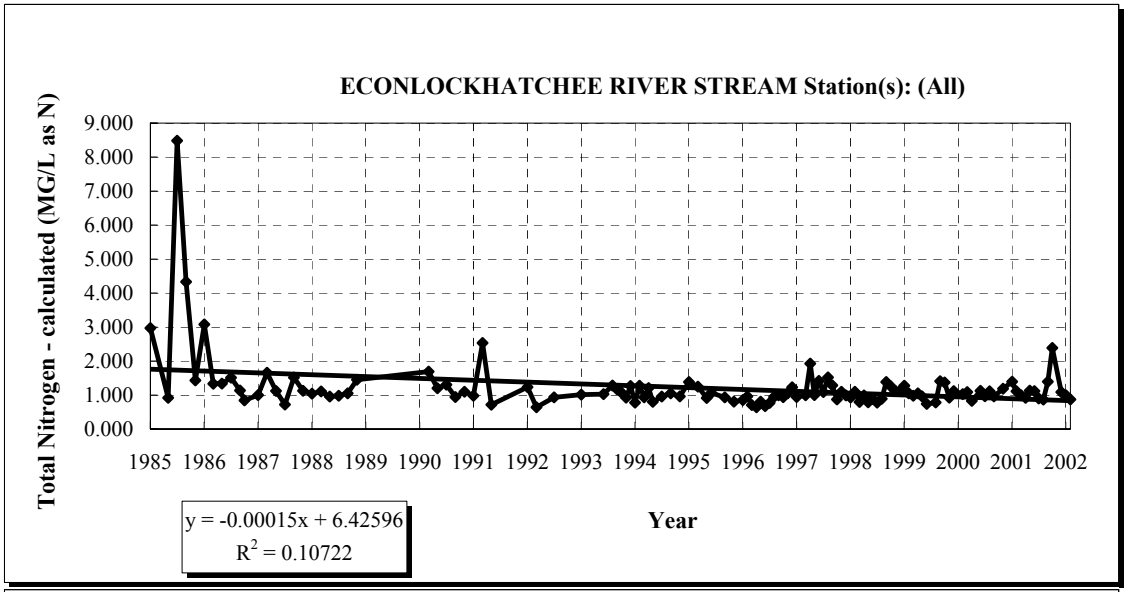
Slope	-0.1776975	72.42839724	Intercept
SE slope	0.0898343	6.366518865	SE intercept
r-square	0.0315764	34.94431976	SE y-est.
F value	3.9127185	120	Sample N
SS regress	4777.842	146532.658	

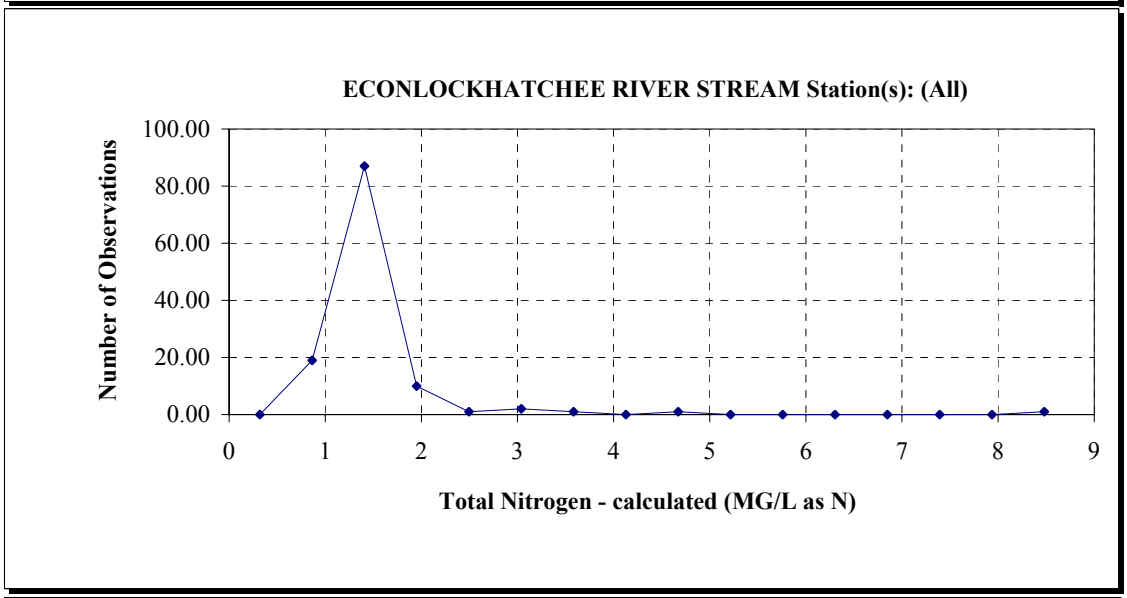
Slope Significance	P-value	0.050213455
Result	Slope equivalent to 0	

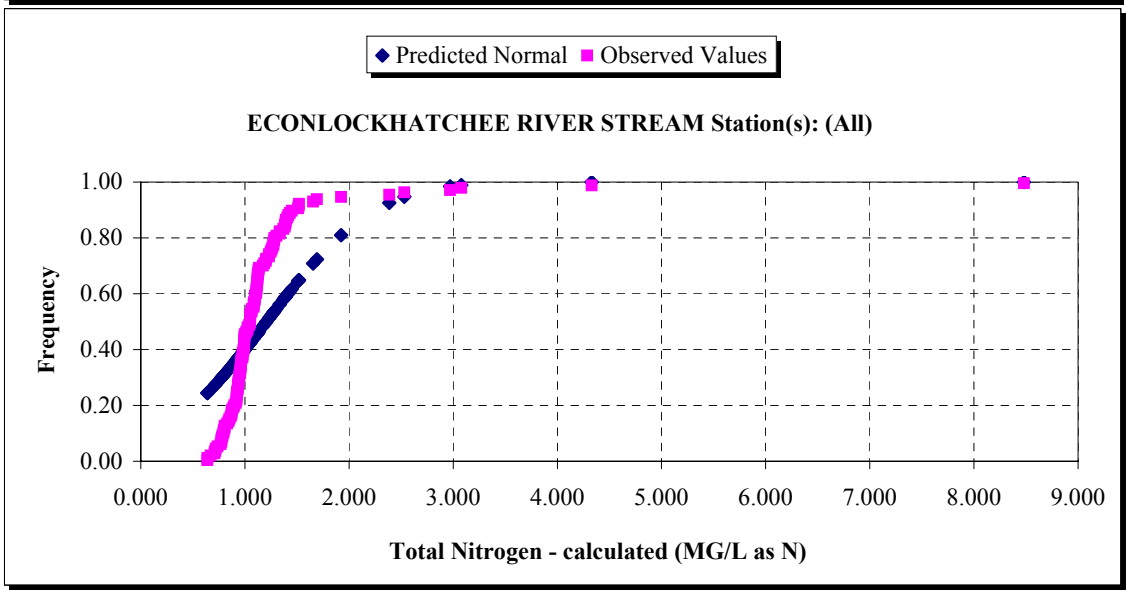
V. Rank Correlation

(Non-parametric Test of Association)

	rho	rho critical
Pearson (ranks)	-0.1777	0.1495
Result:	Significant association	


ECONLOCKHATCHEE RIVER STREAM Station(s): (All)
Total Nitrogen - calculated (MG/L as N)
9.000
8.000
7.000
6.000
5.000
4.000
3.000
2.000
1.000
0.000
1985 1986 1987 1988 1989 1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002
Year
y = -0.00015x + 6.42596
R2 = 0.10722


ECONLOCKHATCHEE RIVER STREAM Station(s): (All)
Number of Observations
100.00
80.00
60.00
40.00
20.00
0.00
0 1 2 3 4 5 6 7 8 9
Total Nitrogen - calculated (MG/L as N)


Predicted Normal
Observed Values
ECONLOCKHATCHEE RIVER STREAM Station(s): (All)
Frequency
1.00
0.80
0.60
0.40
0.20
0.00
0.000 1.000 2.000 3.000 4.000 5.000 6.000 7.000 8.000 9.000
Total Nitrogen - calculated (MG/L as N)

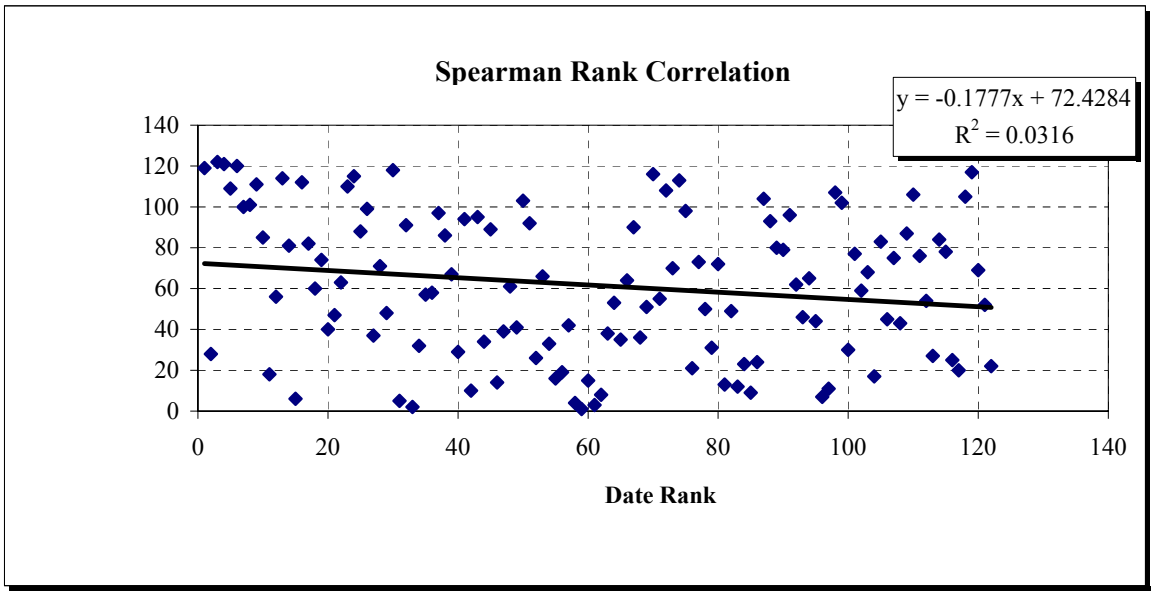


Table of Mean Period of Record Total Nitrogen - calculated (MG/L as N)

			95% Confidence Interval		
Year	**Median**	**Annual Ave**	**Lower**	**Upper**	**# Months**
1985	2.9700	2.9700	#DIV/0!	#DIV/0!	1
1986	3.0770	3.6478	1.0003	6.2953	5
1987	1.2350	1.1930	0.9960	1.3900	6
1988	1.1230	1.1963	0.9249	1.4677	6
1989	1.0500	1.1082	0.9327	1.2837	5
1991	1.1485	1.2024	0.9828	1.4220	6
1992	1.2320	1.4923	0.4331	2.5516	3
1993	0.9320	0.8620	0.6406	1.0834	3
1994	1.1195	1.0976	0.9695	1.2258	8
1995	0.9580	1.0401	0.8954	1.1849	7
1996	0.9330	0.9681	0.8586	1.0777	7
1997	0.9370	0.8810	0.7742	0.9878	11
1998	1.0915	1.1831	1.0107	1.3555	12
1999	1.0185	1.0263	0.9084	1.1442	12
2000	1.0020	1.0352	0.8994	1.1710	10
2001	1.1110	1.0858	0.9818	1.1898	9
2002	0.9940	1.1502	0.8916	1.4089	11

Station Summary	
Station ID	**Samples collected**
ECH	136
ER-420	3
ER-SJR	3
ER-ULER	3
Grand Total	145

Total Samples in Raw Data	
Total	161

Quality Assurance Codes Omitted	
Code	**Samples omitted**
Q8	1
J	1
J	1
Q	9
Q1	4
Grand Total	16

Water Quality Reports

ECONLOCKHATCHEE RIVER STREAM Station(s): (All)
Mean Total Organic Carbon (MG/L as C) 1988 to 2002
Storet Number 680

Summary

I. Descriptive Statistics

	Start	End
Dates	3/1/1988	12/1/2002
	Average	Std Dev
Mean	16.8406	8.5216
	lower	upper
95 % C.I.	15.3223	18.3590
	Period of Record	
1st Quartile	10.8100	
Median	15.8500	
2nd Quartile	21.4750	

1998-2002

Sample Size	Average	Std Dev
60.00	16.95	7.59
Median	15.3675	
1st Quartile	10.5888	
2nd Quartile	23.1800	

Testing Assumptions

I. Skewness

Statistic	0.6929

II. Kurtosis

Statistic	-0.3141

III. KS Test - Normality

N	121
Critical Dmax	0.0811
Dmax	0.1116
Result	Reject Normality

Quality Assurance/Quality Control

QA for
ECONLOCKHATCHEE RIVER STR Total Organic (

All J,Q,T,V,!, #, and Y were omitted
Remark Codes in this data set

	17
(blank)	128
Grand Total	145

Seasonality (Oct-May vs June-Sept)

I. Descriptive Statistics

	Wet (J-S)	Dry (O-M)
N	41	80
Mean	19.4307	15.5132
SD	7.5926	6.1329
1st Quartile	12.9300	10.1600
Median	19.1100	14.4100
2nd Quartile	24.4000	18.7313

II. Parametric Statistical Test

Two Sample	t-statistic	P-value
t-test	0.0056	0.9955
Result	No Seasonality	

Trend Analysis

I. Least-Squares Regression

Slope	0.0001332	12.10871385	Intercept
SE slope	0.0004446	15.80127224	SE intercept
r-square	0.0007542	6.914275954	SE y-est.
F value	0.0898206	119	Sample N
SS regress	4.2940719	5689.058224	

Slope Significance	P-value	0.764928215
Result	Slope not greater than 0	

II. Decadal Rate Change Estimate

Rate (/10y)	0.4863256	MG/L as C/Decade

III. Pearson's r Correlation Coefficient

Pearsons r	0.0275
Result	Weak Correlation

IV. Least-Squares Rank Regression

(Non-parametric Trend Analysis +/-)

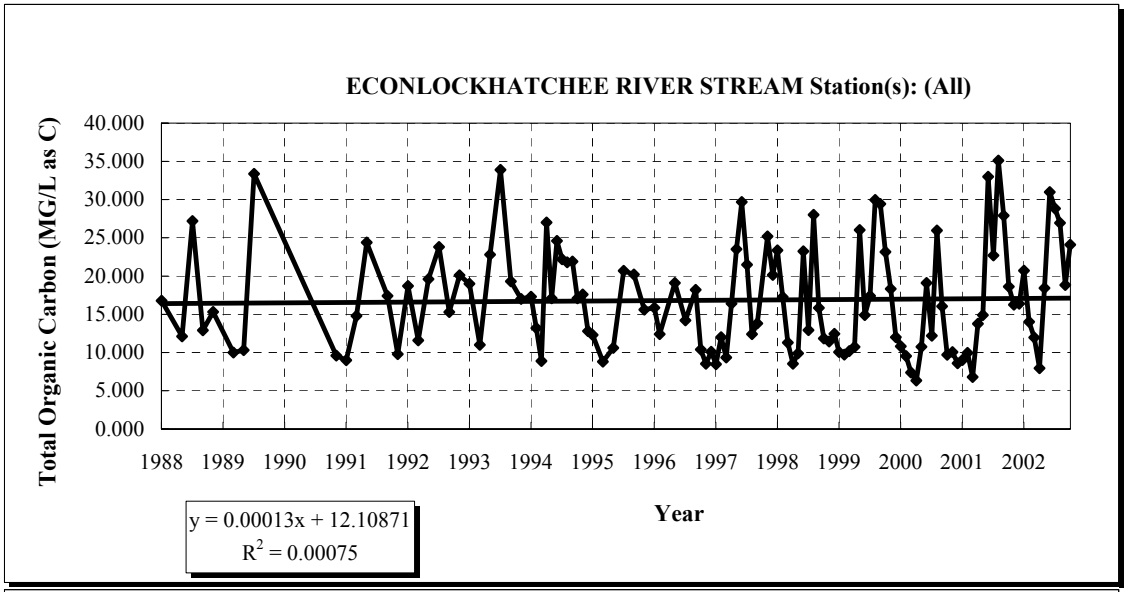
Slope	0.0031703	60.80661157	Intercept
SE slope	0.0916691	6.443625518	SE intercept
r-square	1.005E-05	35.22049588	SE y-est.
F value	0.0011961	119	Sample N
SS regress	1.4837014	147617.5163	

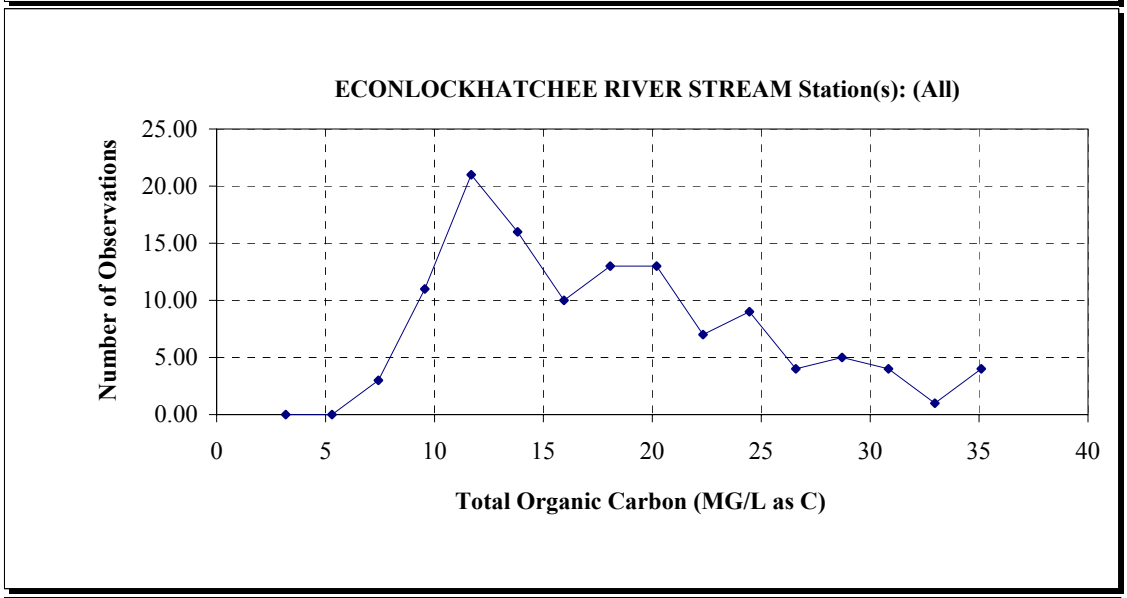
Slope Significance	P-value	0.972469241
Result	Slope equivalent to 0	

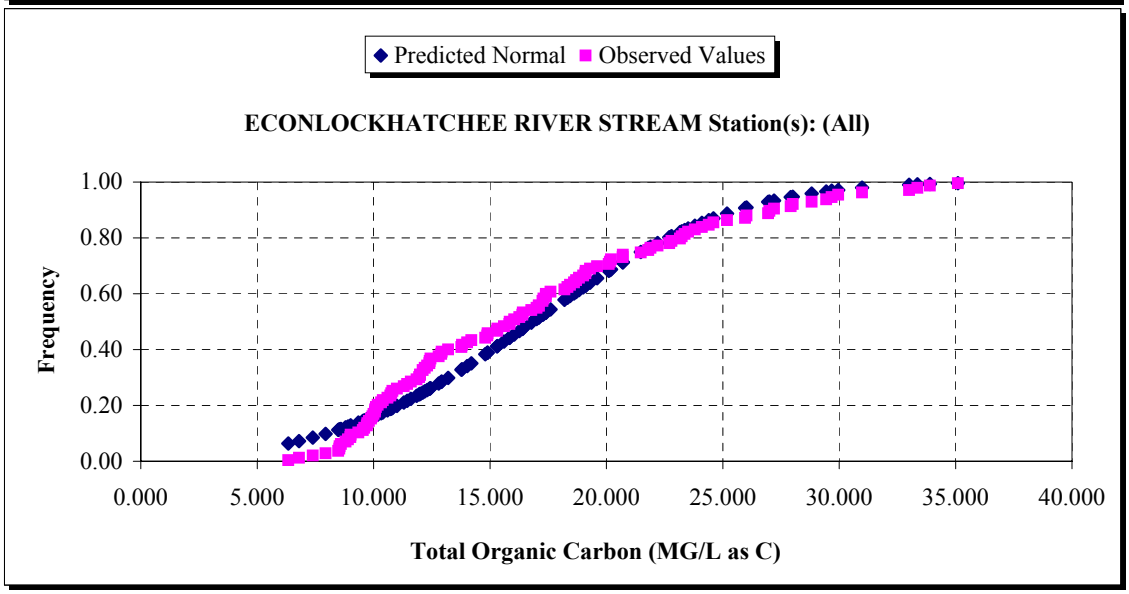
V. Rank Correlation

(Non-parametric Test of Association)

	rho	rho critical
Pearson (ranks)	0.0032	0.1502
Result:	No significant association	


ECONLOCKHATCHEE RIVER STREAM Station(s): (All)
Total Organic Carbon (MG/L as C)
40.000
35.000
30.000
25.000
20.000
15.000
10.000
5.000
0.000
1988 1989 1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002
Year
y = 0.00013x + 12.10871
R2 = 0.00075


ECONLOCKHATCHEE RIVER STREAM Station(s): (All)
Number of Observations
25.00
20.00
15.00
10.00
5.00
0.00
0 5 10 15 20 25 30 35 40
Total Organic Carbon (MG/L as C)


Predicted Normal
Observed Values
ECONLOCKHATCHEE RIVER STREAM Station(s): (All)
Frequency
1.00
0.80
0.60
0.40
0.20
0.00
0.000 5.000 10.000 15.000 20.000 25.000 30.000 35.000 40.000
Total Organic Carbon (MG/L as C)

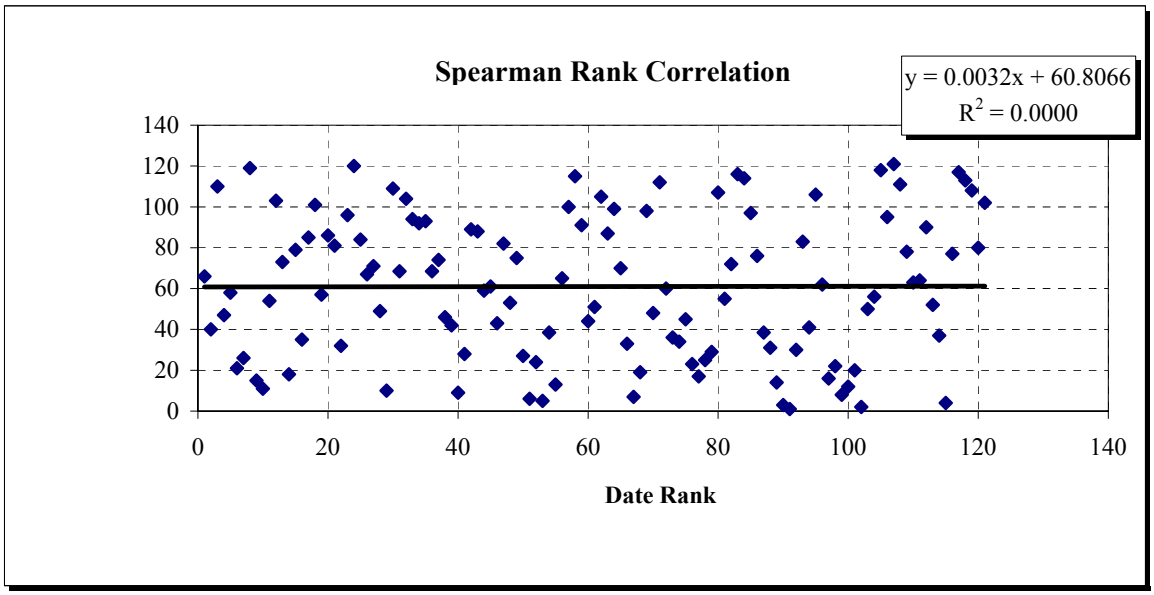


Table of Mean Period of Record Total Organic Carbon (MG/L as C)

			95% Confidence Interval		
Year	**Median**	**Annual Ave**	**Lower**	**Upper**	**# Months**
1988	14.8450	17.2500	10.4492	24.0508	4
1989	12.8200	17.2500	6.4577	28.0423	4
1991	14.8000	15.0400	9.5083	20.5717	5
1992	17.0000	16.4667	12.2619	20.6714	6
1993	19.7000	21.0167	15.0573	26.9760	6
1994	17.3000	18.9182	15.8388	21.9976	11
1995	12.8000	14.7143	11.1920	18.2366	7
1996	15.6000	15.1071	12.8316	17.3826	7
1997	12.4100	15.0677	10.9343	19.2012	11
1998	16.5475	17.2954	13.5754	21.0154	12
1999	13.6700	17.1221	12.6578	21.5864	12
2000	11.4050	13.1825	9.9791	16.3859	12
2001	14.3350	17.5354	11.9152	23.1556	12
2002	18.6325	19.6162	15.6561	23.5764	12

Station Summary	
Station ID	**Samples collected**
ECH	136
ER-420	3
ER-SJR	3
ER-ULER	3
Grand Total	145

Total Samples in Raw Data	
Total	147

Quality Assurance Codes Omitted	
Code	**Samples omitted**
Q	2
Grand Total	2

Water Quality Reports

ECONLOCKHATCHEE RIVER STREAM Station(s): (All)
Mean Total Phosphorus-T (MG/L as P) 1980 to 2002
Storet Number 665

Summary

I. Descriptive Statistics

	Start	End
Dates	4/1/1980	12/1/2002
	Average	Std Dev
Mean	0.1198	0.2258
	lower	upper
95 % C.I.	0.0828	0.1568
	Period of Record	
1st Quartile	0.0835	
Median	0.0990	
2nd Quartile	0.1238	

1998-2002		
Sample Size	Average	Std Dev
59.00	0.10	0.03
Median	0.0890	
1st Quartile	0.0765	
2nd Quartile	0.1175	

Testing Assumptions

I. Skewness

Statistic	4.9828

II. Kurtosis

Statistic	30.2488

III. KS Test - Normality

N	143
Critical Dmax	0.0746
Dmax	0.2489
Result	Reject Normality

Quality Assurance/Quality Control

QA for
ECONLOCKHATCHEE RIVER STR Total Phospho

All J,Q,T,V,!, #, and Y were omitted
Remark Codes in this data set

	17
(blank)	149
Grand Total	166

Seasonality (Oct-May vs June-Sept)

I. Descriptive Statistics

	Wet (J-S)	Dry (O-M)
N	49	94
Mean	0.1282	0.1154
SD	0.0431	0.1037
1st Quartile	0.1010	0.0780
Median	0.1180	0.0905
2nd Quartile	0.1380	0.1108

II. Parametric Statistical Test

Two Sample	t-statistic	P-value
t-test	0.3000	0.7646
Result	No Seasonality	

Trend Analysis

I. Least-Squares Regression

Slope	-2.004E-05	0.81721699	Intercept
SE slope	3.136E-06	0.109298957	SE intercept
r-square	0.2246806	0.077565865	SE y-est.
F value	40.860527	141	Sample N
SS regress	0.2458359	0.848321334	

Slope Significance	P-value	2.23483E-09
Result	Slope greater than 0	

II. Decadal Rate Change Estimate

Rate (/10y)	-0.07316	MG/L as P/Decade

III. Pearson's r Correlation Coefficient

Pearsons r	-0.4740
Result	Weak Correlation

IV. Least-Squares Rank Regression

(Non-parametric Trend Analysis +/-)

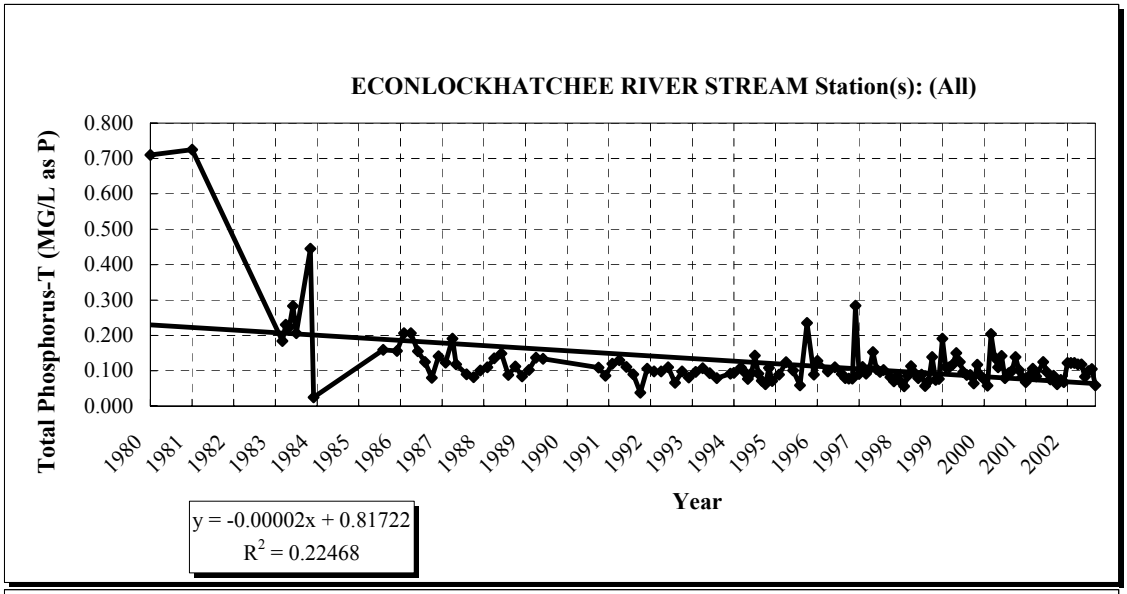
Slope	-0.3227535	95.2382547	Intercept
SE slope	0.0796978	6.614433347	SE intercept
r-square	0.1041944	39.34131653	SE y-est.
F value	16.400227	141	Sample N
SS regress	25383.275	218231.2253	

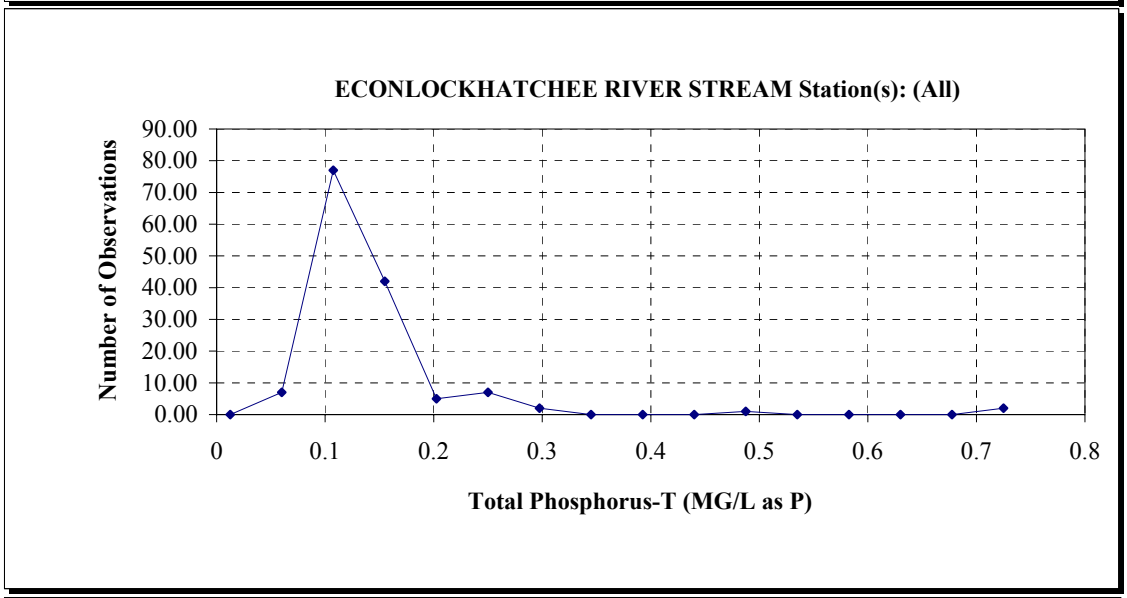
Slope Significance	P-value	8.42662E-05
Result	Slope different than 0	

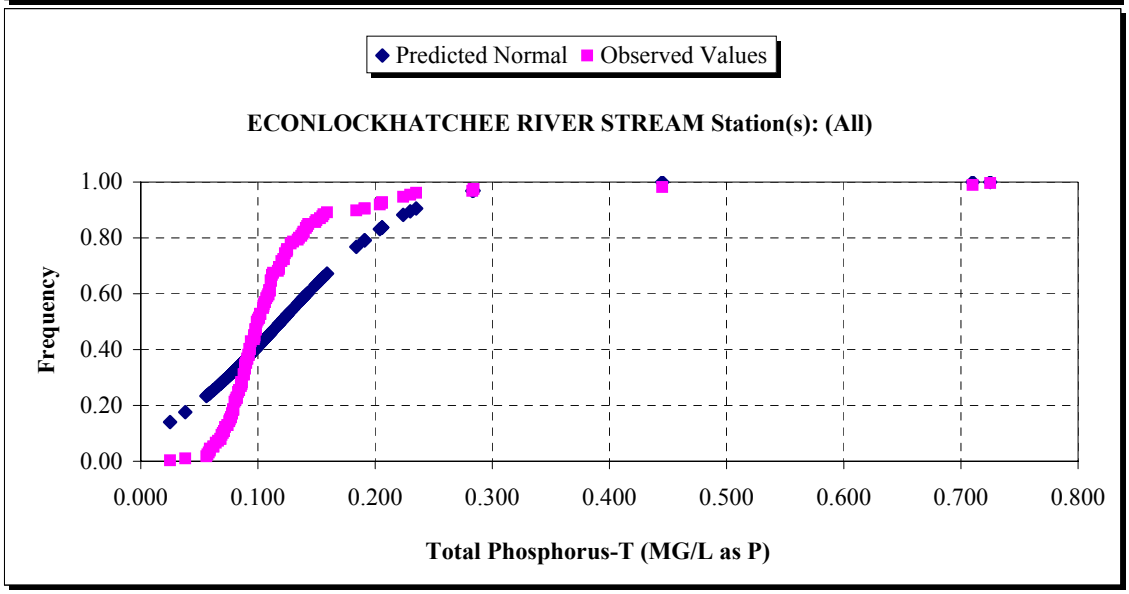
V. Rank Correlation

(Non-parametric Test of Association)

	rho	rho critical
Pearson (ranks)	-0.3228	0.1380
Result:	Significant association	


ECONLOCKHATCHEE RIVER STREAM Station(s): (All)
Total Phosphorus-T (MG/L as P)
0.800
0.700
0.600
0.500
0.400
0.300
0.200
0.100
0.000
1980
1981
1982
1983
1984
1985
1986
1987
1988
1989
1990
1991
1992
1993
1994
1995
1996
1997
1998
1999
2000
2001
2002
Year
y = -0.00002x + 0.81722
R2 = 0.22468


ECONLOCKHATCHEE RIVER STREAM Station(s): (All)
Number of Observations
90.00
80.00
70.00
60.00
50.00
40.00
30.00
20.00
10.00
0.00
0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
Total Phosphorus-T (MG/L as P)


Predicted Normal
Observed Values
ECONLOCKHATCHEE RIVER STREAM Station(s): (All)
Frequency
1.00
0.80
0.60
0.40
0.20
0.00
0.000
0.100
0.200
0.300
0.400
0.500
0.600
0.700
0.800
Total Phosphorus-T (MG/L as P)

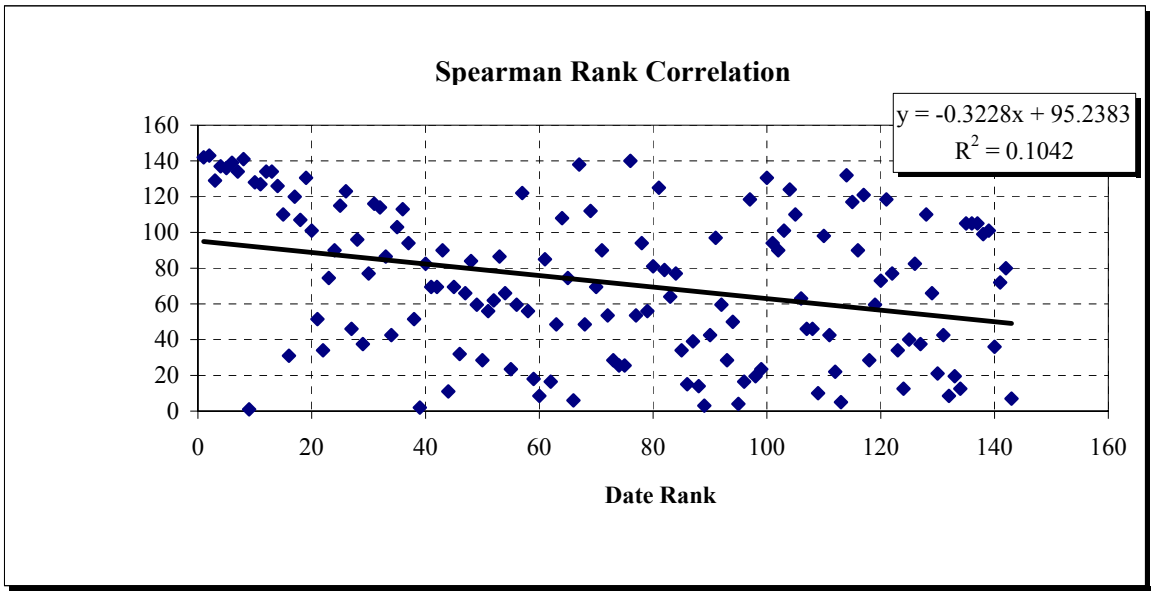


Table of Mean Period of Record Total Phosphorus-T (MG/L as P)

			95% Confidence Interval		
Year	**Median**	**Annual Ave**	**Lower**	**Upper**	**# Months**
1980	0.7100	0.7100	#DIV/0!	#DIV/0!	1
1981	0.7250	0.7250	#DIV/0!	#DIV/0!	1
1983	0.2240	0.2254	0.1931	0.2577	5
1984	0.2350	0.2350	-0.1766	0.6466	2
1985	0.1590	0.1590	#DIV/0!	#DIV/0!	1
1986	0.1560	0.1696	0.1385	0.2007	5
1987	0.1205	0.1238	0.0920	0.1557	6
1988	0.1055	0.1108	0.0897	0.1320	6
1989	0.1120	0.1138	0.0943	0.1333	5
1991	0.1100	0.1077	0.0941	0.1213	6
1992	0.0980	0.0860	0.0635	0.1085	6
1993	0.0950	0.0925	0.0839	0.1011	6
1994	0.0930	0.0966	0.0832	0.1099	9
1995	0.0890	0.0878	0.0694	0.1062	7
1996	0.0980	0.1186	0.0787	0.1584	7
1997	0.1020	0.1178	0.0831	0.1525	11
1998	0.0805	0.0792	0.0702	0.0883	12
1999	0.1105	0.1140	0.0948	0.1331	12
2000	0.0965	0.1056	0.0825	0.1287	12
2001	0.0860	0.0955	0.0829	0.1081	11
2002	0.1019	0.0960	0.0817	0.1103	12

Station Summary	
Station ID	**Samples collected**
BEC	9
ECH	148
ER-420	3
ER-SJR	3
ER-ULER	3
Grand Total	166

Total Samples in Raw Data	
Total	169

Quality Assurance Codes Omitted	
Code	**Samples omitted**
Q	3
Grand Total	3

Water Quality Reports

ECONLOCKHATCHEE RIVER STREAM Station(s): (All)
Mean Total Suspended Solids (MG/L) 1985 to 2002
Storet Number 530

Summary

I. Descriptive Statistics

	Start	End
Dates	11/1/1985	12/1/2002
	Average	Std Dev
Mean	4.3648	2.6424
	lower	upper
95 % C.I.	3.9191	4.8105
	Period of Record	
1st Quartile	2.0000	
Median	4.0000	
2nd Quartile	5.0000	

1998-2002

Sample Size	Average	Std Dev
59.00	5.09	2.94

Median	5.0000
1st Quartile	3.0000
2nd Quartile	6.0000

Testing Assumptions

I. Skewness

Statistic	1.6453

II. Kurtosis

Statistic	2.8841

III. KS Test - Normality

N	135
Critical Dmax	0.0768
Dmax	0.1827
Result	Reject Normality

Quality Assurance/Quality Control

QA for
ECONLOCKHATCHEE RIVER STR Total Suspende

All J,Q,T,V,!, #, and Y were omitted
Remark Codes in this data set

I	8
K	7
T	18
U	35
(blank)	90
Grand Total	158

Seasonality (Oct-May vs June-Sept)

I. Descriptive Statistics

	Wet (J-S)	Dry (O-M)
N	43	92
Mean	5.4942	3.8370
SD	4.0697	3.3789
1st Quartile	2.0500	1.0000
Median	5.0000	3.0000
2nd Quartile	7.0000	5.0000

II. Parametric Statistical Test

Two Sample	t-statistic	P-value
t-test	0.0231	0.9816
Result	No Seasonality	

Trend Analysis

I. Least-Squares Regression

Slope	0.000456	-11.6365275	Intercept
SE slope	0.000176	6.183106706	SE intercept
r-square	0.0480566	3.604306239	SE y-est.
F value	6.7141939	133	Sample N
SS regress	87.224251	1727.80612	

Slope Significance	P-value	0.010632445
Result	Slope greater than 0	

II. Decadal Rate Change Estimate

Rate (/10y)	1.664319	MG/L/Decade

III. Pearson's r Correlation Coefficient

Pearsons r	0.2192
Result	Weak Correlation

IV. Least-Squares Rank Regression

(Non-parametric Trend Analysis +/-)

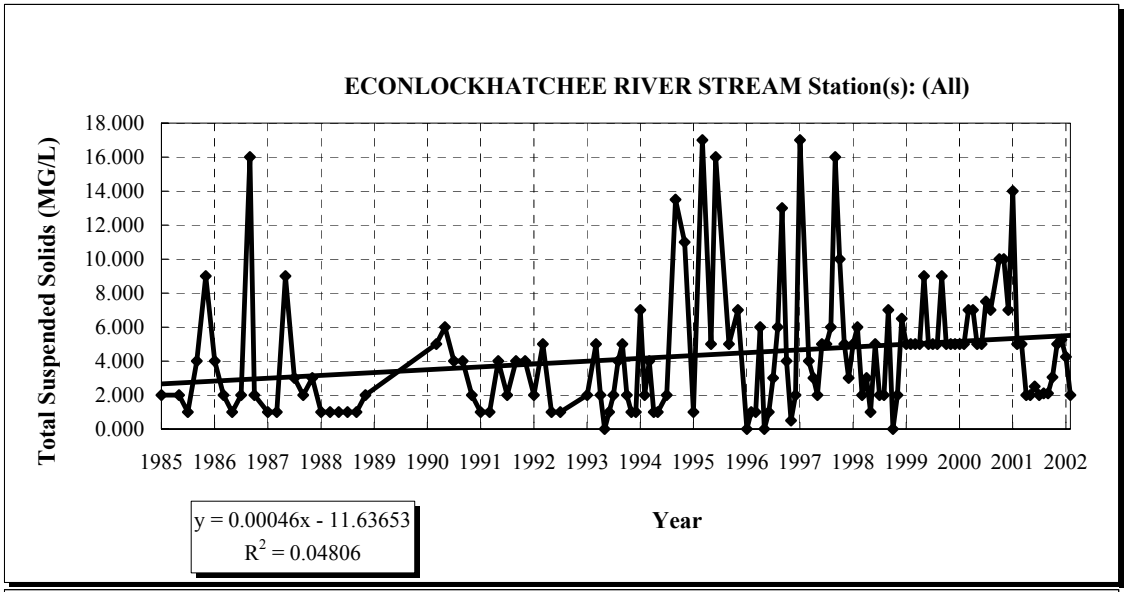
Slope	0.3626841	43.33747927	Intercept
SE slope	0.0797835	6.253044429	SE intercept
r-square	0.1344797	36.1252744	SE y-est.
F value	20.664791	133	Sample N
SS regress	26968.285	173569.7149	

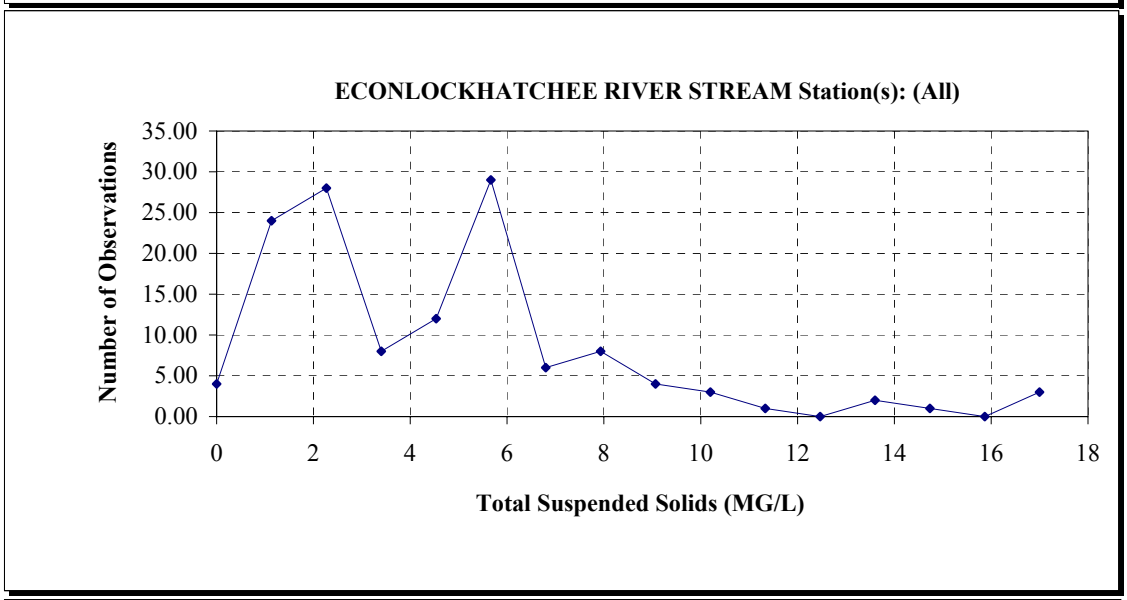
Slope Significance	P-value	1.21648E-05
Result	Slope different than 0	

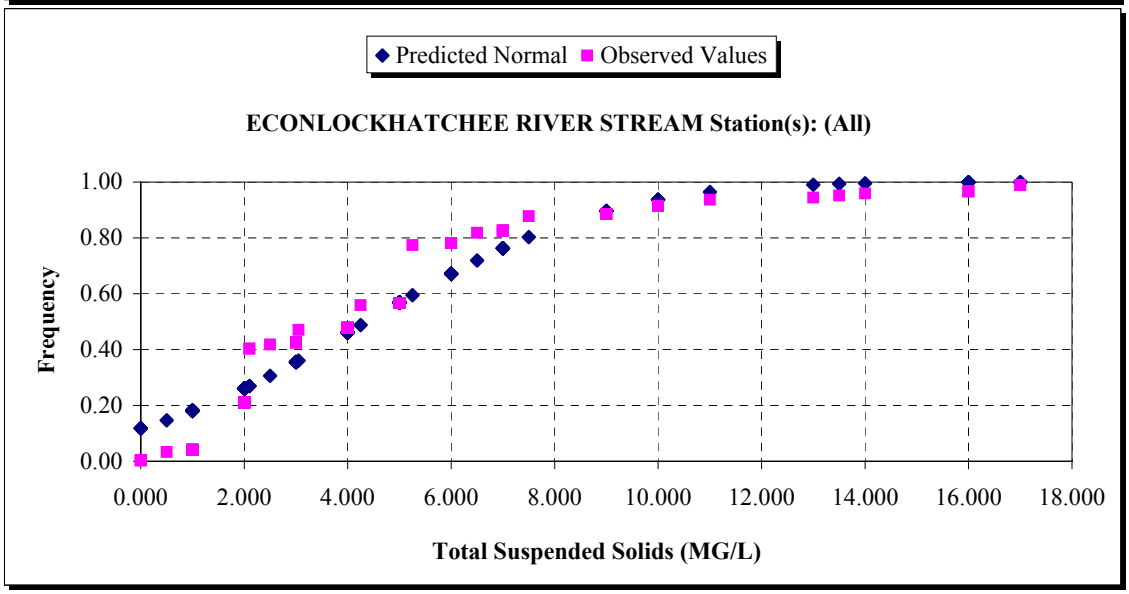
V. Rank Correlation

(Non-parametric Test of Association)

	rho	rho critical
Pearson (ranks)	0.3667	0.1421
Result:	Significant association	


ECONLOCKHATCHEE RIVER STREAM Station(s): (All)
Total Suspended Solids (MG/L)
18.000
16.000
14.000
12.000
10.000
8.000
6.000
4.000
2.000
0.000
1985 1986 1987 1988 1989 1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002
Year
y = 0.00046x - 11.63653
R2 = 0.04806


ECONLOCKHATCHEE RIVER STREAM Station(s): (All)
Number of Observations
35.00
30.00
25.00
20.00
15.00
10.00
5.00
0.00
0 2 4 6 8 10 12 14 16 18
Total Suspended Solids (MG/L)


Predicted Normal
Observed Values
ECONLOCKHATCHEE RIVER STREAM Station(s): (All)
Frequency
1.00
0.80
0.60
0.40
0.20
0.00
0.000 2.000 4.000 6.000 8.000 10.000 12.000 14.000 16.000 18.000
Total Suspended Solids (MG/L)

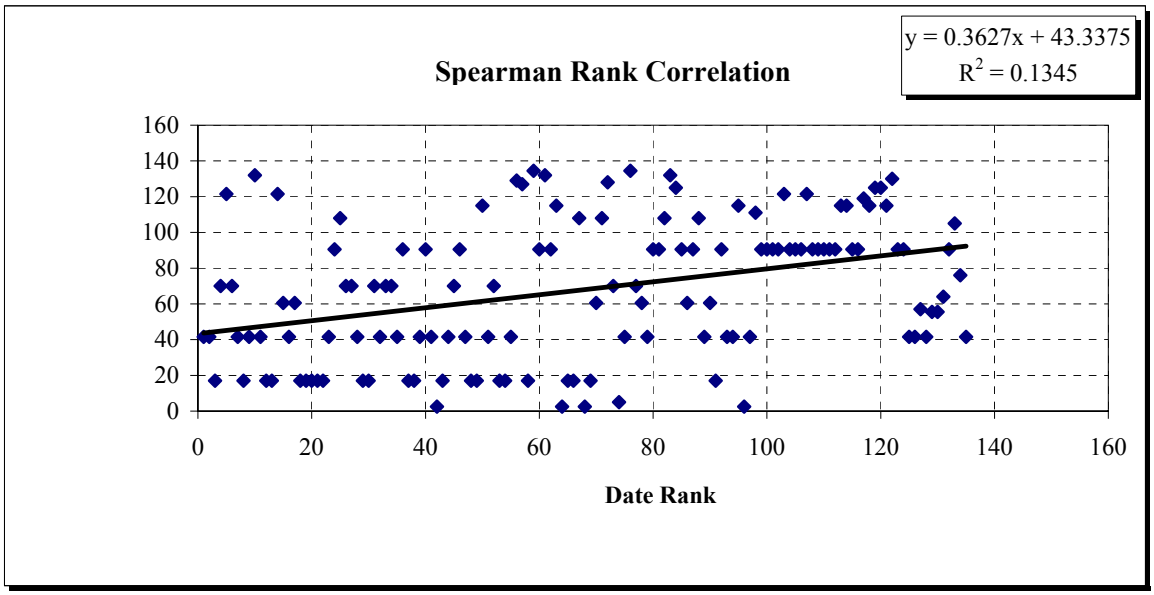


Table of Mean Period of Record Total Suspended Solids (MG/L)

			95% Confidence Interval		
Year	**Median**	**Annual Ave**	**Lower**	**Upper**	**# Months**
1985	2.0000	2.0000	#DIV/0!	#DIV/0!	1
1986	4.0000	4.0000	1.2984	6.7016	5
1987	2.0000	4.0000	-0.7202	8.7202	6
1988	2.5000	3.1667	0.7707	5.5627	6
1989	1.0000	1.2000	0.8080	1.5920	5
1991	4.0000	3.6667	2.1769	5.1565	6
1992	3.0000	2.8333	1.7698	3.8969	6
1993	1.5000	2.2500	0.3949	4.1051	4
1994	2.0000	2.6667	1.4766	3.8567	12
1995	2.0000	4.7857	0.8900	8.6814	7
1996	5.0000	7.2857	2.2849	12.2866	7
1997	3.0000	4.8636	1.6212	8.1060	11
1998	5.0000	5.8333	3.6913	7.9754	12
1999	2.5000	3.3750	2.1034	4.6466	12
2000	5.0000	5.6667	4.7857	6.5476	12
2001	7.0000	7.6818	6.0728	9.2909	11
2002	2.3000	3.1042	2.3343	3.8741	12

Station Summary	
Station ID	**Samples collected**
ECH	149
ER-420	3
ER-SJR	3
ER-ULER	3
Grand Total	158

Total Samples in Raw Data	
Total	162

Quality Assurance Codes Omitted	
Code	**Samples omitted**
Q	3
UQ6	1
Grand Total	4

Water Quality Reports

ECONLOCKHATCHEE RIVER STREAM Station(s): (All)
Mean Turbidity, Laboratory Nephelometric (NTU) 1985 to 2002
Storet Number 82079

Summary

I. Descriptive Statistics

	Start	End
Dates	11/1/1985	12/1/2002
	Average	Std Dev
Mean	3.9410	2.2879
	lower	upper
95 % C.I.	3.5399	4.3421
	Period of Record	
1st Quartile	2.3000	
Median	3.2000	
2nd Quartile	4.8800	

1998-2002

Sample Size	Average	Std Dev
53.00	3.06	1.56
Median	2.5000	
1st Quartile	1.9000	
2nd Quartile	4.1200	

Testing Assumptions

I. Skewness

Statistic	2.0121

II. Kurtosis

Statistic	6.5596

III. KS Test - Normality

N	125
Critical Dmax	0.0798
Dmax	0.1317
Result	Reject Normality

Quality Assurance/Quality Control

QA for
ECONLOCKHATCHEE RIVER STR Turbidity, Lab

All J,Q,T,V,!, #, and Y were omitted
Remark Codes in this data set

	16
I	1
(blank)	132
Grand Total	149

Seasonality (Oct-May vs June-Sept)

I. Descriptive Statistics

	Wet (J-S)	Dry (O-M)
N	44	81
Mean	4.6783	3.5405
SD	2.3333	2.3459
1st Quartile	3.0000	2.1000
Median	4.2500	2.9000
2nd Quartile	6.0250	4.3000

II. Parametric Statistical Test

Two Sample	t-statistic	P-value
t-test	0.0110	0.9913
Result	No Seasonality	

Trend Analysis

I. Least-Squares Regression

Slope	-0.0004524	19.78719468	Intercept
SE slope	0.0001132	3.970676781	SE intercept
r-square	0.1149041	2.262381018	SE y-est.
F value	15.967991	123	Sample N
SS regress	81.730053	629.5592481	

Slope Significance	P-value	0.000110222
Result	Slope greater than 0	

II. Decadal Rate Change Estimate

Rate (/10y)	-1.6513552	NTU/Decade

III. Pearson's r Correlation Coefficient

Pearsons r	-0.3390
Result	Weak Correlation

IV. Least-Squares Rank Regression

(Non-parametric Trend Analysis +/-)

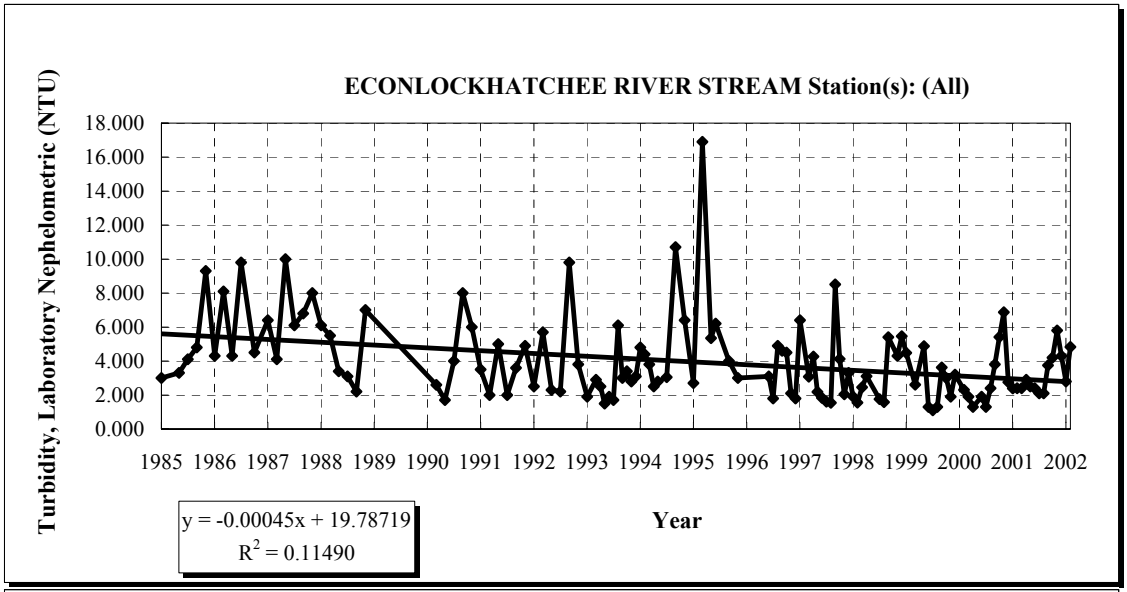
Slope	-0.3383533	84.31625806	Intercept
SE slope	0.0848372	6.159321735	SE intercept
r-square	0.1145107	34.22526983	SE y-est.
F value	15.90626	123	Sample N
SS regress	18632.101	144078.3987	

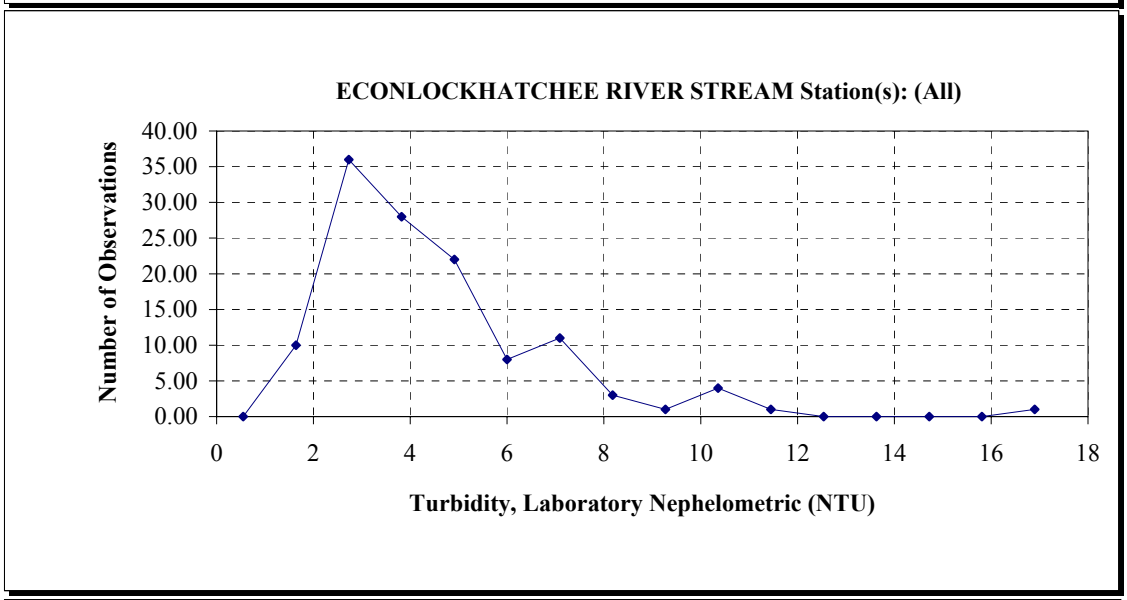
Slope Significance	P-value	0.000113449
Result	Slope different than 0	

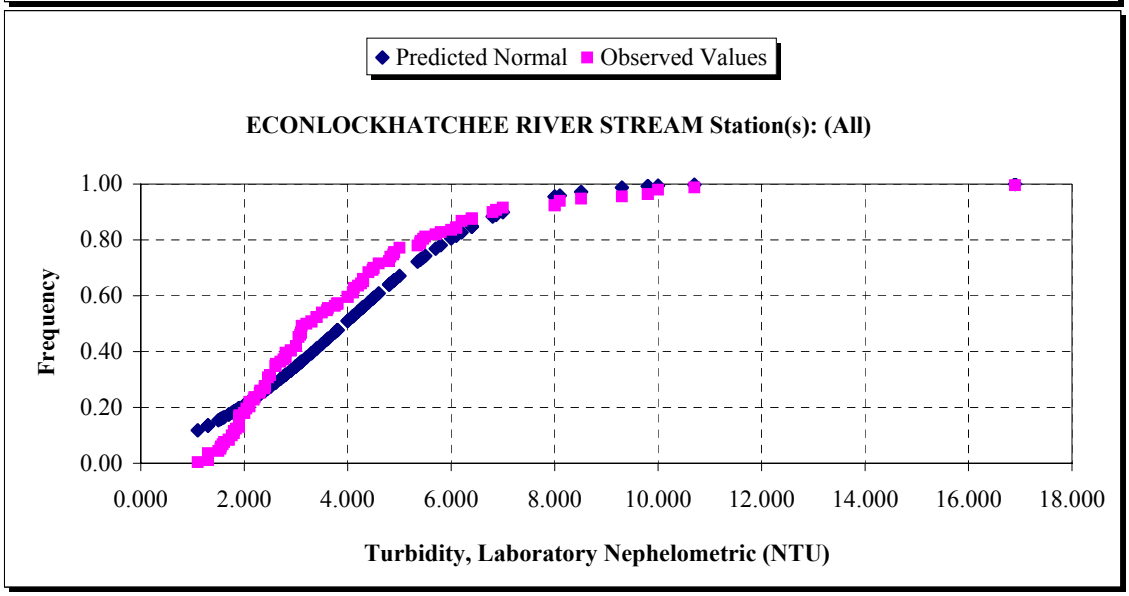
V. Rank Correlation

(Non-parametric Test of Association)

	rho	rho critical
Pearson (ranks)	-0.3384	0.1477
Result:	Significant association	


ECONLOCKHATCHEE RIVER STREAM Station(s): (All)
Turbidity, Laboratory Nephelometric (NTU)
18.000
16.000
14.000
12.000
10.000
8.000
6.000
4.000
2.000
0.000
1985 1986 1987 1988 1989 1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002
Year
y = -0.00045x + 19.78719
R2 = 0.11490


ECONLOCKHATCHEE RIVER STREAM Station(s): (All)
Number of Observations
40.00
35.00
30.00
25.00
20.00
15.00
10.00
5.00
0.00
0 2 4 6 8 10 12 14 16 18
Turbidity, Laboratory Nephelometric (NTU)


Predicted Normal
Observed Values
ECONLOCKHATCHEE RIVER STREAM Station(s): (All)
Frequency
1.00
0.80
0.60
0.40
0.20
0.00
0.000 2.000 4.000 6.000 8.000 10.000 12.000 14.000 16.000 18.000
Turbidity, Laboratory Nephelometric (NTU)

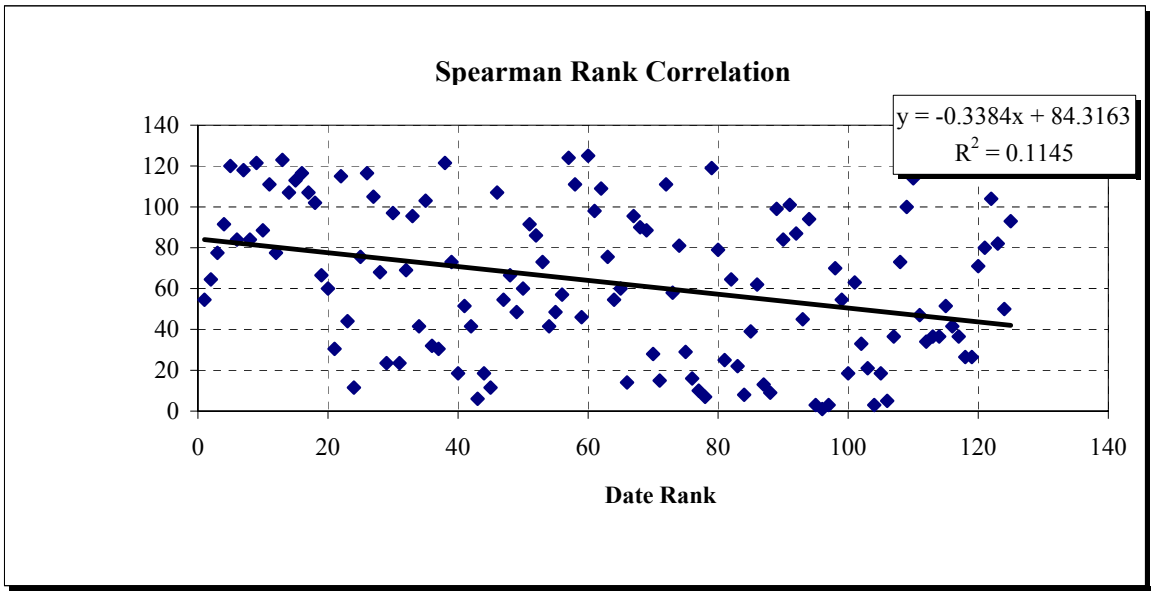


Table of Mean Period of Record Turbidity, Laboratory Nephelometric (NTU)

			95% Confidence Interval		
Year	**Median**	**Annual Ave**	**Lower**	**Upper**	**# Months**
1985	3.0000	3.0000	#DIV/0!	#DIV/0!	1
1986	4.3000	5.1600	3.0769	7.2431	5
1987	6.4000	6.6200	4.5538	8.6862	5
1988	6.4500	6.8500	5.2523	8.4477	6
1989	3.4000	4.2400	2.5217	5.9583	5
1991	3.7500	4.3000	2.4420	6.1580	6
1992	3.0500	3.3333	2.2273	4.4394	6
1993	3.0500	4.2833	1.8398	6.7268	6
1994	2.9500	3.1750	2.4109	3.9391	12
1995	3.0500	4.5643	2.3267	6.8019	7
1996	5.3500	7.0900	2.1641	12.0159	5
1997	3.8000	3.6500	2.4699	4.8301	8
1998	2.1125	2.9950	1.8686	4.1214	12
1999	3.7050	3.5694	2.4913	4.6474	8
2000	2.4600	2.5220	1.7799	3.2641	10
2001	2.4000	2.9486	1.9125	3.9847	11
2002	2.8500	3.3396	2.6547	4.0245	12

Station Summary	
Station ID	**Samples collected**
ECH	140
ER-420	3
ER-SJR	3
ER-ULER	3
Grand Total	149

Total Samples in Raw Data	
Total	156

Quality Assurance Codes Omitted	
Code	**Samples omitted**
Q1	6
Q5	1
Grand Total	7

Water Quality Reports

Lake Harney LAKE Station(s): (All)
Mean CHLA (UG/L) 1993 to 2002
Storet Number 32210

Summary

I. Descriptive Statistics

	Start	End
Dates	8/1/1993	10/1/2002
	Average	Std Dev
Mean	14.3122	30.1959
	lower	upper
95 % C.I.	7.0273	21.5971
	Period of Record	
1st Quartile	2.8200	
Median	7.4525	
2nd Quartile	17.6382	

	1998-2002	
Sample Size	Average	Std Dev
44	14.9595	19.5267
Median	8.2750	
1st Quartile	3.3900	
2nd Quartile	21.2338	

Testing Assumptions

I. Skewness

Statistic	3.1033

II. Kurtosis

Statistic	11.9291

III. KS Test - Normality

N	66
Critical Dmax	0.1096
Dmax	0.2326
Result	Reject Normality

Quality Assurance/Quality Control

QA for
Lake Harney LA CHLA

All J,Q,T,V,!, #, and Y were omitted
Remark Codes in this data set

	80
Grand Total	80

Seasonality (Oct-May vs June-Sept)

I. Descriptive Statistics

	Wet (J-S)	Dry (O-M)
N	24	42
Mean	23.3417	9.1526
SD	27.3614	10.6659
1st Quartile	5.8000	2.5425
Median	13.3550	5.5850
2nd Quartile	29.9200	10.0625

II. Parametric Statistical Test

Two Sample	t-statistic	P-value
t-test	0.0217	0.9828
Result	No Seasonality	

Trend Analysis

I. Least-Squares Regression

Slope	0.0013487	-33.4561641	Intercept
SE slope	0.0027866	98.72388493	SE intercept
r-square	0.003647	19.71156202	SE y-est.
F value	0.2342606	64	Sample N
SS regress	91.020953	24866.92335	

Slope Significance	P-value	0.630034586
Result	Slope equivalent to 0	

II. Decadal Rate Change Estimate

Rate (/10y)	4.922776	UG/L/Decade

III. Pearson's r Correlation Coefficient

Pearsons r	0.0604
Result	Weak Correlation

IV. Least-Squares Rank Regression

(Non-parametric Trend Analysis +/-)

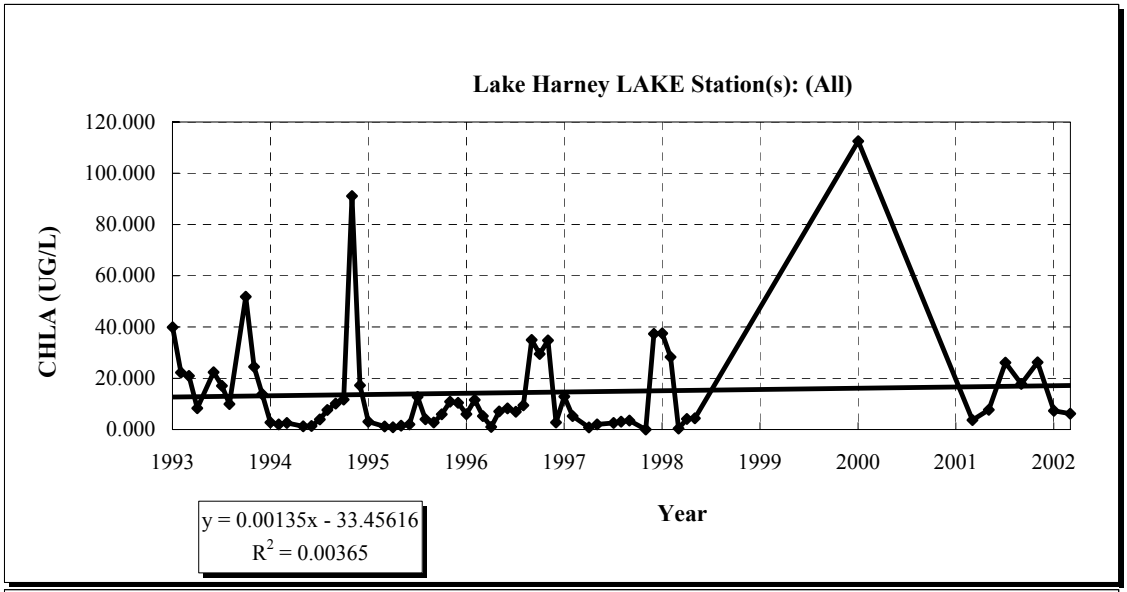
Slope	-0.0456946	35.03076923	Intercept
SE slope	0.1248681	4.812150379	SE intercept
r-square	0.002088	19.32533443	SE y-est.
F value	0.1339142	64	Sample N
SS regress	50.012744	23901.98726	

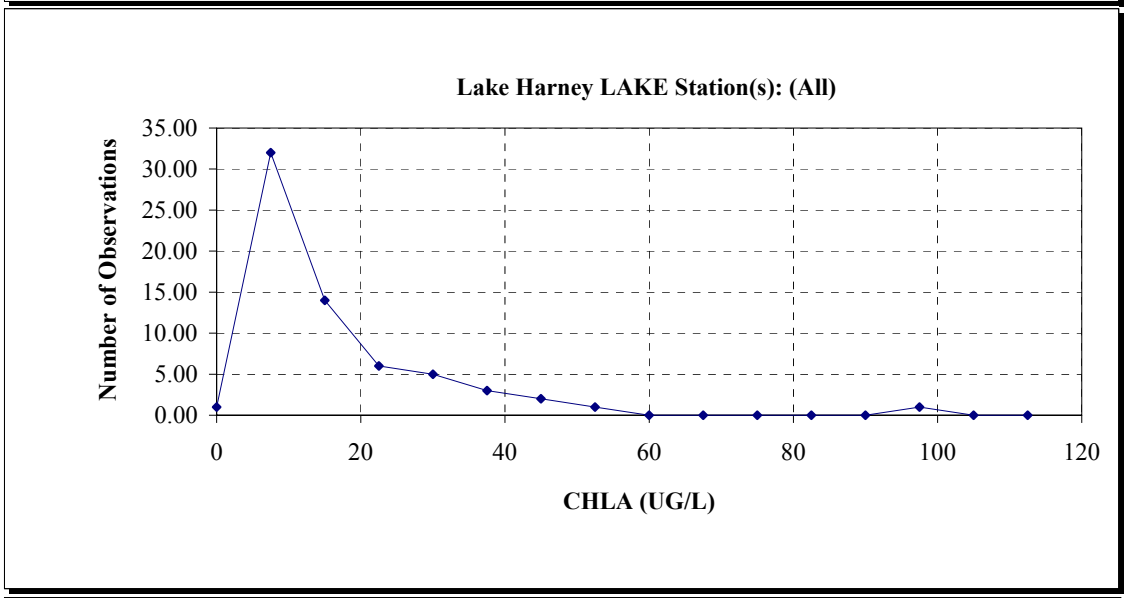
Slope Significance	P-value	0.715614537
Result	Slope equivalent to 0	

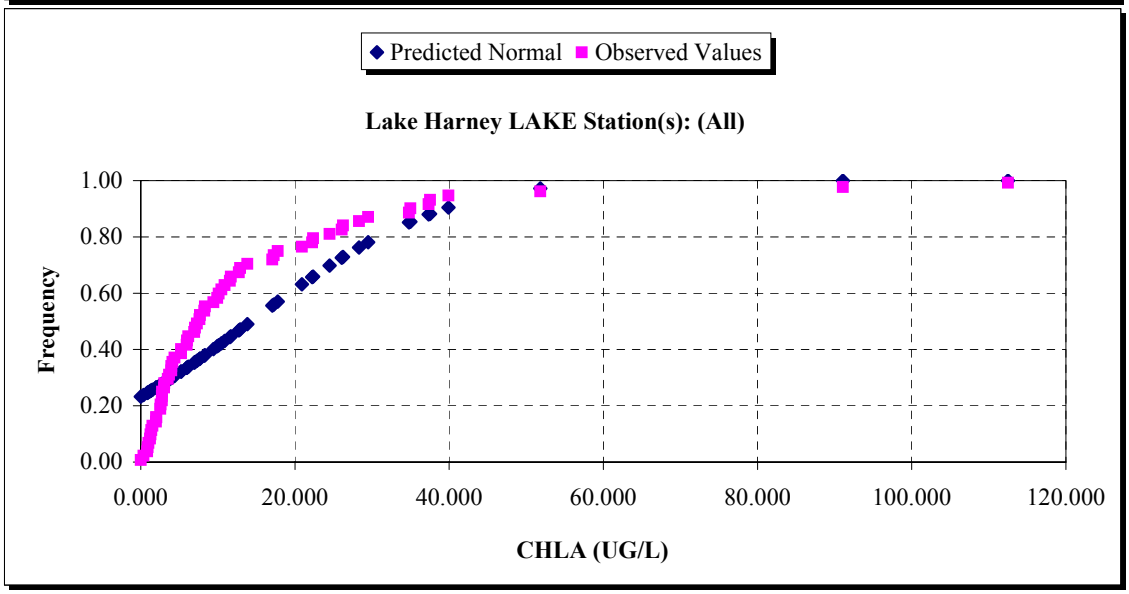
V. Rank Correlation

(Non-parametric Test of Association)

	rho	rho critical
Pearson (ranks)	-0.0457	0.2040
Result:	No significant association	


Lake Harney LAKE Station(s): (All)
CHLA (UG/L)
120.000
100.000
80.000
60.000
40.000
20.000
0.000
1993
1994
1995
1996
1997
1998
1999
2000
2001
2002
Year
y = 0.00135x - 33.45616
R2 = 0.00365


Lake Harney LAKE Station(s): (All)
Number of Observations
35.00
30.00
25.00
20.00
15.00
10.00
5.00
0.00
0
20
40
60
80
100
120
CHLA (UG/L)


Predicted Normal
Observed Values
Lake Harney LAKE Station(s): (All)
Frequency
1.00
0.80
0.60
0.40
0.20
0.00
0.000
20.000
40.000
60.000
80.000
100.000
120.000
CHLA (UG/L)

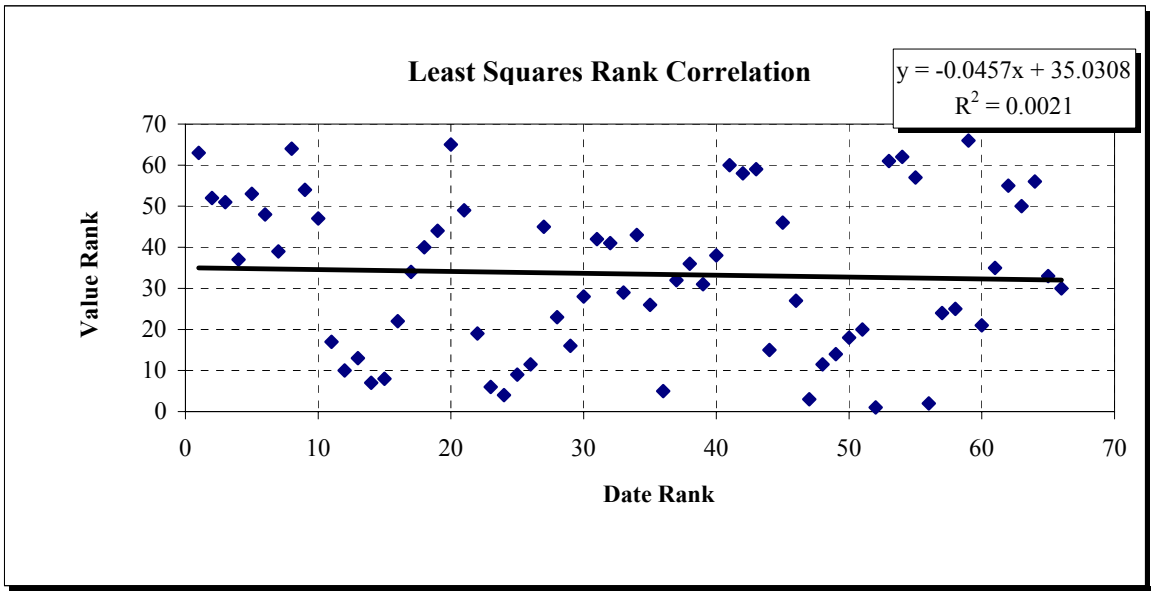


Table of Mean Period of Record CHLA (UG/L)

			95% Confidence Interval		
Year	**Median**	**Annual Ave**	**Lower**	**Upper**	**# Months**
1994	11.8700	14.7990	5.1213	24.4767	10
1995	3.9600	13.6105	-1.8918	29.1127	11
1996	5.9700	6.6250	4.3868	8.8632	12
1997	8.2300	13.4123	5.6304	21.1941	11
1998	3.8050	12.1110	2.4214	21.8006	10
2000	112.4889	112.4889	#DIV/0!	#DIV/0!	1
2001	5.6774	5.6774	1.7459	9.6088	2
2002	17.7709	16.7078	8.1694	25.2462	5

Station Summary	
Station ID	**Samples collected**
CLH	9
LKHRNY	1
SJ03	70
Grand Total	80

Total Samples in Raw Data	
Total	80

Quality Assurance Codes Omitted	
Code	**Samples omitted**
Grand Total	

Water Quality Reports

Lake Harney LAKE Station(s): (All)
Mean TN-T (MG/L as N) 1991 to 2002
Storet Number 600

Summary

I. Descriptive Statistics

	Start	End
Dates	1/1/1991	10/1/2002
	Average	Std Dev
Mean	1.3351	0.1352
	lower	upper
95 % C.I.	1.3077	1.3624
	Period of Record	
1st Quartile	1.0923	
Median	1.2965	
2nd Quartile	1.5171	

	1998-2002	
Sample Size	Average	Std Dev
64	1.3645	0.3400
Median	1.3110	
1st Quartile	1.0968	
2nd Quartile	1.5908	

Testing Assumptions

I. Skewness

Statistic	1.6317

II. Kurtosis

Statistic	6.3689

III. KS Test - Normality

N	94
Critical Dmax	0.0923
Dmax	0.0803
Result	Can't reject Normality

Quality Assurance/Quality Control

QA for
Lake Harney LA TN-T

All J,Q,T,V,!, #, and Y were omitted
Remark Codes in this data set

	78
T	3
U	17
I	12
Grand Total	110

Seasonality (Oct-May vs June-Sept)

I. Descriptive Statistics

	Wet (J-S)	Dry (O-M)
N	34	60
Mean	1.4037	1.2962
SD	0.3663	0.2775
1st Quartile	1.2133	1.0750
Median	1.3960	1.2345
2nd Quartile	1.5425	1.5021

II. Parametric Statistical Test

Two Sample	t-statistic	P-value
t-test	0.1426	0.8869
Result	No Seasonality	

Trend Analysis

I. Least-Squares Regression

Slope	2.277E-05	0.540197906	Intercept
SE slope	2.969E-05	1.037149706	SE intercept
r-square	0.0063503	0.315624337	SE y-est.
F value	0.5879635	92	Sample N
SS regress	0.0585722	9.16492245	

Slope Significance	P-value	0.445170911
Result	Slope equivalent to 0	

II. Decadal Rate Change Estimate

Rate (/10y)	0.0831042	MG/L as N/Decade

III. Pearson's r Correlation Coefficient

Pearsons r	0.0797
Result	Weak Correlation

IV. Least-Squares Rank Regression

(Non-parametric Trend Analysis +/-)

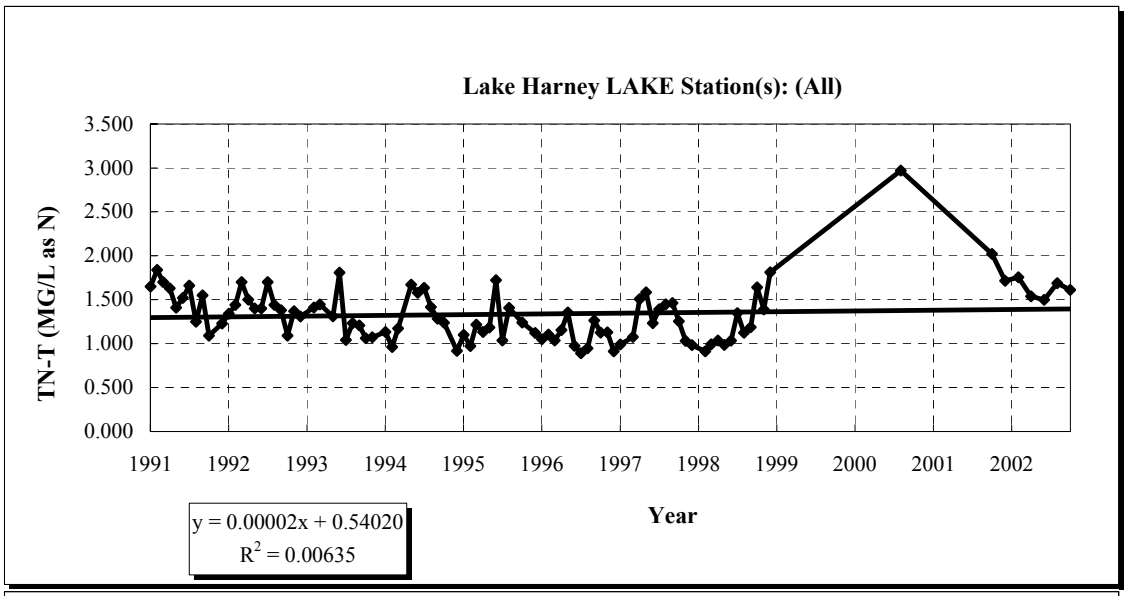
Slope	-0.1298703	53.66884008	Intercept
SE slope	0.1033705	5.654751178	SE intercept
r-square	0.0168675	27.19399422	SE y-est.
F value	1.578436	92	Sample N
SS regress	1167.2744	68035.22559	

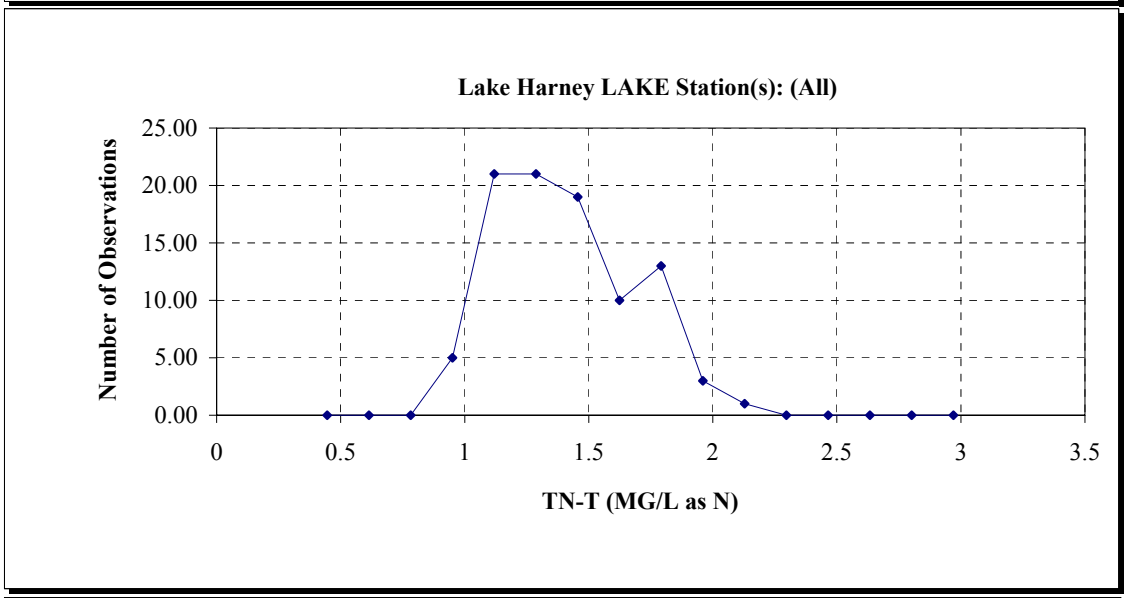
Slope Significance	P-value	0.212166983
Result	Slope equivalent to 0	

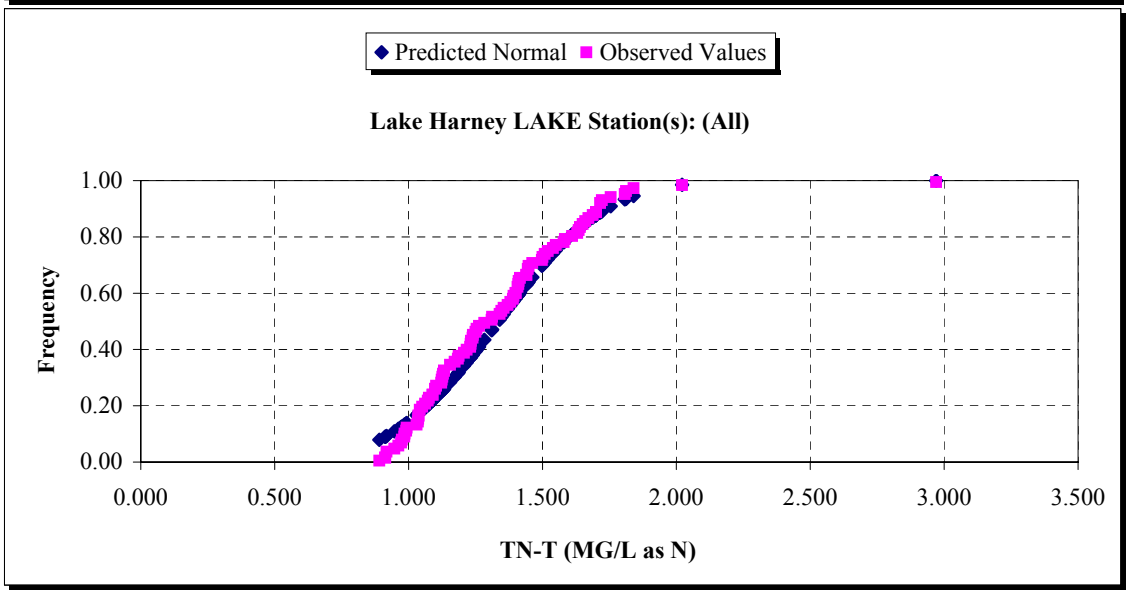
V. Rank Correlation

(Non-parametric Test of Association)

	rho	rho critical
Pearson (ranks)	-0.1299	0.1706
Result:	No significant association	


Lake Harney LAKE Station(s): (All)
TN-T (MG/L as N)
3.500
3.000
2.500
2.000
1.500
1.000
0.500
0.000
1991
1992
1993
1994
1995
1996
1997
1998
1999
2000
2001
2002
Year
y = 0.00002x + 0.54020
R2 = 0.00635


Lake Harney LAKE Station(s): (All)
Number of Observations
25.00
20.00
15.00
10.00
5.00
0.00
0
0.5
1
1.5
2
2.5
3
3.5
TN-T (MG/L as N)


Predicted Normal
Observed Values
Lake Harney LAKE Station(s): (All)
Frequency
1.00
0.80
0.60
0.40
0.20
0.00
0.000
0.500
1.000
1.500
2.000
2.500
3.000
3.500
TN-T (MG/L as N)

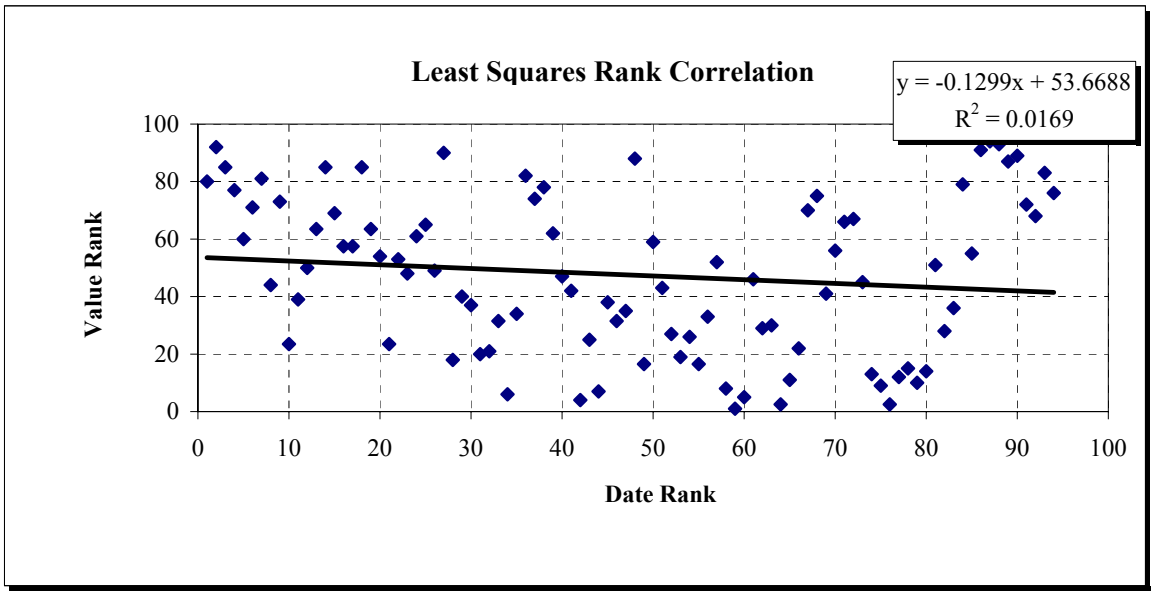


Table of Mean Period of Record TN-T (MG/L as N)

			95% Confidence Interval		
Year	**Median**	**Annual Ave**	**Lower**	**Upper**	**# Months**
1991	1.5500	1.5027	1.3660	1.6394	11
1992	1.4000	1.4225	1.3297	1.5153	12
1993	1.2320	1.2878	1.1281	1.4476	9
1994	1.2610	1.3008	1.1341	1.4675	10
1995	1.1580	1.2133	1.0801	1.3464	10
1996	1.0770	1.0787	0.9997	1.1578	12
1997	1.2540	1.2693	1.1378	1.4008	11
1998	1.1240	1.2238	1.0514	1.3962	11
2000	2.9700	2.9700	#DIV/0!	#DIV/0!	1
2001	1.8683	1.8683	1.5689	2.1676	2
2002	1.6110	1.6182	1.5259	1.7105	5

Station Summary	
Station ID	**Samples collected**
CLH	9
LKHRNY	1
SJ03	100
Grand Total	110

Total Samples in Raw Data	
Total	113

Quality Assurance Codes Omitted	
Code	**Samples omitted**
J	3
Grand Total	3

Water Quality Reports

Lake Harney LAKE Station(s): (All)
Mean TP-T (MG/L as P) 1991 to 2002
Storet Number 665

Summary

I. Descriptive Statistics

	Start	End
Dates	1/1/1991	10/1/2002
	Average	Std Dev
Mean	0.0612	0.0149
	lower	upper
95 % C.I.	0.0582	0.0643
	Period of Record	
1st Quartile	0.0415	
Median	0.0530	
2nd Quartile	0.0743	

	1998-2002	
Sample Size	Average	Std Dev
61	0.0605	0.0286
Median	0.0520	
1st Quartile	0.0400	
2nd Quartile	0.0750	

Testing Assumptions

I. Skewness

Statistic	1.0268

II. Kurtosis

Statistic	0.6223

III. KS Test - Normality

N	91
Critical Dmax	0.0932
Dmax	0.1512
Result	Reject Normality

Quality Assurance/Quality Control

QA for
Lake Harney LA TP-T

All J,Q,T,V,!, #, and Y were omitted
Remark Codes in this data set

	66
T	1
I	40
Grand Total	107

Seasonality (Oct-May vs June-Sept)

I. Descriptive Statistics

	Wet (J-S)	Dry (O-M)
N	33	58
Mean	0.0691	0.0567
SD	0.0300	0.0260
1st Quartile	0.0485	0.0400
Median	0.0600	0.0500
2nd Quartile	0.0770	0.0715

II. Parametric Statistical Test

Two Sample	t-statistic	P-value
t-test	0.0516	0.9589
Result	No Seasonality	

Trend Analysis

I. Least-Squares Regression

Slope	8.434E-06	-0.23317217	Intercept
SE slope	2.571E-06	0.089764307	SE intercept
r-square	0.1079108	0.026573564	SE y-est.
F value	10.76581	89	Sample N
SS regress	0.0076023	0.062847735	

Slope Significance	P-value	0.001477516
Result	Slope significantly different than 0	

II. Decadal Rate Change Estimate

Rate (/10y)	0.0307853	MG/L as P/Decade

III. Pearson's r Correlation Coefficient

Pearsons r	0.3285
Result	Weak Correlation

IV. Least-Squares Rank Regression

(Non-parametric Trend Analysis +/-)

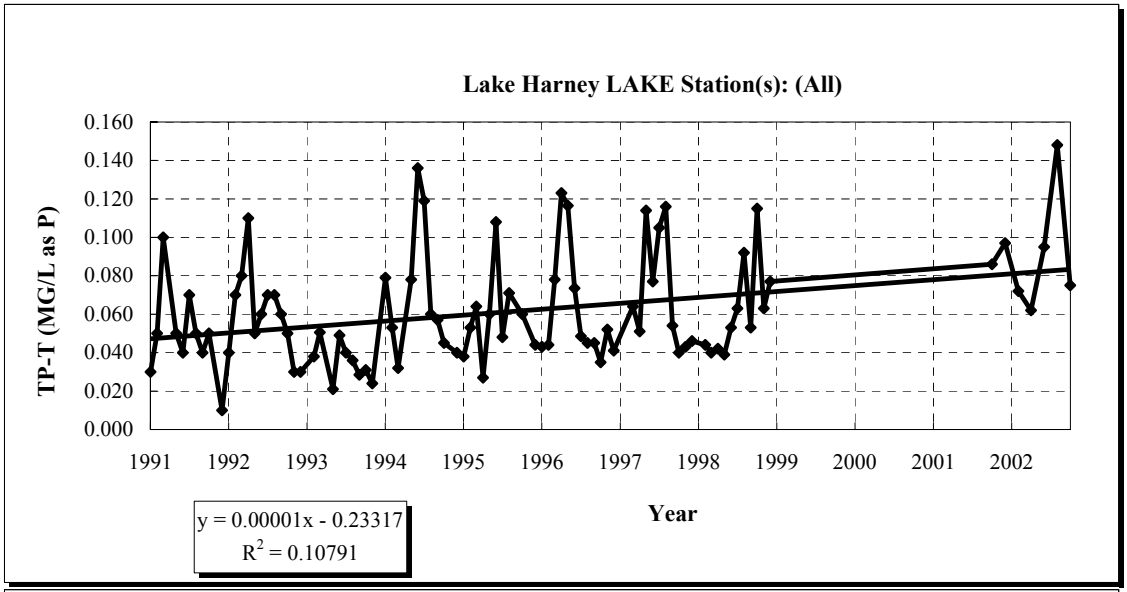
Slope	0.2952699	32.41758242	Intercept
SE slope	0.1012078	5.36114971	SE intercept
r-square	0.0872879	25.36058943	SE y-est.
F value	8.5115821	89	Sample N
SS regress	5474.3048	57241.19517	

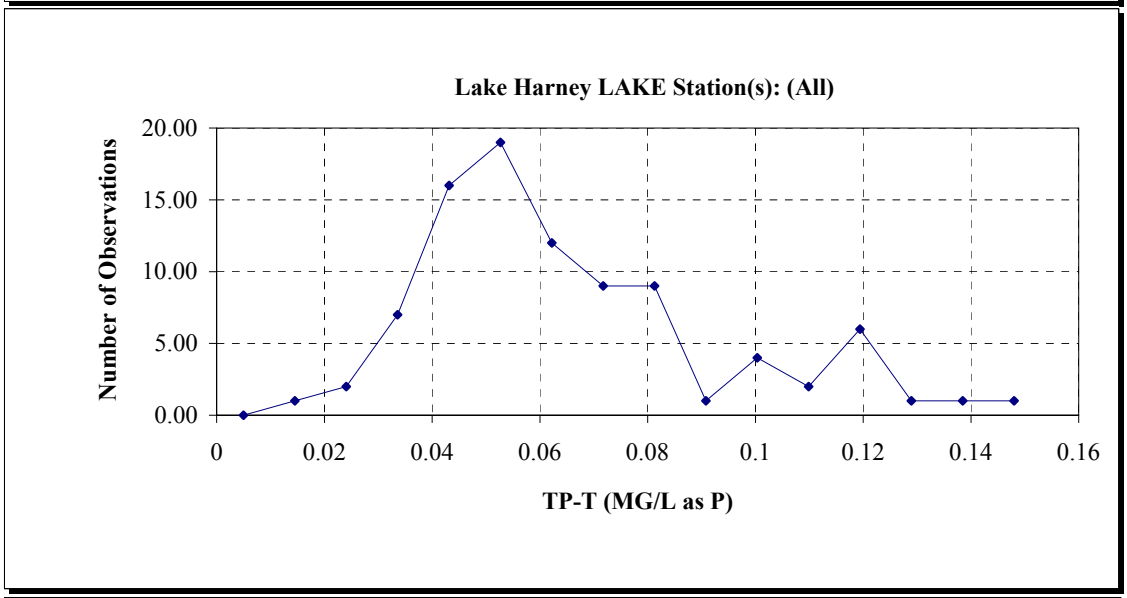
Slope Significance	P-value	0.004466749
Result	Slope different than 0	

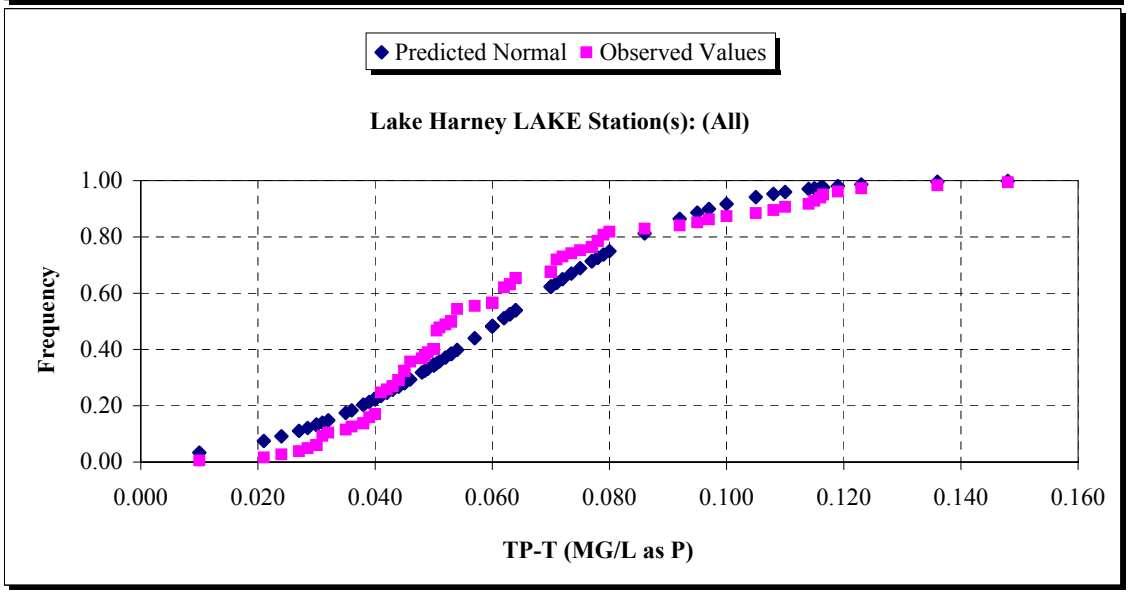
V. Rank Correlation

(Non-parametric Test of Association)

	rho	rho critical
Pearson (ranks)	0.2954	0.1734
Result:	Significant association	


Lake Harney LAKE Station(s): (All)
TP-T (MG/L as P)
0.160
0.140
0.120
0.100
0.080
0.060
0.040
0.020
0.000
1991
1992
1993
1994
1995
1996
1997
1998
1999
2000
2001
2002
Year
y = 0.00001x - 0.23317
R2 = 0.10791


Lake Harney LAKE Station(s): (All)
Number of Observations
20.00
15.00
10.00
5.00
0.00
0
0.02
0.04
0.06
0.08
0.1
0.12
0.14
0.16
TP-T (MG/L as P)


Predicted Normal
Observed Values
Lake Harney LAKE Station(s): (All)
Frequency
1.00
0.80
0.60
0.40
0.20
0.00
0.000
0.020
0.040
0.060
0.080
0.100
0.120
0.140
0.160
TP-T (MG/L as P)

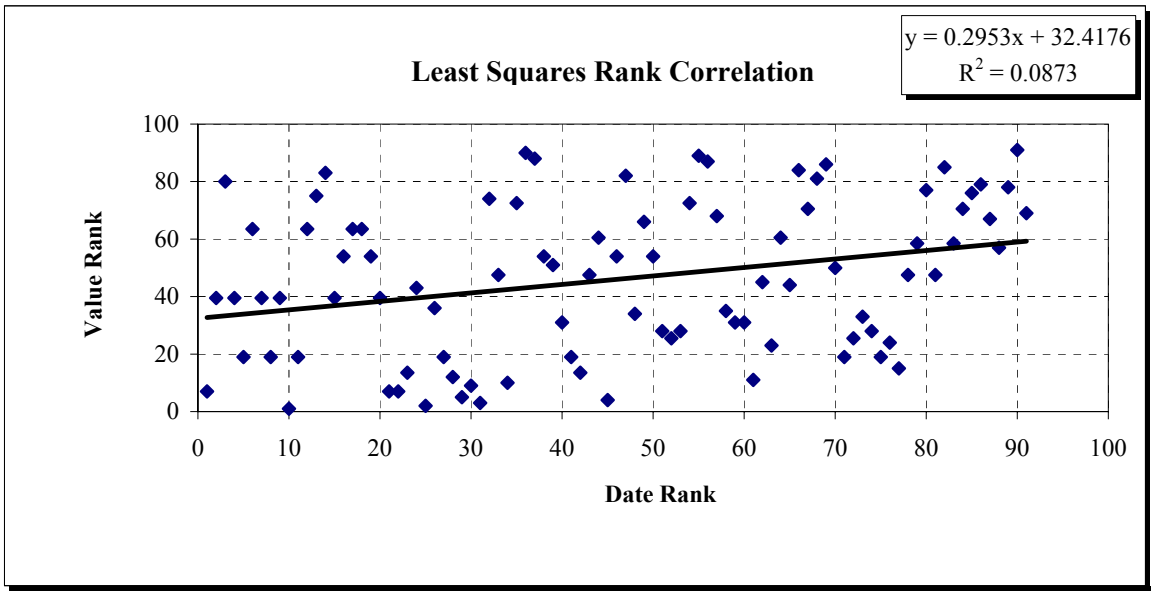


Table of Mean Period of Record TP-T (MG/L as P)

			95% Confidence Interval		
Year	**Median**	**Annual Ave**	**Lower**	**Upper**	**# Months**
1991	0.0500	0.0490	0.0343	0.0637	10
1992	0.0600	0.0600	0.0472	0.0728	12
1993	0.0360	0.0353	0.0286	0.0420	9
1994	0.0585	0.0699	0.0488	0.0910	10
1995	0.0565	0.0573	0.0436	0.0710	10
1996	0.0468	0.0620	0.0452	0.0789	12
1997	0.0590	0.0710	0.0523	0.0897	10
1998	0.0530	0.0619	0.0476	0.0762	11
2001	0.0915	0.0915	0.0807	0.1023	2
2002	0.0750	0.0904	0.0603	0.1205	5

Station Summary	
Station ID	**Samples collected**
CLH	9
SJ03	98
Grand Total	107

Total Samples in Raw Data	
Total	110

Quality Assurance Codes Omitted	
Code	**Samples omitted**
J	2
#	1
Grand Total	3

Water Quality Reports

ST JOHNS RIVER RIVER Station(s): (All)
Mean Chlorophyll-A (MG/M3) 1996 to 2002
Storet Number 32210

Summary

I. Descriptive Statistics

	Start	End
Dates	3/1/1996	12/1/2002
	Average	Std Dev
Mean	16.8101	20.0867
	lower	upper
95 % C.I.	11.9641	21.6561
	Period of Record	
1st Quartile	1.9162	
Median	4.4125	
2nd Quartile	25.6750	

1998-2002

Sample Size	Average	Std Dev
55.00	18.74	23.79
Median	5.2300	
1st Quartile	2.1550	
2nd Quartile	28.2500	

Testing Assumptions

I. Skewness

Statistic	1.7708

II. Kurtosis

Statistic	2.8086

III. KS Test - Normality

N	66
Critical Dmax	0.1096
Dmax	0.2697
Result	Reject Normality

Quality Assurance/Quality Control

QA for
ST JOHNS RIVER RIV Chlorophyll-A

All J,Q,T,V,!, #, and Y were omitted
Remark Codes in this data set

	2
I	5
T	1
W	2
(blank)	64
Grand Total	74

Seasonality (Oct-May vs June-Sept)

I. Descriptive Statistics

	Wet (J-S)	Dry (O-M)
N	22	44
Mean	28.7148	10.8578
SD	26.7070	18.7304
1st Quartile	5.5025	1.7925
Median	22.6000	2.7250
2nd Quartile	46.7500	9.5063

II. Parametric Statistical Test

Two Sample	t-statistic	P-value
t-test	0.0084	0.9933
Result	No Seasonality	

Trend Analysis

I. Least-Squares Regression

Slope	0.0080908	-278.108881	Intercept
SE slope	0.0042538	155.0790646	SE intercept
r-square	0.0535031	22.66680389	SE y-est.
F value	3.6177598	64	Sample N
SS regress	1858.7471	32882.1759	

Slope Significance	P-value	0.061668057
Result	Slope not greater than 0	

II. Decadal Rate Change Estimate

Rate (/10y)	29.531568	MG/M3/Decade

III. Pearson's r Correlation Coefficient

Pearsons r	0.2313
Result	Weak Correlation

IV. Least-Squares Rank Regression

(Non-parametric Trend Analysis +/-)

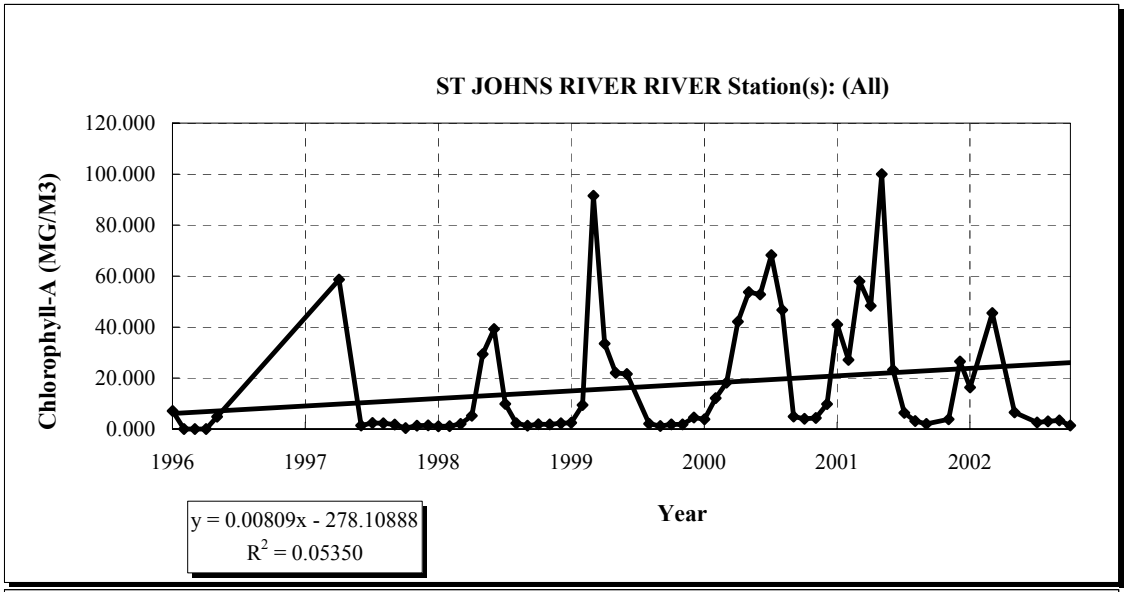
Slope	0.4093727	19.78601399	Intercept
SE slope	0.1140302	4.394478902	SE intercept
r-square	0.1676245	17.64798848	SE y-est.
F value	12.888377	64	Sample N
SS regress	4014.1042	19932.89583	

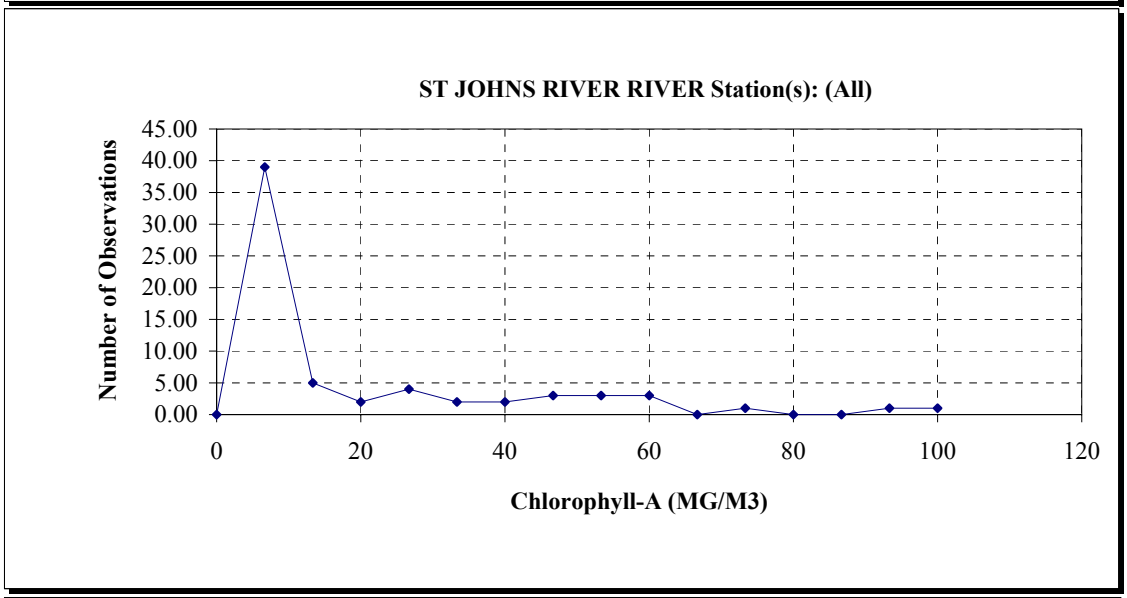
Slope Significance	P-value	0.000641263
Result	Slope different than 0	

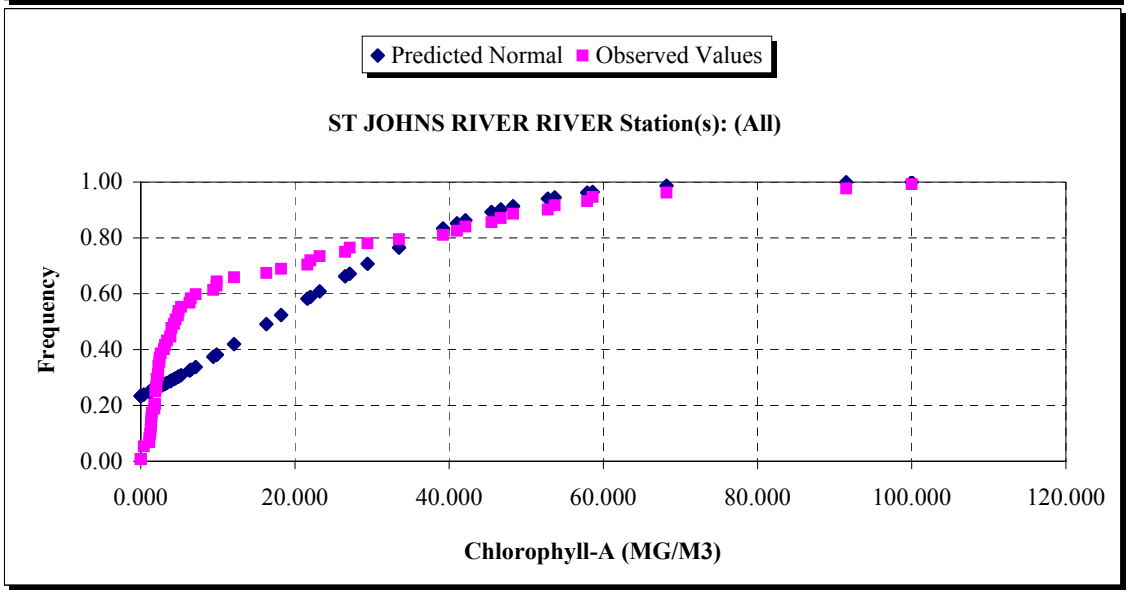
V. Rank Correlation

(Non-parametric Test of Association)

	rho	rho critical
Pearson (ranks)	0.4094	0.2040
Result:	Significant association	


ST JOHNS RIVER RIVER Station(s): (All)
Chlorophyll-A (MG/M3)
120.000
100.000
80.000
60.000
40.000
20.000
0.000
1996
1997
1998
1999
2000
2001
2002
Year
y = 0.00809x - 278.10888
R2 = 0.05350


ST JOHNS RIVER RIVER Station(s): (All)
Number of Observations
45.00
40.00
35.00
30.00
25.00
20.00
15.00
10.00
5.00
0.00
0
20
40
60
80
100
120
Chlorophyll-A (MG/M3)


Predicted Normal
Observed Values
ST JOHNS RIVER RIVER Station(s): (All)
Frequency
1.00
0.80
0.60
0.40
0.20
0.00
0.000
20.000
40.000
60.000
80.000
100.000
120.000
Chlorophyll-A (MG/M3)

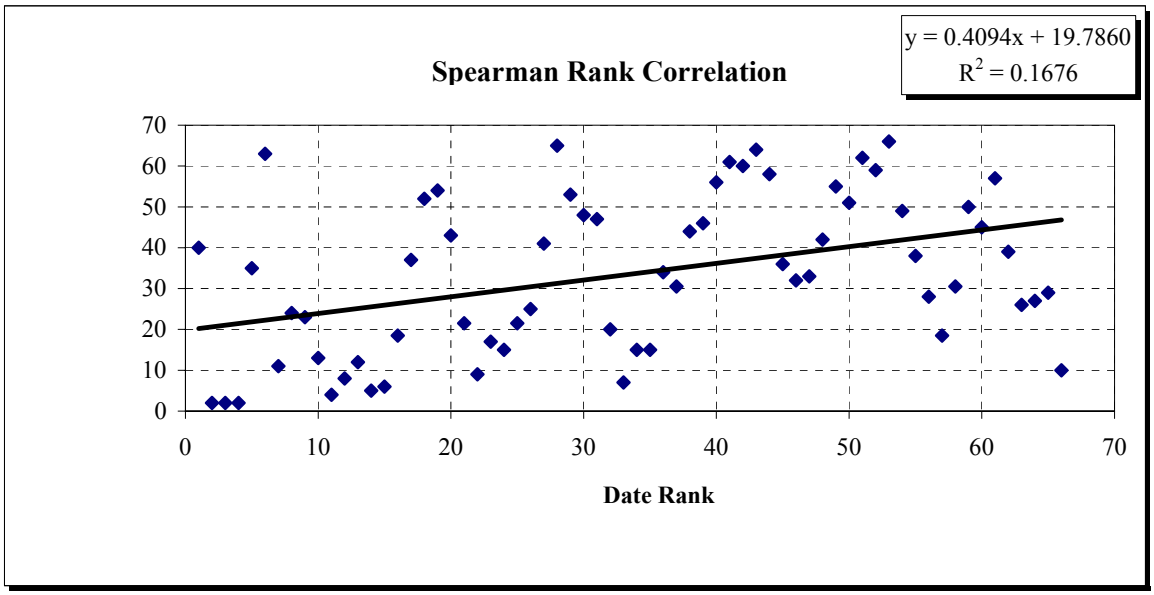


Table of Mean Period of Record Chlorophyll-A (MG/M3)

			95% Confidence Interval		
Year	**Median**	**Annual Ave**	**Lower**	**Upper**	**# Months**
1996	0.0100	2.3920	-0.5552	5.3392	5
1997	2.0285	11.1412	-7.4714	29.7537	6
1998	1.9475	8.0092	0.8193	15.1991	12
1999	2.4500	17.2350	1.2801	33.1899	11
2000	15.1500	26.0721	12.1344	40.0098	12
2001	23.2000	29.3736	11.3358	47.4115	11
2002	3.8400	12.1100	2.2981	21.9219	9

Station Summary	
Station ID	**Samples collected**
OW-SJR-1	72
SJR-OLH	2
Grand Total	74

Total Samples in Raw Data	
Total	85

Quality Assurance Codes Omitted	
Code	**Samples omitted**
Q	9
Q13	1
Q2	1
Grand Total	11

Water Quality Reports

ST JOHNS RIVER RIVER Station(s): (All)
Mean Dissolved Oxygen (MG/L) 1996 to 2002
Storet Number 300

Summary

I. Descriptive Statistics

	Start	End
Dates	3/1/1996	12/1/2002
	Average	Std Dev
Mean	6.5523	0.9270
	lower	upper
95 % C.I.	6.3425	6.7621
	Period of Record	
1st Quartile	5.6800	
Median	6.5900	
2nd Quartile	7.9250	

	1998-2002	
Sample Size	Average	Std Dev
53.00	6.34	2.10
Median	6.5600	
1st Quartile	5.4700	
2nd Quartile	7.6600	

Testing Assumptions

I. Skewness

Statistic	-0.2959

II. Kurtosis

Statistic	0.1398

III. KS Test - Normality

N	75
Critical Dmax	0.1024
Dmax	0.0977
Result	Can't reject Normality

Quality Assurance/Quality Control

QA for
ST JOHNS RIVER RIV Dissolved Oxygen

All J,Q,T,V,!, #, and Y were omitted
Remark Codes in this data set

	7
(blank)	204
Grand Total	211

Seasonality (Oct-May vs June-Sept)

I. Descriptive Statistics

	Wet (J-S)	Dry (O-M)
N	24	51
Mean	5.3704	7.1085
SD	1.9063	1.9256
1st Quartile	3.8838	6.0383
Median	5.7270	7.1400
2nd Quartile	6.5900	8.4450

II. Parametric Statistical Test

Two Sample	t-statistic	P-value
t-test	0.0006	0.9995
Result	No Seasonality	

Trend Analysis

I. Least-Squares Regression

Slope	-0.0005798	27.59043754	Intercept
SE slope	0.0003351	12.16379778	SE intercept
r-square	0.0393795	2.046499106	SE y-est.
F value	2.9925484	73	Sample N
SS regress	12.533267	305.7355771	

Slope Significance	P-value	0.087874523
Result	Slope not greater than 0	

II. Decadal Rate Change Estimate

Rate (/10y)	-2.1161374	MG/L/Decade

III. Pearson's r Correlation Coefficient

Pearsons r	-0.1984
Result	Weak Correlation

IV. Least-Squares Rank Regression

(Non-parametric Trend Analysis +/-)

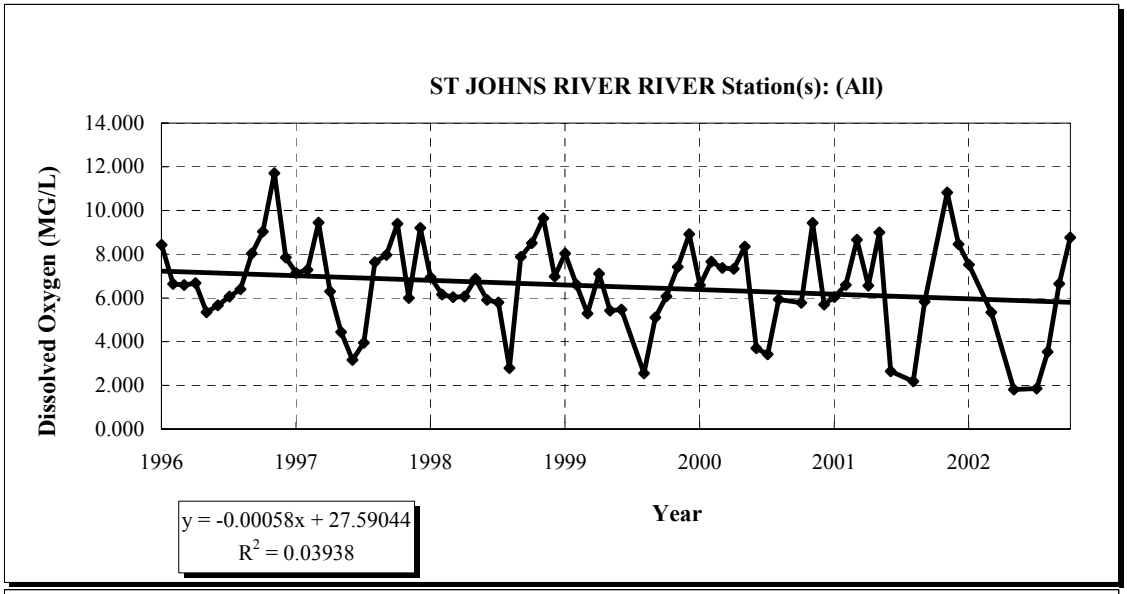
Slope	-0.1546373	43.87621622	Intercept
SE slope	0.1156325	5.057074882	SE intercept
r-square	0.023913	21.6791577	SE y-est.
F value	1.7884173	73	Sample N
SS regress	840.53087	34308.96913	

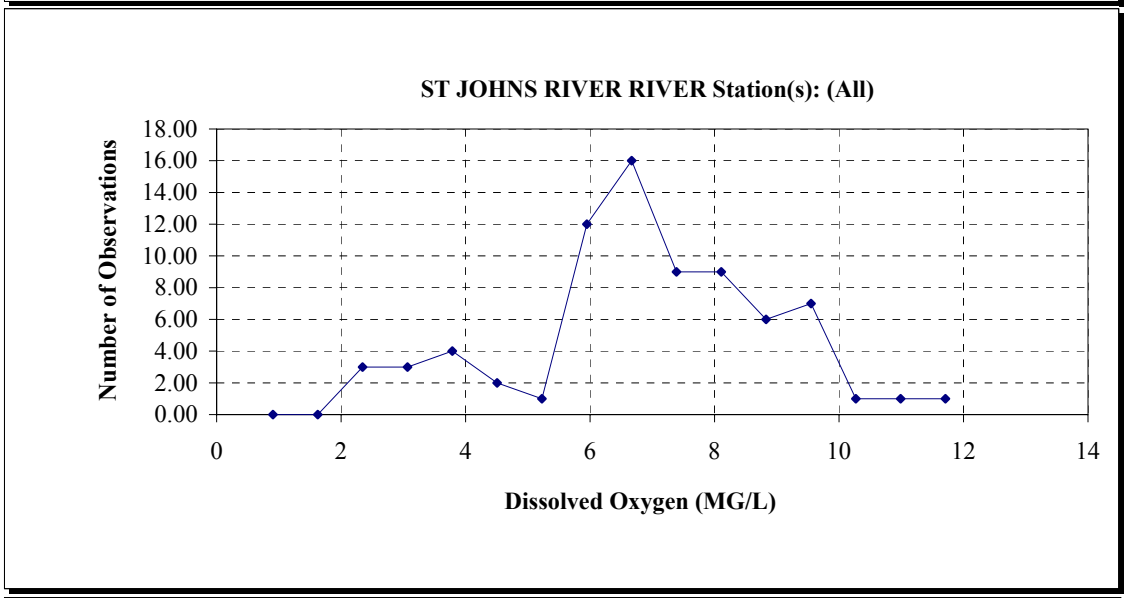
Slope Significance	P-value	0.185271199
Result	Slope equivalent to 0	

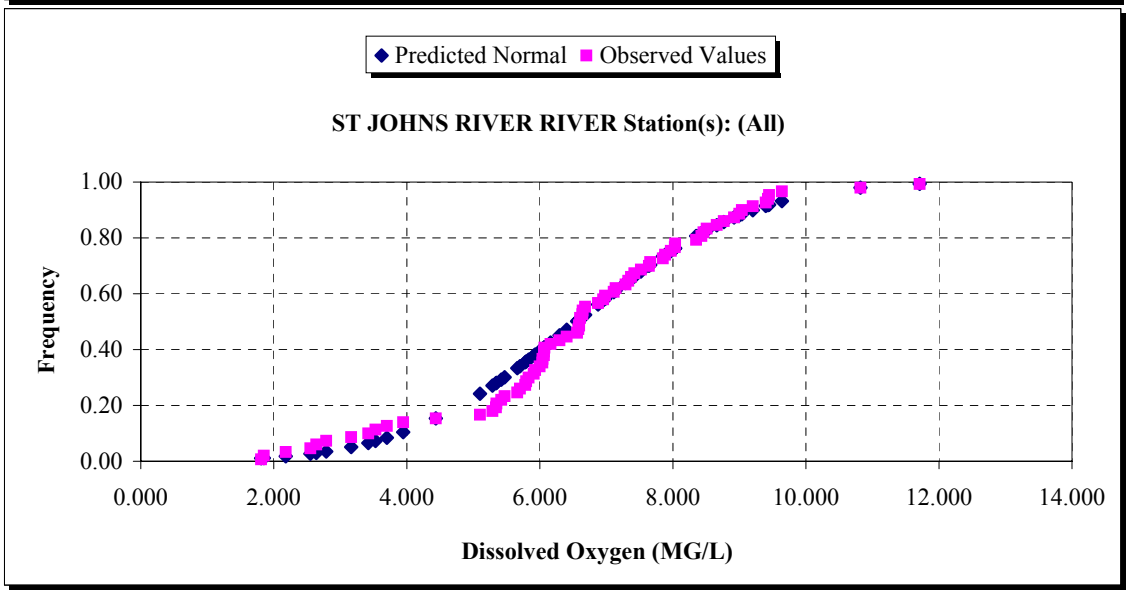
V. Rank Correlation

(Non-parametric Test of Association)

	rho	rho critical
Pearson (ranks)	-0.1546	0.1912
Result:	No significant association	


ST JOHNS RIVER RIVER Station(s): (All)
Dissolved Oxygen (MG/L)
14.000
12.000
10.000
8.000
6.000
4.000
2.000
0.000
1996
1997
1998
1999
2000
2001
2002
Year
y = -0.00058x + 27.59044
R2 = 0.03938


ST JOHNS RIVER RIVER Station(s): (All)
Number of Observations
18.00
16.00
14.00
12.00
10.00
8.00
6.00
4.00
2.00
0.00
0
2
4
6
8
10
12
14
Dissolved Oxygen (MG/L)


Predicted Normal
Observed Values
ST JOHNS RIVER RIVER Station(s): (All)
Frequency
1.00
0.80
0.60
0.40
0.20
0.00
0.000
2.000
4.000
6.000
8.000
10.000
12.000
14.000
Dissolved Oxygen (MG/L)

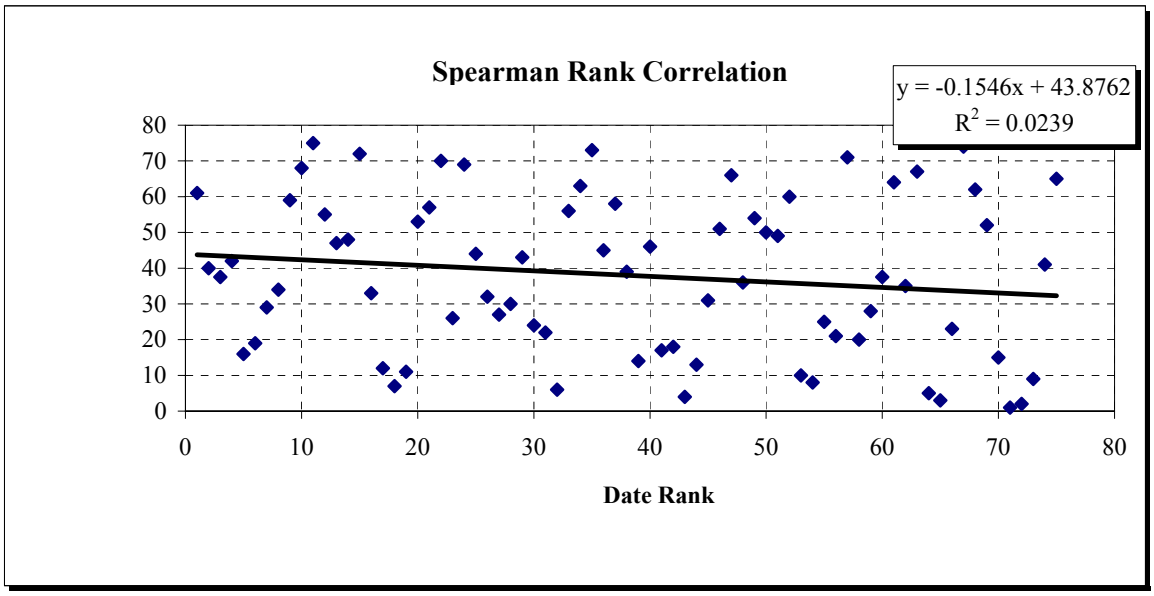


Table of Mean Period of Record Dissolved Oxygen (MG/L)

			95% Confidence Interval		
Year	**Median**	**Annual Ave**	**Lower**	**Upper**	**# Months**
1996	6.6150	6.8885	6.1349	7.6420	10
1997	7.4640	7.1899	5.7961	8.5837	12
1998	6.1112	6.5136	5.5952	7.4320	12
1999	6.0700	6.2058	5.1273	7.2843	11
2000	7.3300	6.5873	5.5466	7.6279	11
2001	6.3000	6.2630	4.7475	7.7785	10
2002	6.6450	6.0822	4.0045	8.1599	9

Station Summary	
Station ID	**Samples collected**
OW-SJR-1	209
SJR-OLH	2
Grand Total	211

Total Samples in Raw Data	
Total	213

Quality Assurance Codes Omitted	
Code	**Samples omitted**
J	2
Grand Total	2

Water Quality Reports

ST JOHNS RIVER RIVER Station(s): (All)
Mean Total Nitrogen - calculated (MG/L as N) 1996 to 2002
Storet Number 600

Summary

I. Descriptive Statistics

	Start	End
Dates	3/1/1996	12/1/2002
	Average	Std Dev
Mean	1.6770	0.2015
	lower	upper
95 % C.I.	1.6314	1.7226
	Period of Record	
1st Quartile	1.3195	
Median	1.5370	
2nd Quartile	1.8595	

1998-2002

Sample Size	Average	Std Dev
54.00	1.81	0.55

Median	1.6460
1st Quartile	1.4341
2nd Quartile	2.0616

Testing Assumptions

I. Skewness

Statistic	1.4599

II. Kurtosis

Statistic	1.9570

III. KS Test - Normality

N	75
Critical Dmax	0.1024
Dmax	0.1635
Result	Reject Normality

Quality Assurance/Quality Control

QA for
ST JOHNS RIVER RIV Total Nitrogen - calculated

All J,Q,T,V,!, #, and Y were omitted
Remark Codes in this data set

	5
T	2
T	11
W	4
(blank)	61
Grand Total	83

Seasonality (Oct-May vs June-Sept)

I. Descriptive Statistics

	Wet (J-S)	Dry (O-M)
N	25	50
Mean	1.8061	1.6124
SD	0.6674	0.4324
1st Quartile	1.3140	1.3257
Median	1.5840	1.5230
2nd Quartile	2.0630	1.7987

II. Parametric Statistical Test

Two Sample	t-statistic	P-value
t-test	0.1958	0.8453
Result	No Seasonality	

Trend Analysis

I. Least-Squares Regression

Slope	0.0003431	-10.7804297	Intercept
SE slope	7.785E-05	2.827010884	SE intercept
r-square	0.2101703	0.470683876	SE y-est.
F value	19.424982	73	Sample N
SS regress	4.3034748	16.17266168	

Slope Significance	P-value	3.53092E-05
Result	Slope greater than 0	

II. Decadal Rate Change Estimate

Rate (/10y)	1.2524337	MG/L as N/Decade

III. Pearson's r Correlation Coefficient

Pearsons r	0.4584
Result	Weak Correlation

IV. Least-Squares Rank Regression

(Non-parametric Trend Analysis +/-)

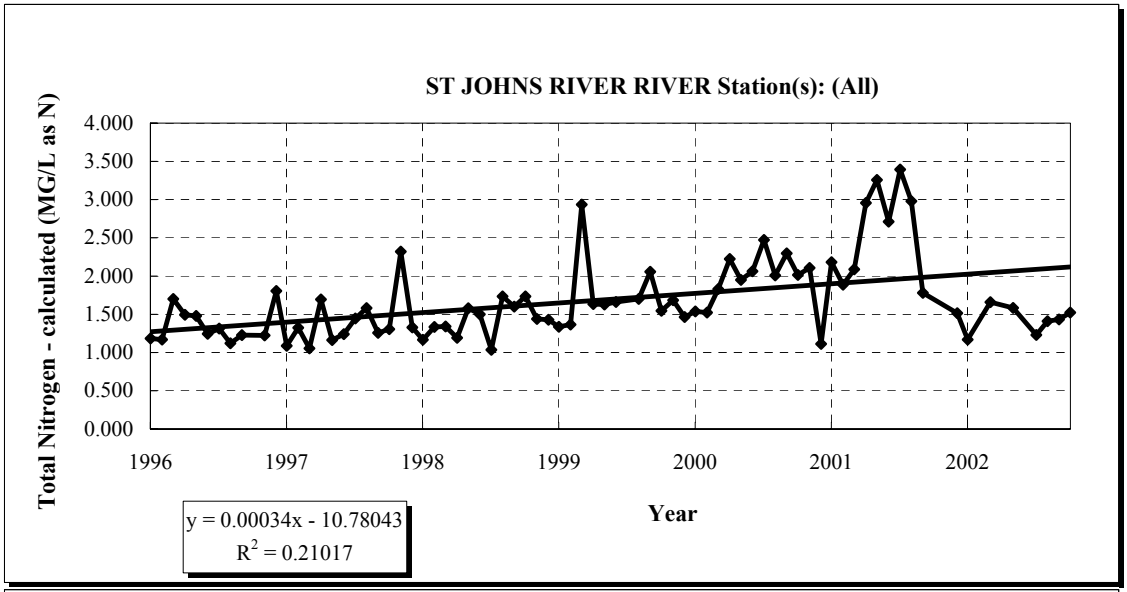
Slope	0.499175	19.03135135	Intercept
SE slope	0.1014163	4.435344832	SE intercept
r-square	0.2491756	19.01386519	SE y-est.
F value	24.226468	73	Sample N
SS regress	8758.5239	26391.47607	

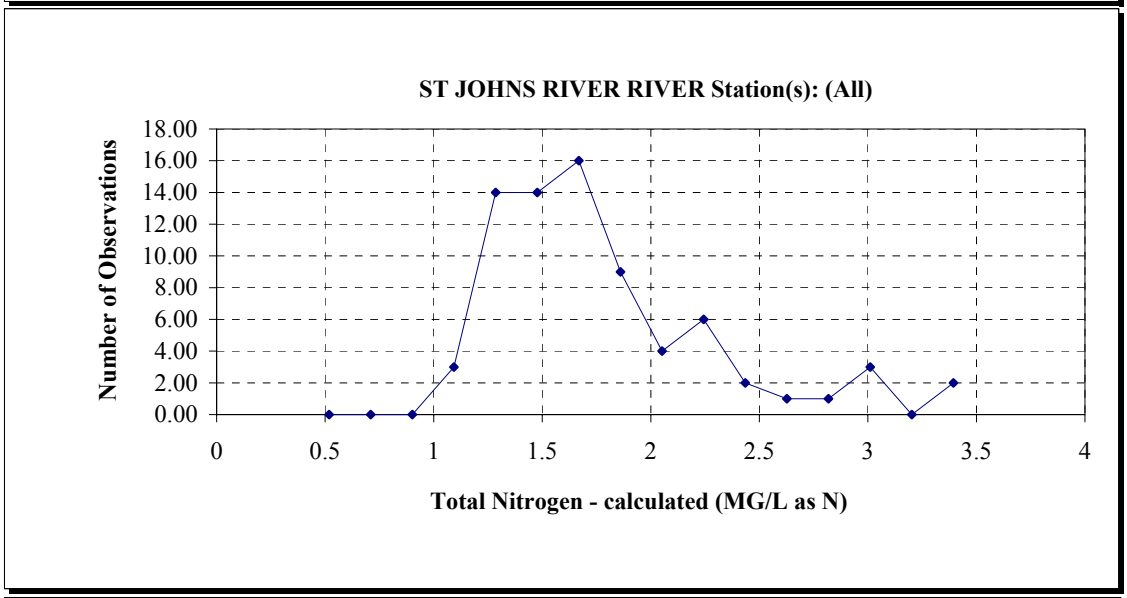
Slope Significance	P-value	5.14854E-06
Result	Slope different than 0	

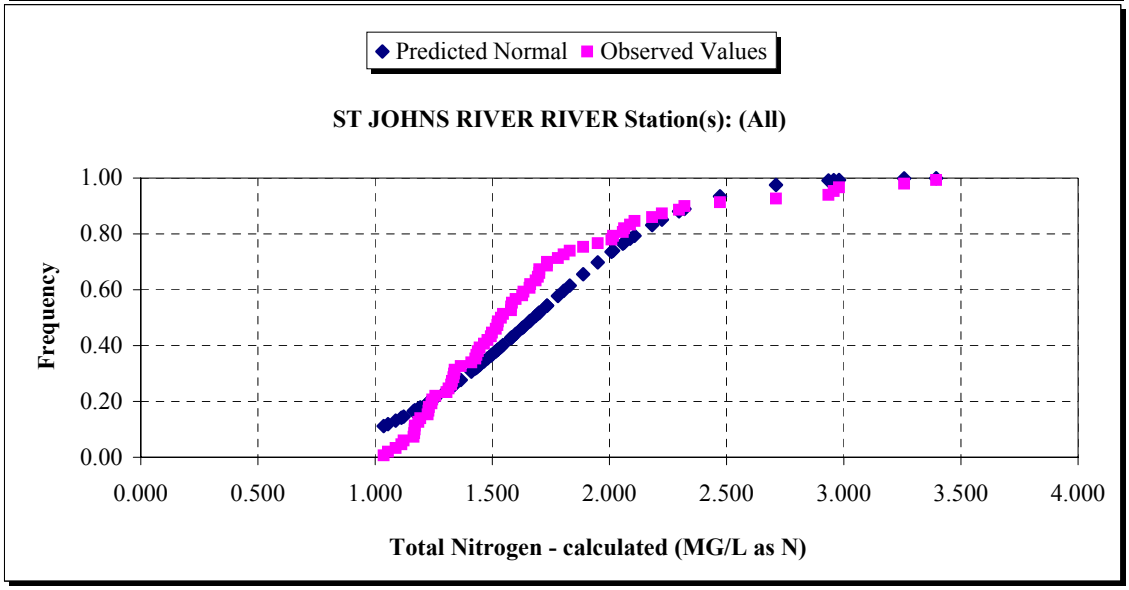
V. Rank Correlation

(Non-parametric Test of Association)

	rho	rho critical
Pearson (ranks)	0.4992	0.1912
Result:	Significant association	


ST JOHNS RIVER RIVER Station(s): (All)
Total Nitrogen - calculated (MG/L as N)
4.000
3.500
3.000
2.500
2.000
1.500
1.000
0.500
0.000
1996
1997
1998
1999
2000
2001
2002
Year
y = 0.00034x - 10.78043
R2 = 0.21017


ST JOHNS RIVER RIVER Station(s): (All)
Number of Observations
18.00
16.00
14.00
12.00
10.00
8.00
6.00
4.00
2.00
0.00
0
0.5
1
1.5
2
2.5
3
3.5
4
Total Nitrogen - calculated (MG/L as N)


Predicted Normal
Observed Values
ST JOHNS RIVER RIVER Station(s): (All)
Frequency
1.00
0.80
0.60
0.40
0.20
0.00
0.000
0.500
1.000
1.500
2.000
2.500
3.000
3.500
4.000
Total Nitrogen - calculated (MG/L as N)

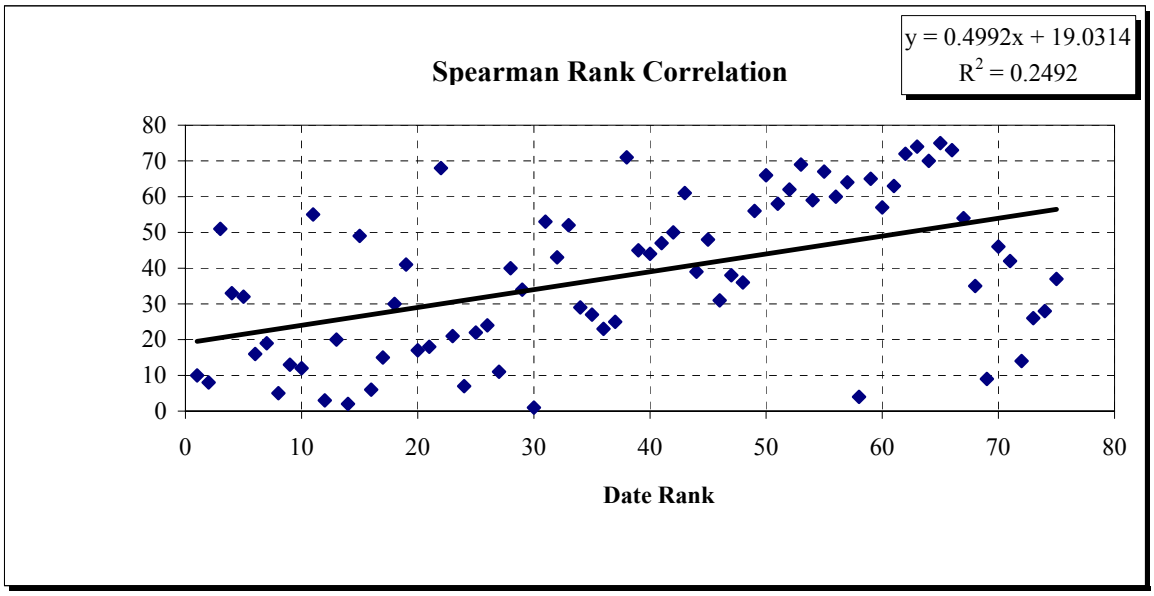


Table of Mean Period of Record Total Nitrogen - calculated (MG/L as N)

			95% Confidence Interval		
Year	**Median**	**Annual Ave**	**Lower**	**Upper**	**# Months**
1996	1.2440	1.3263	1.2008	1.4518	9
1997	1.2810	1.3488	1.2147	1.4829	12
1998	1.4195	1.4887	1.2943	1.6832	12
1999	1.6280	1.7029	1.4338	1.9720	11
2000	1.9795	1.9225	1.7394	2.1057	12
2001	2.1820	2.4052	1.9872	2.8232	11
2002	1.4737	1.4407	1.3238	1.5576	8

Station Summary	
Station ID	**Samples collected**
OW-SJR-1	81
SJR-OLH	2
Grand Total	83

Total Samples in Raw Data	
Total	85

Quality Assurance Codes Omitted	
Code	**Samples omitted**
Q	1
Q4 Q4	1
Grand Total	2

Water Quality Reports

ST JOHNS RIVER RIVER Station(s): (All)
Mean Total Organic Carbon (MG/L as C) 1996 to 2002
Storet Number 680

Summary

I. Descriptive Statistics

	Start	End
Dates	3/1/1996	12/1/2002
	Average	Std Dev
Mean	22.8086	1.7150
	lower	upper
95 % C.I.	22.4097	23.2075
	Period of Record	
1st Quartile	18.8500	
Median	21.4000	
2nd Quartile	25.2000	

	1998-2002	
Sample Size	Average	Std Dev
51.00	23.29	5.43
Median	22.5000	
1st Quartile	18.6500	
2nd Quartile	27.0750	

Testing Assumptions

I. Skewness

Statistic	0.9665

II. Kurtosis

Statistic	0.3050

III. KS Test - Normality

N	71
Critical Dmax	0.1055
Dmax	0.1180
Result	Reject Normality

Quality Assurance/Quality Control

QA for
ST JOHNS RIVER RIV Total Organic Carbon

All J,Q,T,V,!, #, and Y were omitted
Remark Codes in this data set

	7
(blank)	72
Grand Total	79

Seasonality (Oct-May vs June-Sept)

I. Descriptive Statistics

	Wet (J-S)	Dry (O-M)
N	25	46
Mean	22.5140	22.9687
SD	6.3143	4.3340
1st Quartile	17.8000	19.3250
Median	20.0000	22.2500
2nd Quartile	24.8000	25.8500

II. Parametric Statistical Test

Two Sample	t-statistic	P-value
t-test	0.7498	0.4559
Result	No Seasonality	

Trend Analysis

I. Least-Squares Regression

Slope	0.0033681	-99.502872	Intercept
SE slope	0.0007513	27.29021504	SE intercept
r-square	0.2255453	4.50165989	SE y-est.
F value	20.094948	69	Sample N
SS regress	407.22295	1398.280982	

Slope Significance	P-value	2.85572E-05
Result	Slope greater than 0	

II. Decadal Rate Change Estimate

Rate (/10y)	12.293384	MG/L as C/Decade

III. Pearson's r Correlation Coefficient

Pearsons r	0.4749
Result	Weak Correlation

IV. Least-Squares Rank Regression

(Non-parametric Trend Analysis +/-)

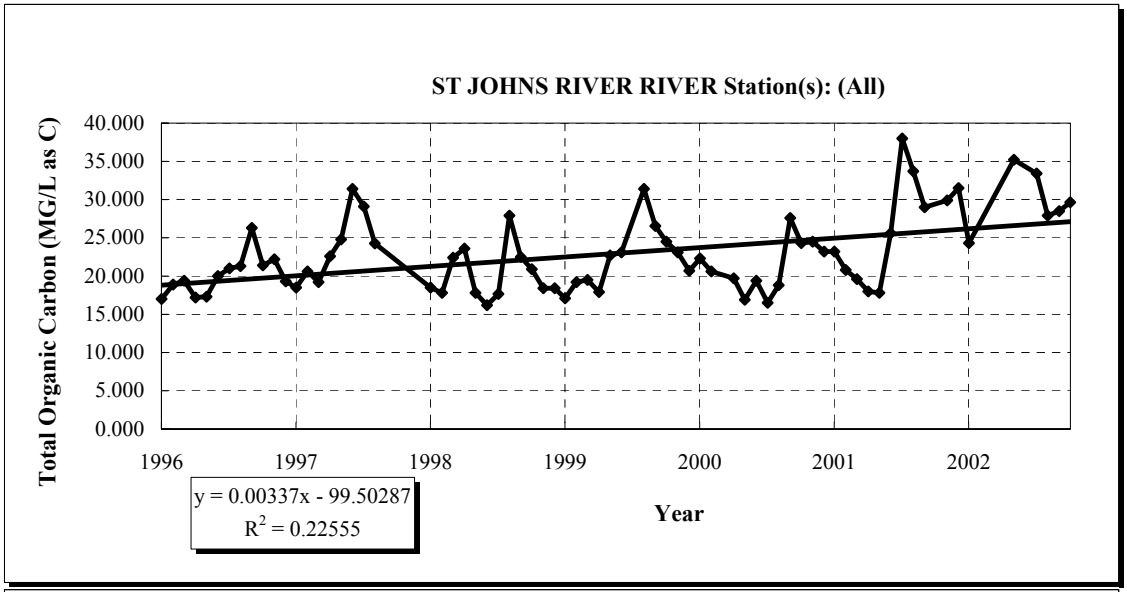
Slope	0.4398726	20.16458753	Intercept
SE slope	0.1080991	4.477966605	SE intercept
r-square	0.1935301	18.66706451	SE y-est.
F value	16.558056	69	Sample N
SS regress	5769.8085	24043.69152	

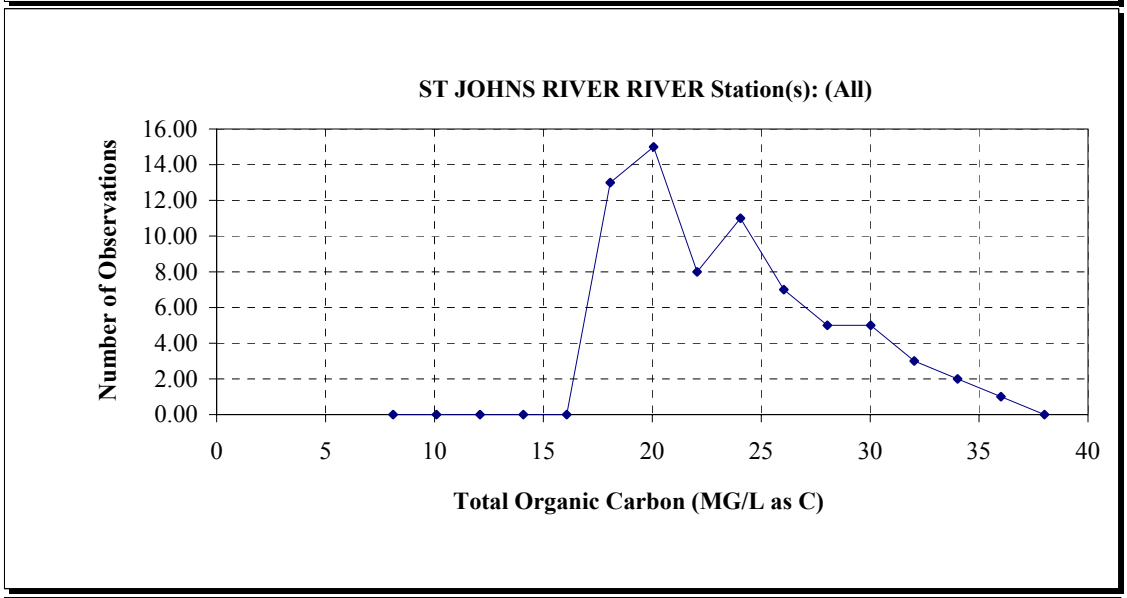
Slope Significance	P-value	0.000123669
Result	Slope different than 0	

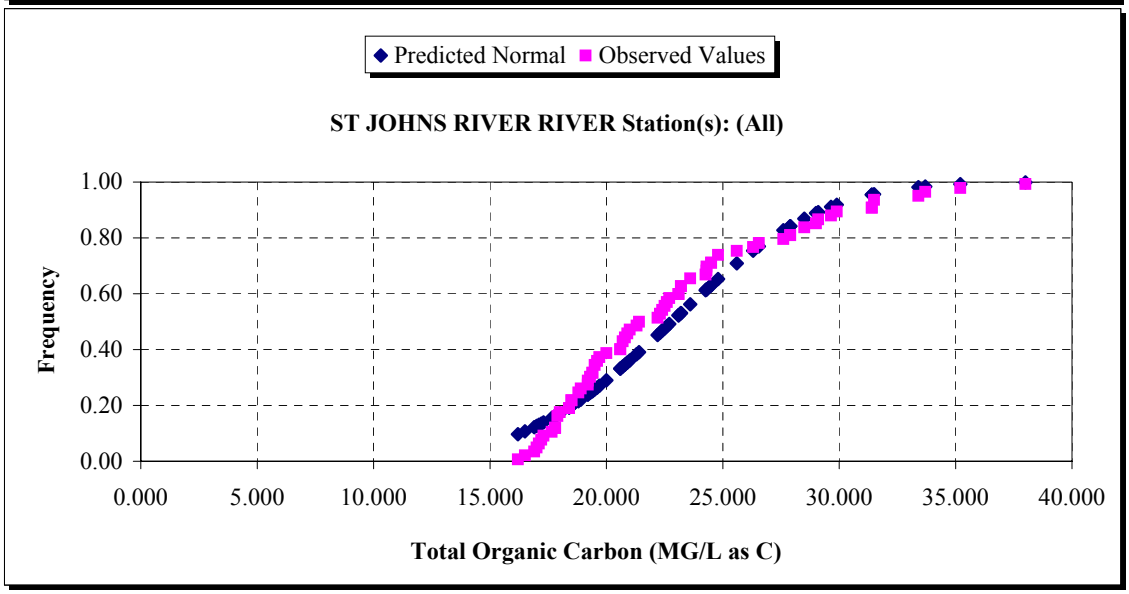
V. Rank Correlation

(Non-parametric Test of Association)

	rho	rho critical
Pearson (ranks)	0.4399	0.1966
Result:	Significant association	


ST JOHNS RIVER RIVER Station(s): (All)
Total Organic Carbon (MG/L as C)
40.000
35.000
30.000
25.000
20.000
15.000
10.000
5.000
0.000
1996
1997
1998
1999
2000
2001
2002
y = 0.00337x - 99.50287
R2 = 0.22555
Year


ST JOHNS RIVER RIVER Station(s): (All)
Number of Observations
16.00
14.00
12.00
10.00
8.00
6.00
4.00
2.00
0.00
0
5
10
15
20
25
30
35
40
Total Organic Carbon (MG/L as C)


Predicted Normal
Observed Values
ST JOHNS RIVER RIVER Station(s): (All)
Frequency
1.00
0.80
0.60
0.40
0.20
0.00
0.000
5.000
10.000
15.000
20.000
25.000
30.000
35.000
40.000
Total Organic Carbon (MG/L as C)

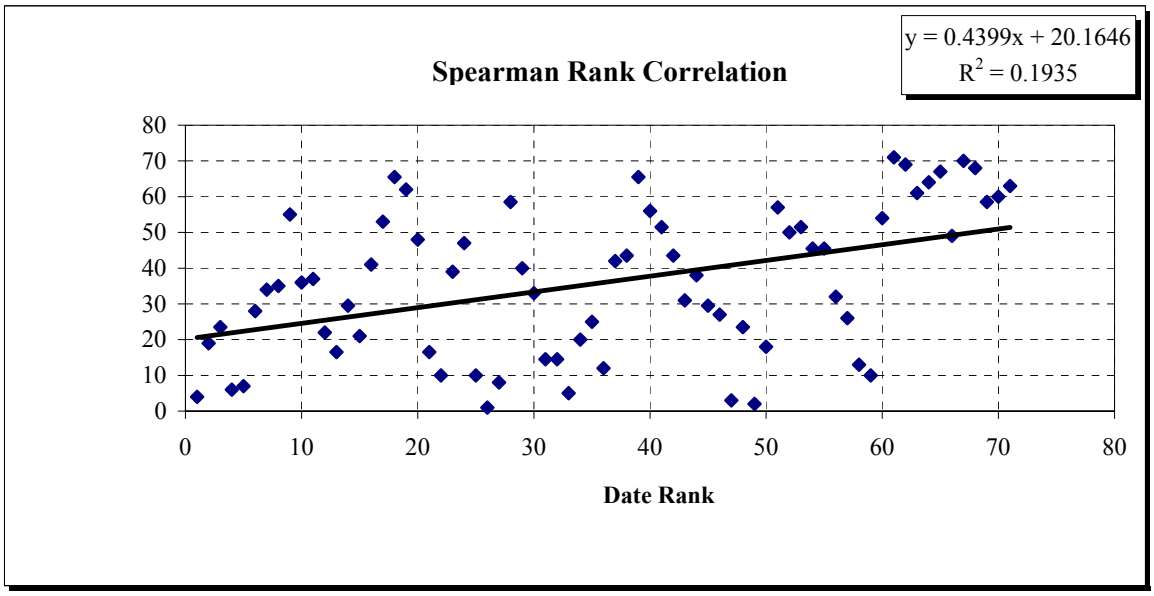


Table of Mean Period of Record Total Organic Carbon (MG/L as C)

			95% Confidence Interval		
Year	**Median**	**Annual Ave**	**Lower**	**Upper**	**# Months**
1996	19.7000	19.9800	18.2510	21.7090	10
1997	22.4000	23.1960	20.5249	25.8671	10
1998	19.7000	20.5250	18.2872	22.7628	10
1999	19.5000	21.7045	19.0824	24.3267	11
2000	20.6000	20.9000	18.9684	22.8316	11
2001	23.2000	24.8545	21.0468	28.6623	11
2002	29.7750	30.0438	27.6994	32.3881	8

Station Summary	
Station ID	**Samples collected**
OW-SJR-1	77
SJR-OLH	2
Grand Total	79

Total Samples in Raw Data	
Total	84

Quality Assurance Codes Omitted	
Code	**Samples omitted**
Q20	1
Q3	1
Q37	1
Q45	1
Q56	1
Grand Total	5

Water Quality Reports

ST JOHNS RIVER RIVER Station(s): (All)
Mean Total Phosphorus-T (MG/L as P) 1996 to 2002
Storet Number 665

Summary

I. Descriptive Statistics

	Start	End
Dates	3/1/1996	12/1/2002
	Average	Std Dev
Mean	0.0902	0.0221
	lower	upper
95 % C.I.	0.0852	0.0952
	Period of Record	
1st Quartile	0.0509	
Median	0.0720	
2nd Quartile	0.1085	

	1998-2002	
Sample Size	Average	Std Dev
54.00	0.10	0.07
Median	0.0748	
1st Quartile	0.0572	
2nd Quartile	0.1258	

Testing Assumptions

I. Skewness

Statistic	3.7147

II. Kurtosis

Statistic	19.9432

III. KS Test - Normality

N	76
Critical Dmax	0.1023
Dmax	0.2016
Result	Reject Normality

Quality Assurance/Quality Control

QA for
ST JOHNS RIVER RIV Total Phosphorus-T

All J,Q,T,V,!, #, and Y were omitted
Remark Codes in this data set

	7
(blank)	77
Grand Total	84

Seasonality (Oct-May vs June-Sept)

I. Descriptive Statistics

	Wet (J-S)	Dry (O-M)
N	25	51
Mean	0.1096	0.0807
SD	0.0524	0.0686
1st Quartile	0.0710	0.0465
Median	0.1020	0.0670
2nd Quartile	0.1320	0.0870

II. Parametric Statistical Test

Two Sample	t-statistic	P-value
t-test	0.0469	0.9627
Result	No Seasonality	

Trend Analysis

I. Least-Squares Regression

Slope	2.018E-05	-0.64218759	Intercept
SE slope	1.042E-05	0.378284411	SE intercept
r-square	0.0482295	0.063695797	SE y-est.
F value	3.7498319	74	Sample N
SS regress	0.0152136	0.30022944	

Slope Significance	P-value	0.056631482
Result	Slope not greater than 0	

II. Decadal Rate Change Estimate

Rate (/10y)	0.0736568	MG/L as P/Decade

III. Pearson's r Correlation Coefficient

Pearsons r	0.2196
Result	Weak Correlation

IV. Least-Squares Rank Regression

(Non-parametric Trend Analysis +/-)

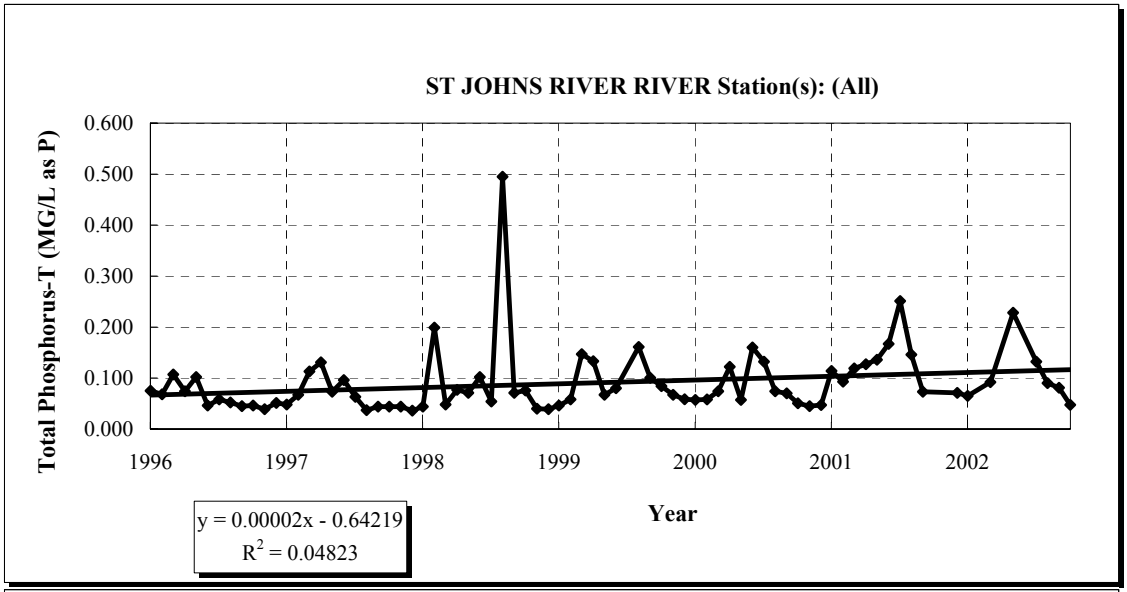
Slope	0.3490089	25.06315789	Intercept
SE slope	0.1089091	4.825913898	SE intercept
r-square	0.1218638	20.82841795	SE y-est.
F value	10.269392	74	Sample N
SS regress	4455.0984	32102.90157	

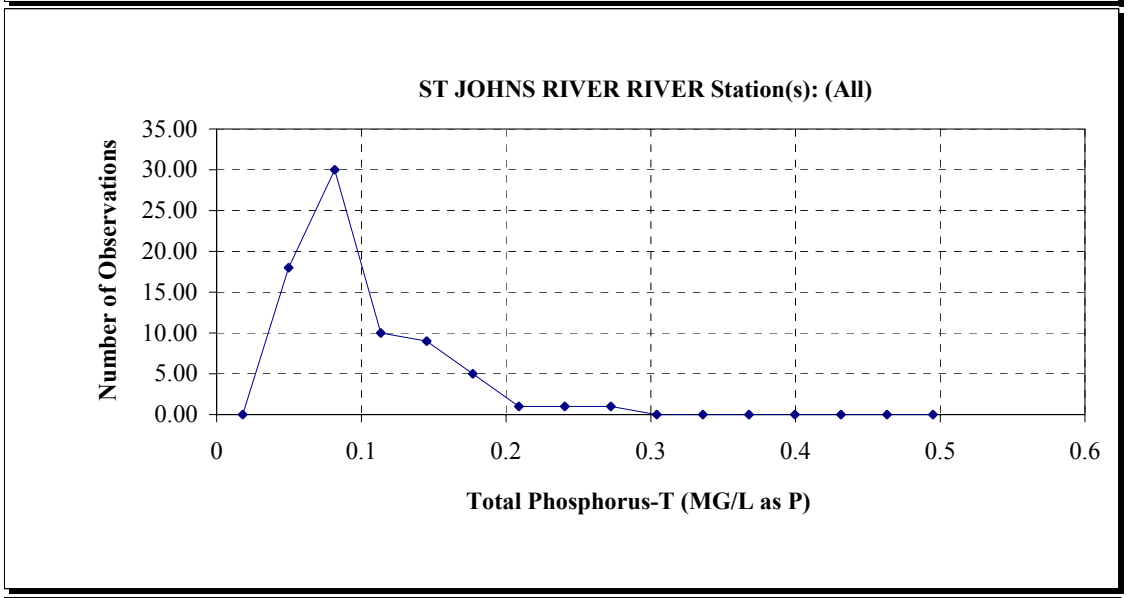
Slope Significance	P-value	0.001996756
Result	Slope different than 0	

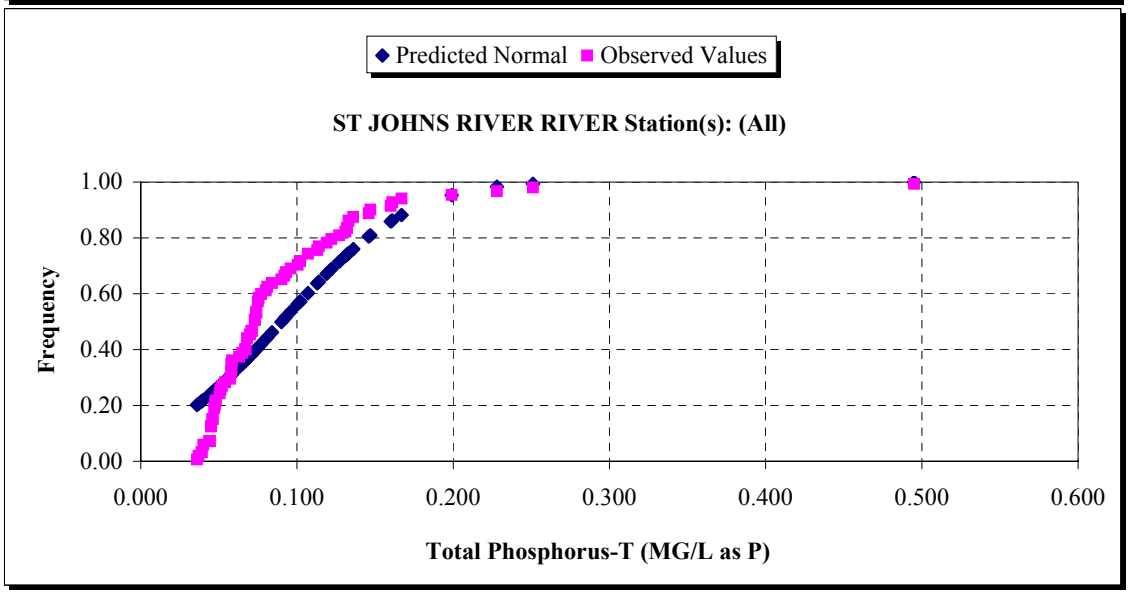
V. Rank Correlation

(Non-parametric Test of Association)

	rho	rho critical
Pearson (ranks)	0.3491	0.1899
Result:	Significant association	


ST JOHNS RIVER RIVER Station(s): (All)
Total Phosphorus-T (MG/L as P)
0.600
0.500
0.400
0.300
0.200
0.100
0.000
1996
1997
1998
1999
2000
2001
2002
Year
y = 0.00002x - 0.64219
R2 = 0.04823


ST JOHNS RIVER RIVER Station(s): (All)
Number of Observations
35.00
30.00
25.00
20.00
15.00
10.00
5.00
0.00
0
0.1
0.2
0.3
0.4
0.5
0.6
Total Phosphorus-T (MG/L as P)


Predicted Normal
Observed Values
ST JOHNS RIVER RIVER Station(s): (All)
Frequency
1.00
0.80
0.60
0.40
0.20
0.00
0.000
0.100
0.200
0.300
0.400
0.500
0.600
Total Phosphorus-T (MG/L as P)

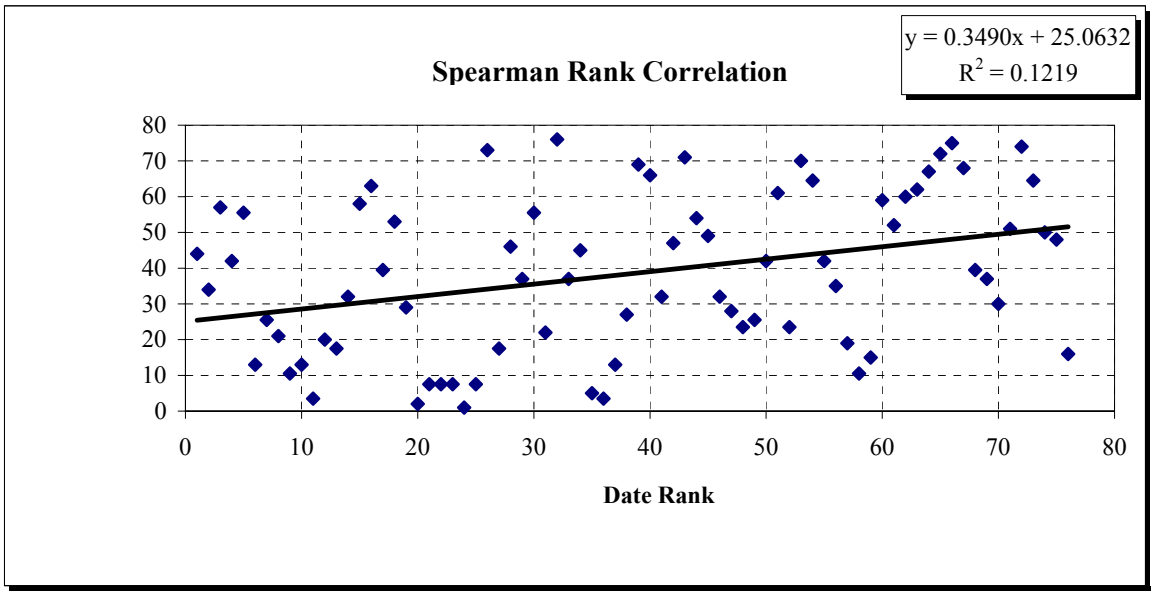


Table of Mean Period of Record Total Phosphorus-T (MG/L as P)

			95% Confidence Interval		
Year	**Median**	**Annual Ave**	**Lower**	**Upper**	**# Months**
1996	0.0630	0.0673	0.0533	0.0813	10
1997	0.0570	0.0672	0.0497	0.0846	12
1998	0.0710	0.1097	0.0368	0.1826	12
1999	0.0800	0.0869	0.0612	0.1125	11
2000	0.0685	0.0817	0.0614	0.1019	12
2001	0.1190	0.1198	0.0852	0.1544	11
2002	0.0855	0.1008	0.0613	0.1403	8

Station Summary	
Station ID	**Samples collected**
OW-SJR-1	82
SJR-OLH	2
Grand Total	84

Total Samples in Raw Data	
Total	85

Quality Assurance Codes Omitted	
Code	**Samples omitted**
Q11	1
Grand Total	1

Water Quality Reports

ST JOHNS RIVER RIVER Station(s): (All)
Mean Total Suspended Solids (MG/L) 1996 to 2002
Storet Number 530

Summary

I. Descriptive Statistics

	Start	End
Dates	4/1/1996	12/1/2002
	Average	Std Dev
Mean	7.8219	1.8077
	lower	upper
95 % C.I.	7.4072	8.2366
	Period of Record	
1st Quartile	5.0000	
Median	5.0000	
2nd Quartile	10.0000	

1998-2002

Sample Size	Average	Std Dev
53.00	8.77	5.45
Median	6.0000	
1st Quartile	5.0000	
2nd Quartile	12.0000	

Testing Assumptions

I. Skewness

Statistic	1.1736

II. Kurtosis

Statistic	0.7291

III. KS Test - Normality

N	73
Critical Dmax	0.1044
Dmax	0.1827
Result	Reject Normality

Quality Assurance/Quality Control

QA for
ST JOHNS RIVER RIV Total Suspended Solids

All J,Q,T,V,!, #, and Y were omitted
Remark Codes in this data set

I	1
T	14
U	21
(blank)	45
Grand Total	81

Seasonality (Oct-May vs June-Sept)

I. Descriptive Statistics

	Wet (J-S)	Dry (O-M)
N	25	48
Mean	9.3200	7.0417
SD	6.8600	4.6194
1st Quartile	5.0000	5.0000
Median	7.0000	5.0000
2nd Quartile	13.0000	9.0000

II. Parametric Statistical Test

Two Sample	t-statistic	P-value
t-test	0.1441	0.8858
Result	No Seasonality	

Trend Analysis

I. Least-Squares Regression

Slope	0.0017315	-55.0439287	Intercept
SE slope	0.0009304	33.78670764	SE intercept
r-square	0.0465105	5.457311145	SE y-est.
F value	3.4633233	71	Sample N
SS regress	103.14554	2114.53939	

Slope Significance	P-value	0.066884528
Result	Slope not greater than 0	

II. Decadal Rate Change Estimate

Rate (/10y)	6.320029	MG/L/Decade

III. Pearson's r Correlation Coefficient

Pearsons r	0.2157
Result	Weak Correlation

IV. Least-Squares Rank Regression

(Non-parametric Trend Analysis +/-)

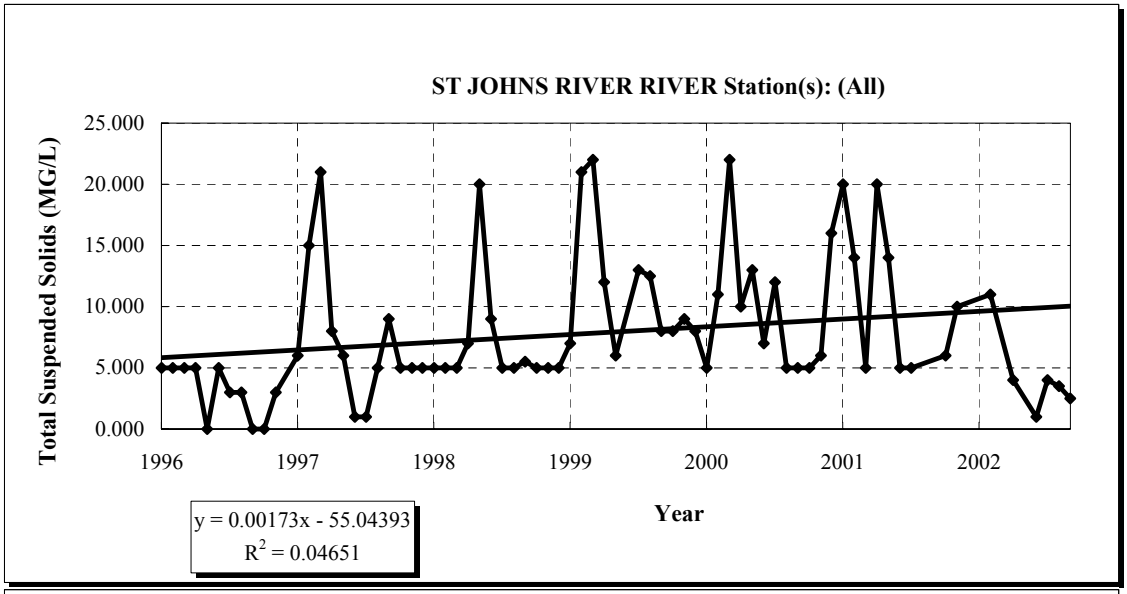
Slope	0.2503857	27.73573059	Intercept
SE slope	0.1126424	4.796238443	SE intercept
r-square	0.0650637	20.27938493	SE y-est.
F value	4.9410037	71	Sample N
SS regress	2032.0048	29198.99518	

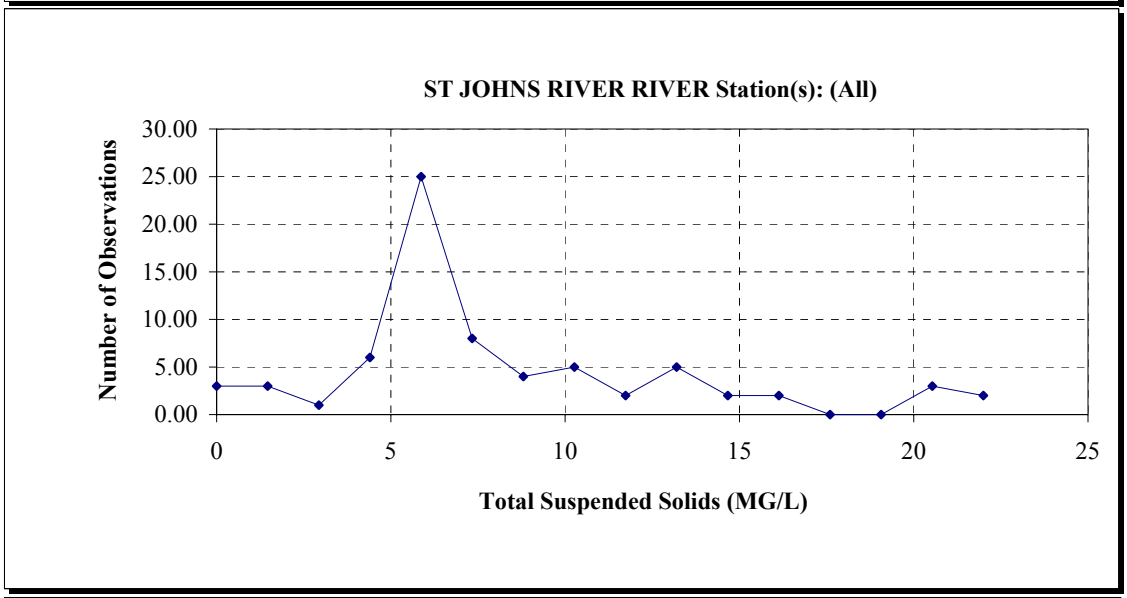
Slope Significance	P-value	0.029412106
Result	Slope different than 0	

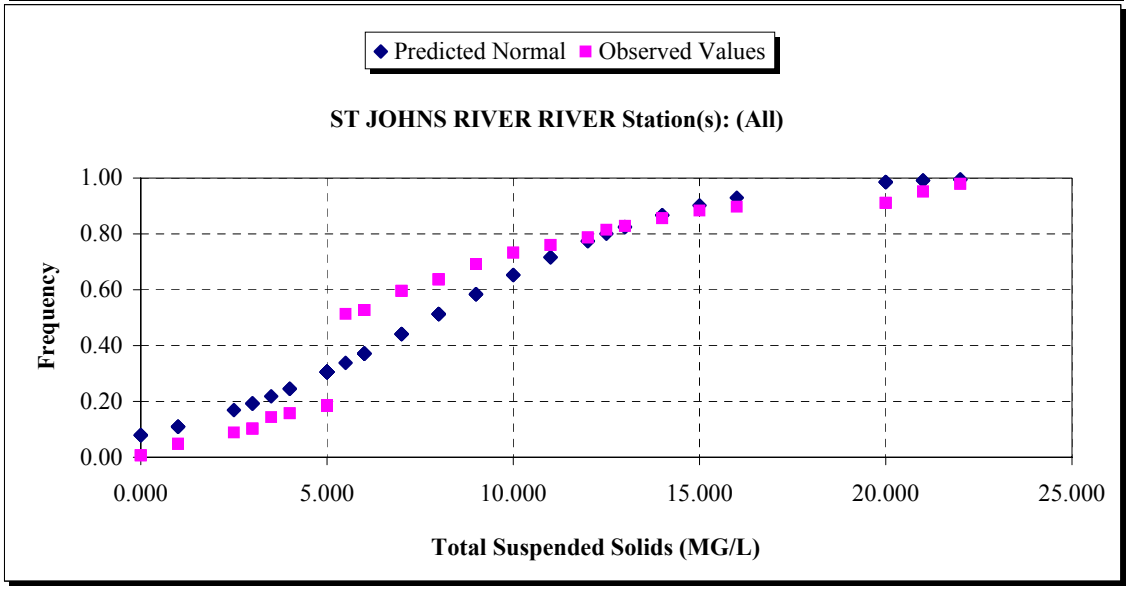
V. Rank Correlation

(Non-parametric Test of Association)

	rho	rho critical
Pearson (ranks)	0.2551	0.1939
Result:	Significant association	


ST JOHNS RIVER RIVER Station(s): (All)
Total Suspended Solids (MG/L)
25.000
20.000
15.000
10.000
5.000
0.000
1996
1997
1998
1999
2000
2001
2002
Year
y = 0.00173x - 55.04393
R2 = 0.04651


ST JOHNS RIVER RIVER Station(s): (All)
Number of Observations
30.00
25.00
20.00
15.00
10.00
5.00
0.00
0
5
10
15
20
25
Total Suspended Solids (MG/L)


Predicted Normal
Observed Values
ST JOHNS RIVER RIVER Station(s): (All)
Frequency
1.00
0.80
0.60
0.40
0.20
0.00
0.000
5.000
10.000
15.000
20.000
25.000
Total Suspended Solids (MG/L)

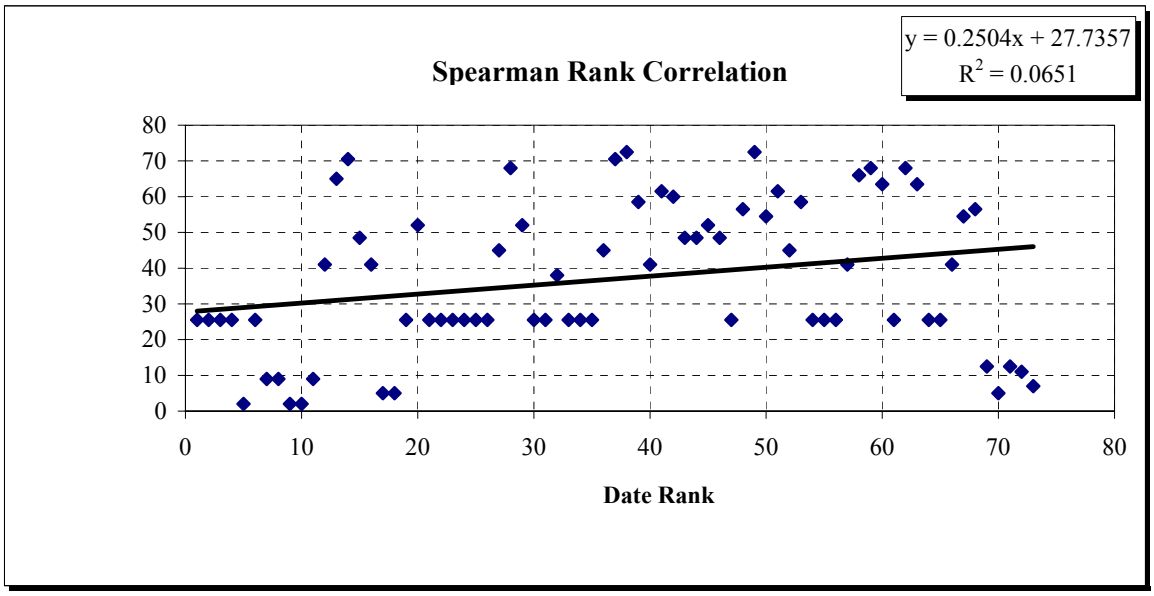


Table of Mean Period of Record Total Suspended Solids (MG/L)

			95% Confidence Interval		
Year	**Median**	**Annual Ave**	**Lower**	**Upper**	**# Months**
1996	5.0000	3.4444	2.0543	4.8346	9
1997	6.0000	6.8182	3.0452	10.5912	11
1998	5.0000	6.7917	4.3389	9.2445	12
1999	8.0000	10.5909	6.9270	14.2548	11
2000	8.5000	9.5833	6.8919	12.2748	12
2001	10.0000	11.0000	7.0046	14.9954	10
2002	4.0000	5.2500	2.7931	7.7069	8

Station Summary	
Station ID	**Samples collected**
OW-SJR-1	79
SJR-OLH	2
Grand Total	81

Total Samples in Raw Data	
Total	85

Quality Assurance Codes Omitted	
Code	**Samples omitted**
Q	2
Q1	1
Q6 T	1
Grand Total	4

Water Quality Reports

ST JOHNS RIVER RIVER Station(s): (All)
Mean Turbidity, Laboratory Nephelometric (NTU) 1996 to 2002
Storet Number 82079

Summary

I. Descriptive Statistics

	Start	End
Dates	3/1/1996	12/1/2002
	Average	Std Dev
Mean	3.2062	1.1463
	lower	upper
95 % C.I.	2.9450	3.4674
	Period of Record	
1st Quartile	1.2250	
Median	1.6750	
2nd Quartile	4.3750	

	1998-2002	
Sample Size	Average	Std Dev
53.00	3.77	3.21
Median	2.0000	
1st Quartile	1.5000	
2nd Quartile	5.9000	

Testing Assumptions

I. Skewness

Statistic	1.6078

II. Kurtosis

Statistic	2.0660

III. KS Test - Normality

N	74
Critical Dmax	0.1029
Dmax	0.2269
Result	Reject Normality

Quality Assurance/Quality Control

QA for
ST JOHNS RIVER RIV Turbidity, Laboratory Nephe

All J,Q,T,V,!, #, and Y were omitted
Remark Codes in this data set

	4
I	3
(blank)	75
Grand Total	82

Seasonality (Oct-May vs June-Sept)

I. Descriptive Statistics

	Wet (J-S)	Dry (O-M)
N	24	50
Mean	4.3521	2.6562
SD	3.0668	2.7691
1st Quartile	1.5500	1.1000
Median	4.0000	1.6000
2nd Quartile	6.8750	2.9375

II. Parametric Statistical Test

Two Sample	t-statistic	P-value
t-test	0.0268	0.9787
Result	No Seasonality	

Trend Analysis

I. Least-Squares Regression

Slope	0.001272	-42.95899	Intercept
SE slope	0.0004794	17.40331659	SE intercept
r-square	0.0890594	2.842665747	SE y-est.
F value	7.0391809	72	Sample N
SS regress	56.881851	581.8138957	

Slope Significance	P-value	0.009805623
Result	Slope greater than 0	

II. Decadal Rate Change Estimate

Rate (/10y)	4.6429671	NTU/Decade

III. Pearson's r Correlation Coefficient

Pearsons r	0.2984
Result	Weak Correlation

IV. Least-Squares Rank Regression

(Non-parametric Trend Analysis +/-)

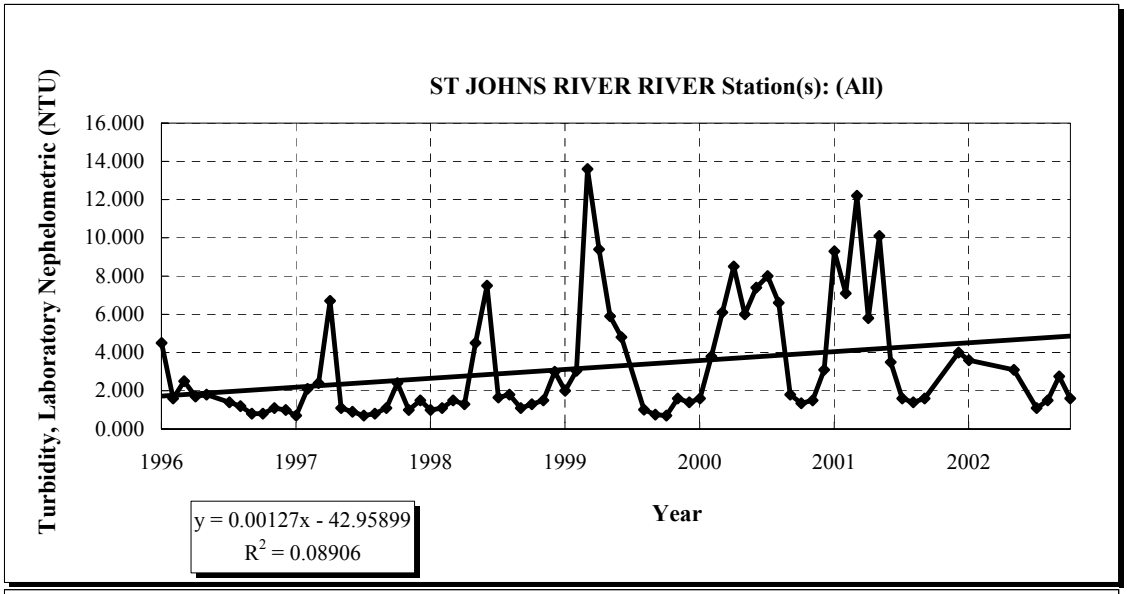
Slope	0.3807923	23.22028878	Intercept
SE slope	0.1088798	4.698890617	SE intercept
r-square	0.1452135	20.00619481	SE y-est.
F value	12.231562	72	Sample N
SS regress	4895.6562	28817.84381	

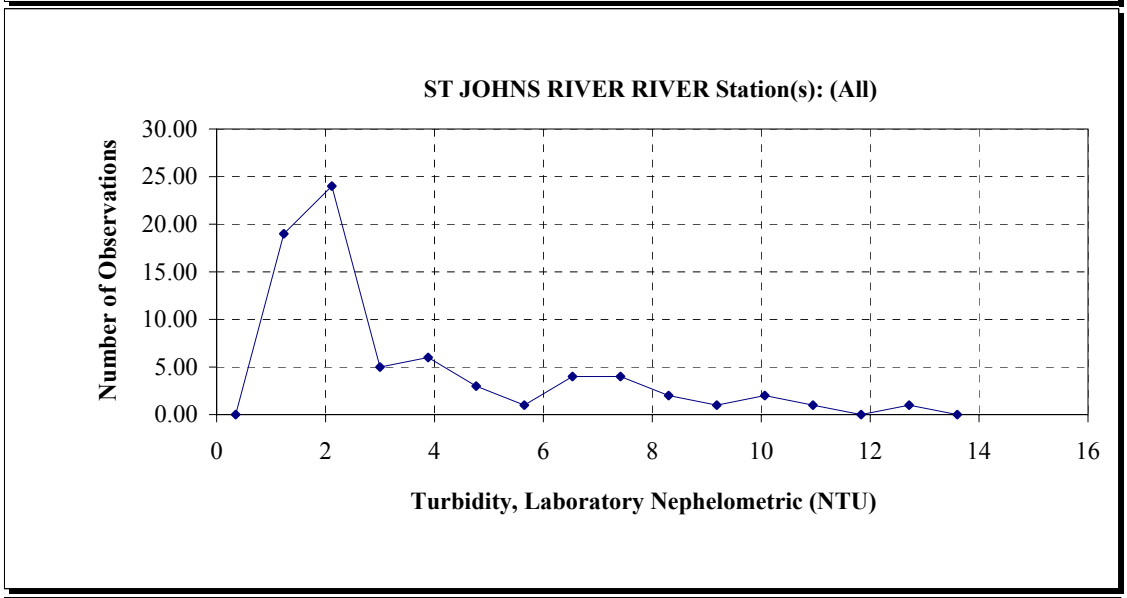
Slope Significance	P-value	0.000809246
Result	Slope different than 0	

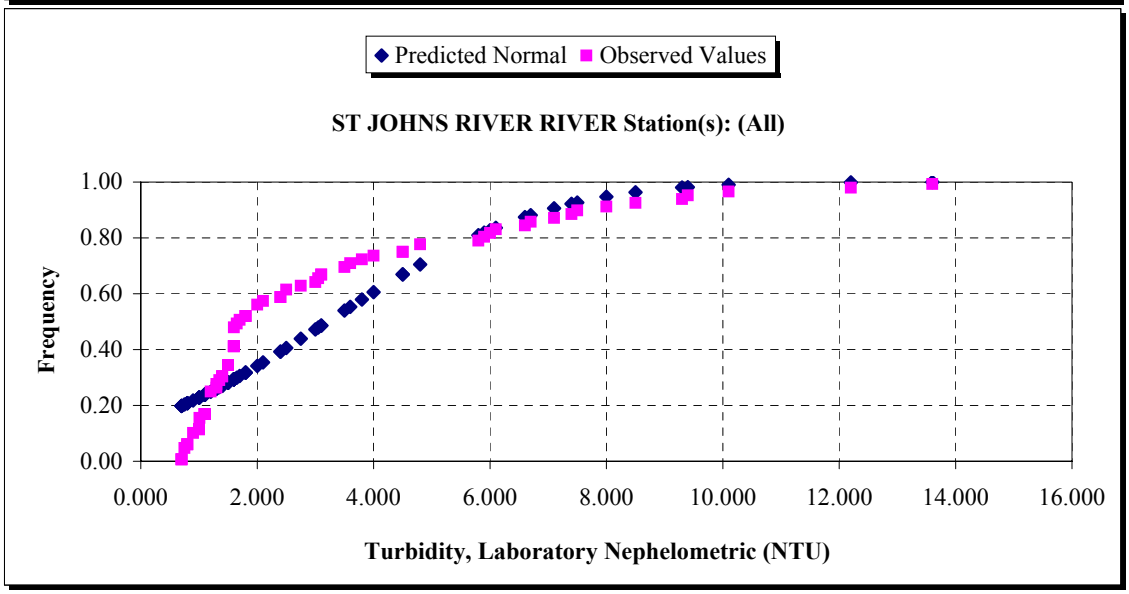
V. Rank Correlation

(Non-parametric Test of Association)

	rho	rho critical
Pearson (ranks)	0.3811	0.1925
Result:	Significant association	


ST JOHNS RIVER RIVER Station(s): (All)
Turbidity, Laboratory Nephelometric (NTU)
16.000
14.000
12.000
10.000
8.000
6.000
4.000
2.000
0.000
1996
1997
1998
1999
2000
2001
2002
Year
y = 0.00127x - 42.95899
R2 = 0.08906


ST JOHNS RIVER RIVER Station(s): (All)
Number of Observations
30.00
25.00
20.00
15.00
10.00
5.00
0.00
0
2
4
6
8
10
12
14
16
Turbidity, Laboratory Nephelometric (NTU)


Predicted Normal
Observed Values
ST JOHNS RIVER RIVER Station(s): (All)
Frequency
1.00
0.80
0.60
0.40
0.20
0.00
0.000
2.000
4.000
6.000
8.000
10.000
12.000
14.000
16.000
Turbidity, Laboratory Nephelometric (NTU)

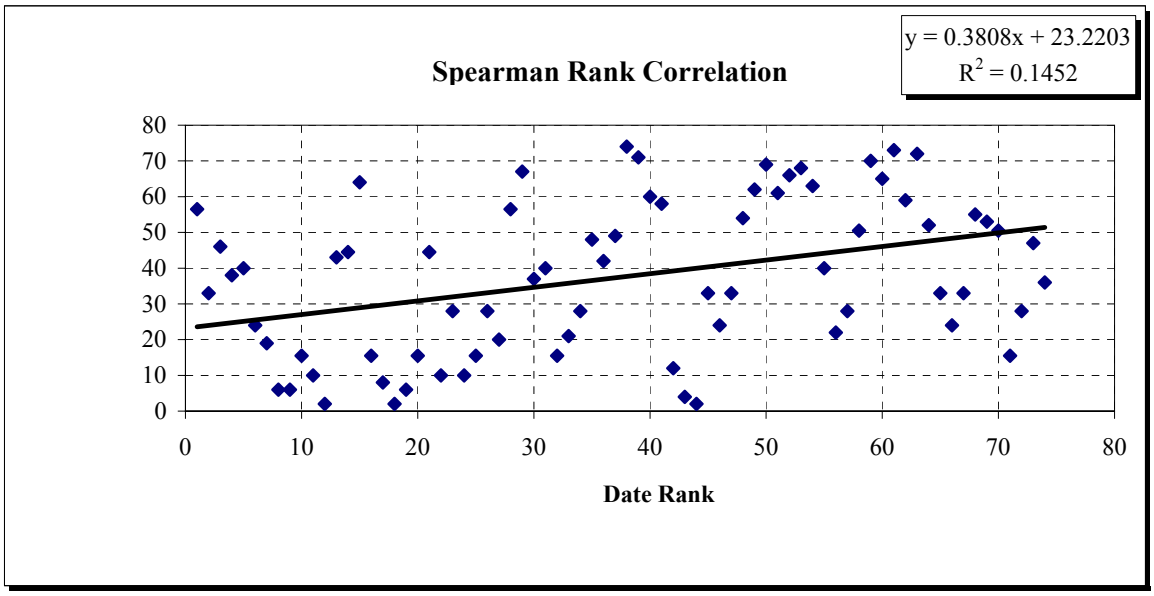


Table of Mean Period of Record Turbidity, Laboratory Nephelometric (NTU)

			95% Confidence Interval		
Year	**Median**	**Annual Ave**	**Lower**	**Upper**	**# Months**
1996	1.6000	1.8111	1.0680	2.5542	9
1997	1.1000	1.7500	0.7982	2.7018	12
1998	1.4000	2.1042	1.0034	3.2049	12
1999	3.0000	4.1555	1.7344	6.5765	11
2000	4.9000	4.5125	2.8940	6.1310	12
2001	3.5000	5.2000	2.8724	7.5276	11
2002	2.7500	2.5214	1.6850	3.3579	7

Station Summary	
Station ID	**Samples collected**
OW-SJR-1	80
SJR-OLH	2
Grand Total	82

Total Samples in Raw Data	
Total	84

Quality Assurance Codes Omitted	
Code	**Samples omitted**
Q	1
Q3	1
Grand Total	2

Water Quality Reports

LAKE JESUP LAKE Station(s): (All)
Mean Chlorophyll-A (MG/M3) 1991 to 2002
Storet Number 32210

Summary

I. Descriptive Statistics

	Start	End
Dates	3/1/1991	12/1/2002
	Average	Std Dev
Mean	95.8538	16.2316
	lower	upper
95 % C.I.	92.6565	99.0512
	Period of Record	
1st Quartile	54.9833	
Median	76.7667	
2nd Quartile	127.1250	

1998-2002

Sample Size	Average	Std Dev
59.00	113.26	59.38
Median	98.5773	
1st Quartile	62.6063	
2nd Quartile	161.3333	

Testing Assumptions

I. Skewness

Statistic	1.0217

II. Kurtosis

Statistic	0.1472

III. KS Test - Normality

N	99
Critical Dmax	0.0898
Dmax	0.1469
Result	Reject Normality

Quality Assurance/Quality Control

QA for
LAKE JESUP LA Chlorophyll-A

All J,Q,T,V,!, #, and Y were omitted
Remark Codes in this data set

	7
	21
W	2
(blank)	476
Grand Total	506

Seasonality (Oct-May vs June-Sept)

I. Descriptive Statistics

	Wet (J-S)	Dry (O-M)
N	34	65
Mean	112.5678	87.1111
SD	61.9577	53.9769
1st Quartile	58.2376	53.1667
Median	102.3030	65.7231
2nd Quartile	154.3125	101.0625

II. Parametric Statistical Test

Two Sample	t-statistic	P-value
t-test	0.0471	0.9625
Result	No Seasonality	

Trend Analysis

I. Least-Squares Regression

Slope	0.0129554	-368.952293	Intercept
SE slope	0.0048087	172.6167732	SE intercept
r-square	0.0696193	56.05608902	SE y-est.
F value	7.2583946	97	Sample N
SS regress	22807.945	304801.6563	

Slope Significance	P-value	0.00831712
Result	Slope greater than 0	

II. Decadal Rate Change Estimate

Rate (/10y)	47.287091	MG/M3/Decade

III. Pearson's r Correlation Coefficient

Pearsons r	0.2639
Result	Weak Correlation

IV. Least-Squares Rank Regression

(Non-parametric Trend Analysis +/-)

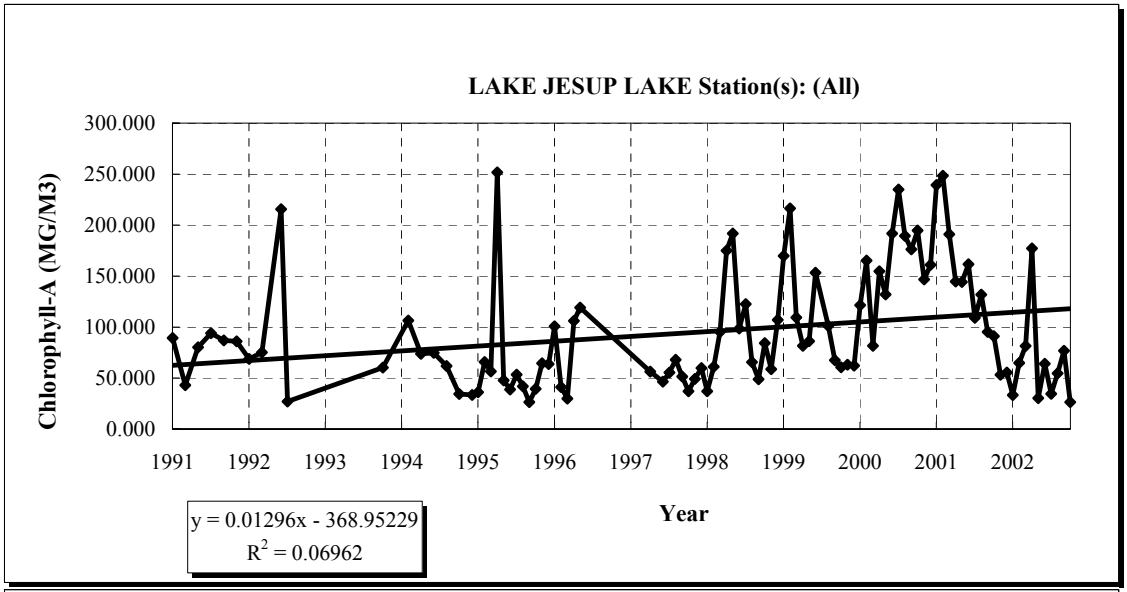
Slope	0.2594434	37.02782931	Intercept
SE slope	0.0980579	5.647204306	SE intercept
r-square	0.0673109	27.88191502	SE y-est.
F value	7.000356	97	Sample N
SS regress	5442.085	75407.91495	

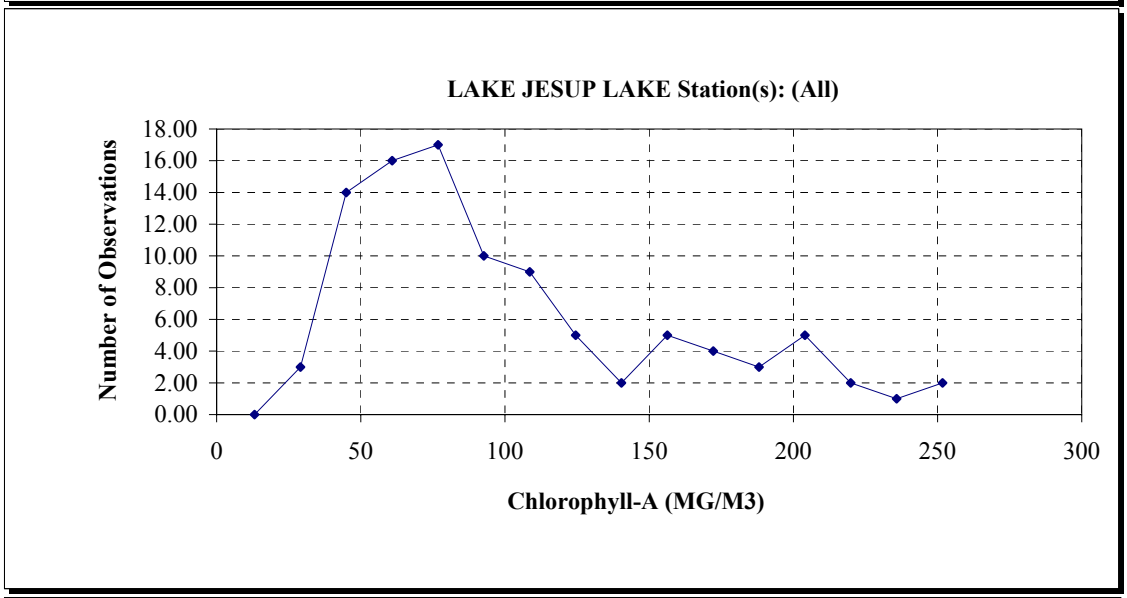
Slope Significance	P-value	0.009508484
Result	Slope different than 0	

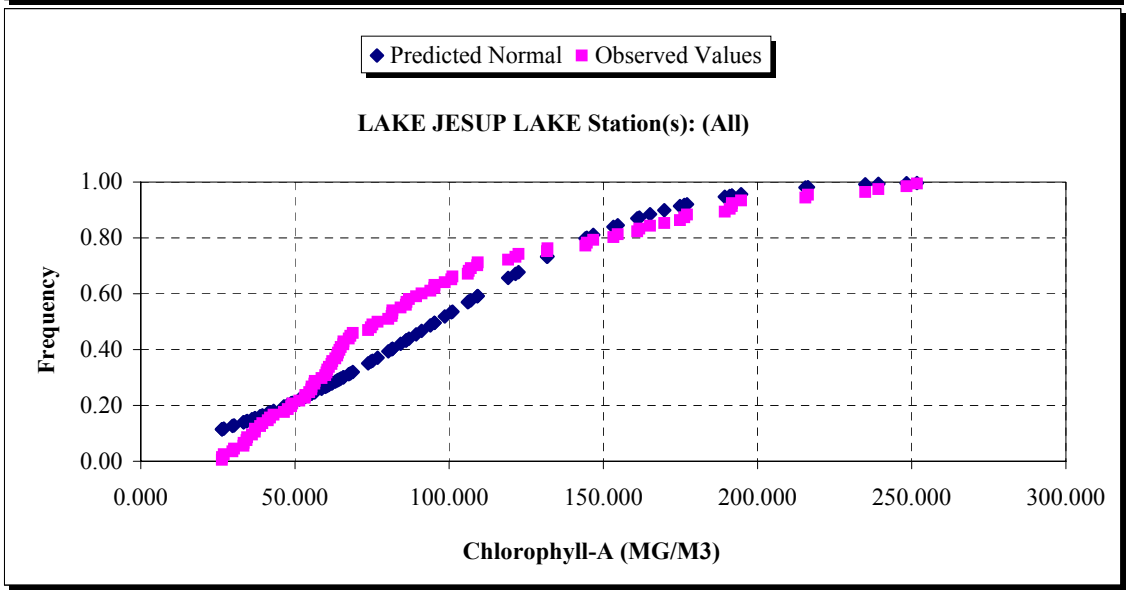
V. Rank Correlation

(Non-parametric Test of Association)

	rho	rho critical
Pearson (ranks)	0.2594	0.1662
Result:	Significant association	


LAKE JESUP LAKE Station(s): (All)
Chlorophyll-A (MG/M3)
300.000
250.000
200.000
150.000
100.000
50.000
0.000
1991
1992
1993
1994
1995
1996
1997
1998
1999
2000
2001
2002
Year
y = 0.01296x - 368.95229
R2 = 0.06962


LAKE JESUP LAKE Station(s): (All)
Number of Observations
18.00
16.00
14.00
12.00
10.00
8.00
6.00
4.00
2.00
0.00
0
50
100
150
200
250
300
Chlorophyll-A (MG/M3)


Predicted Normal
Observed Values
LAKE JESUP LAKE Station(s): (All)
Frequency
1.00
0.80
0.60
0.40
0.20
0.00
0.000
50.000
100.000
150.000
200.000
250.000
300.000
Chlorophyll-A (MG/M3)

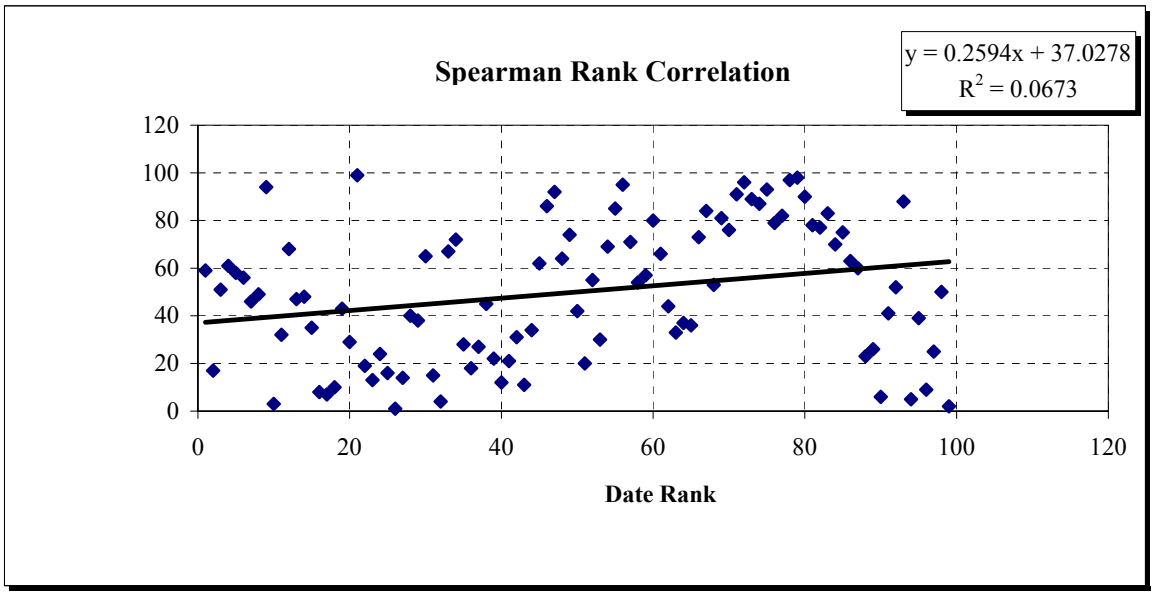


Table of Mean Period of Record Chlorophyll-A (MG/M3)

			95% Confidence Interval		
Year	**Median**	**Annual Ave**	**Lower**	**Upper**	**# Months**
1991	86.9660	78.6924	60.7052	96.6796	5
1992	75.1460	94.4626	31.9816	156.9436	5
1993	60.2400	60.2400	#DIV/0!	#DIV/0!	1
1994	73.7260	70.1772	47.4021	92.9523	5
1995	41.9429	62.8006	25.1799	100.4214	11
1996	64.4429	74.9943	49.6876	100.3009	7
1997	53.4312	52.4389	44.1272	60.7505	6
1998	74.9562	90.7139	62.5484	118.8794	12
1999	101.0625	110.1029	80.4858	139.7200	11
2000	159.9048	147.2407	115.5792	178.9021	12
2001	145.7083	155.3312	126.9039	183.7586	12
2002	54.9833	62.6389	39.8205	85.4573	12

Station Summary	
Station ID	**Samples collected**
OW-2	84
OW-3	52
OW-4	85
OW-5	64
OW-6	111
OW-7	59
OW-MBS	34
WLJESS	17
Grand Total	506

Total Samples in Raw Data	
Total	586

Quality Assurance Codes Omitted	
Code	**Samples omitted**
J	1
Q	63
Q1	7
Q12	8
Q2	1
Grand Total	80

Water Quality Reports

LAKE JESUP LAKE Station(s): (All)
Mean Total Nitrogen - calculated (MG/L as N) 1991 to 2002
Storet Number 600

Summary

I. Descriptive Statistics

	Start	End
Dates	3/1/1991	12/1/2002
	Average	Std Dev
Mean	2.9314	1.1949
	lower	upper
95 % C.I.	2.7049	3.1578
	Period of Record	
1st Quartile	1.9550	
Median	2.5153	
2nd Quartile	3.7293	

	1998-2002	
Sample Size	Average	Std Dev
58.00	3.35	1.36
Median	3.2464	
1st Quartile	2.1415	
2nd Quartile	4.4562	

Testing Assumptions

I. Skewness

Statistic	0.9433

II. Kurtosis

Statistic	0.5217

III. KS Test - Normality

N	107
Critical Dmax	0.0862
Dmax	0.1448
Result	Reject Normality

Quality Assurance/Quality Control

QA for
LAKE JESUP LA Total Nitrogen - calculated

All J,Q,T,V,!, #, and Y were omitted
Remark Codes in this data set

I	1
T	20
K	6
T	238
T T	1
W	64
(blank)	239
Grand Total	569

Seasonality (Oct-May vs June-Sept)

I. Descriptive Statistics

	Wet (J-S)	Dry (O-M)
N	36	71
Mean	3.0712	2.8604
SD	1.1706	1.2754
1st Quartile	2.0884	1.9277
Median	2.9228	2.3285
2nd Quartile	4.0000	3.5632

II. Parametric Statistical Test

Two Sample	t-statistic	P-value
t-test	0.3960	0.6929
Result	No Seasonality	

Trend Analysis

I. Least-Squares Regression

Slope	0.0002619	-6.45206419	Intercept
SE slope	0.0001038	3.722555415	SE intercept
r-square	0.0571135	1.209447574	SE y-est.
F value	6.3601714	105	Sample N
SS regress	9.3034262	153.5901606	

Slope Significance	P-value	0.013172491
Result	Slope greater than 0	

II. Decadal Rate Change Estimate

Rate (/10y)	0.9559076	MG/L as N/Decade

III. Pearson's r Correlation Coefficient

Pearsons r	0.2390
Result	Weak Correlation

IV. Least-Squares Rank Regression

(Non-parametric Trend Analysis +/-)

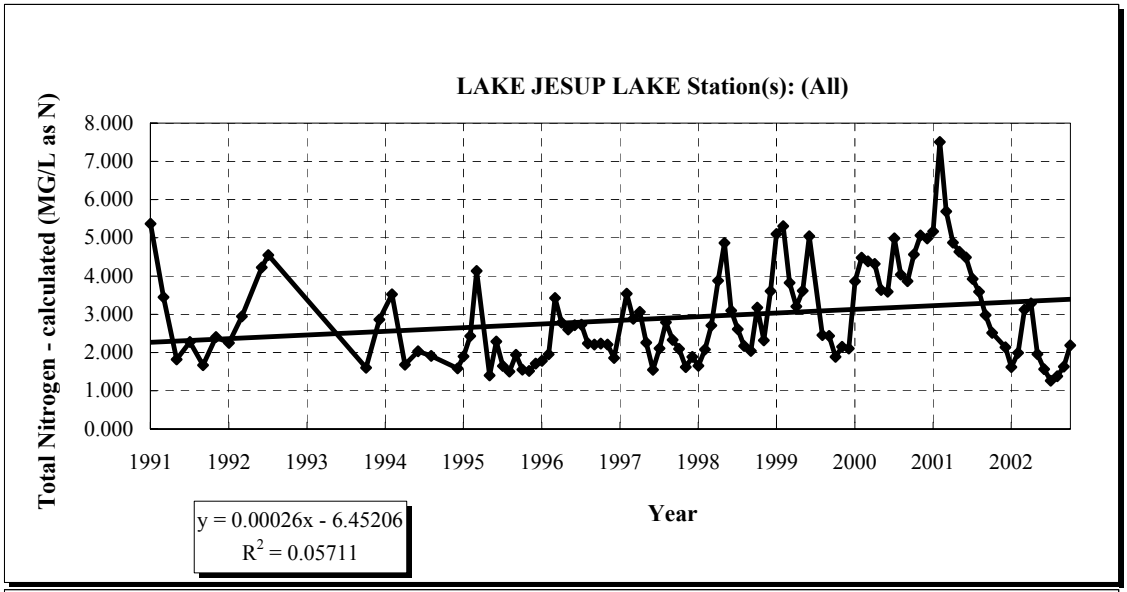
Slope	0.2545406	40.25480515	Intercept
SE slope	0.0943756	5.871041979	SE intercept
r-square	0.0647909	30.15267032	SE y-est.
F value	7.2743614	105	Sample N
SS regress	6613.7296	95464.27041	

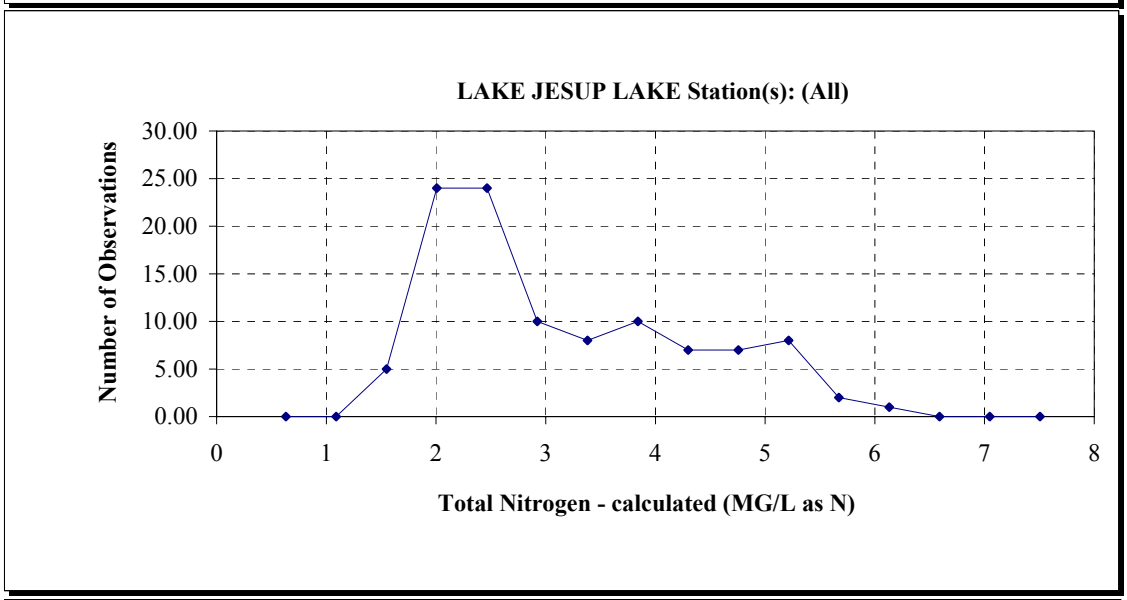
Slope Significance	P-value	0.008149977
Result	Slope different than 0	

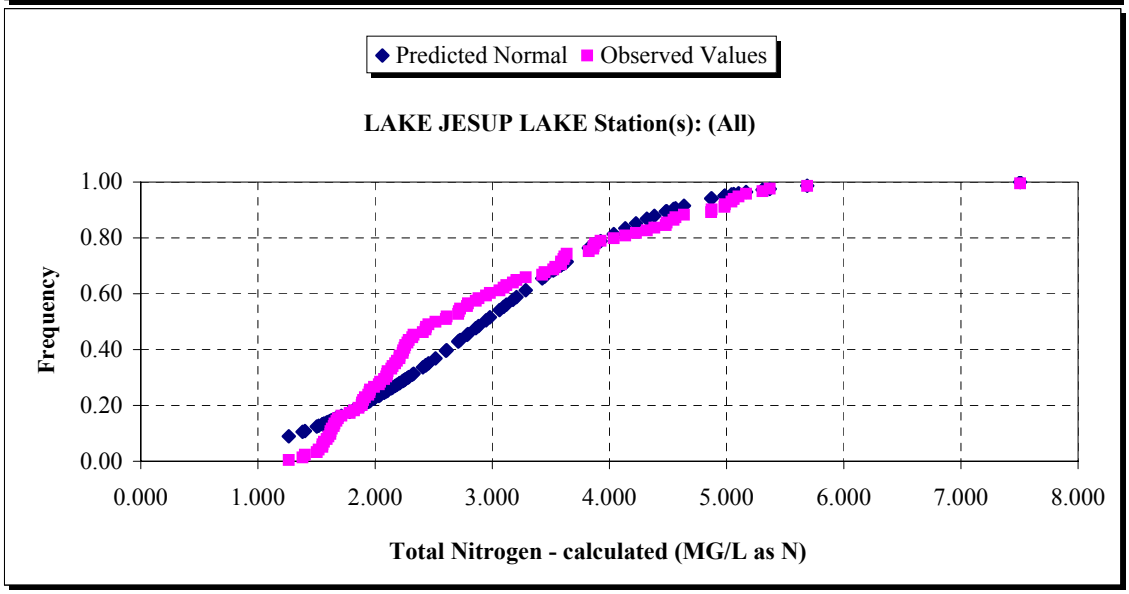
V. Rank Correlation

(Non-parametric Test of Association)

	rho	rho critical
Pearson (ranks)	0.2545	0.1598
Result:	Significant association	


LAKE JESUP LAKE Station(s): (All)
Total Nitrogen - calculated (MG/L as N)
8.000
7.000
6.000
5.000
4.000
3.000
2.000
1.000
0.000
1991
1992
1993
1994
1995
1996
1997
1998
1999
2000
2001
2002
Year
y = 0.00026x - 6.45206
R2 = 0.05711


LAKE JESUP LAKE Station(s): (All)
Number of Observations
30.00
25.00
20.00
15.00
10.00
5.00
0.00
0
1
2
3
4
5
6
7
8
Total Nitrogen - calculated (MG/L as N)


Predicted Normal
Observed Values
LAKE JESUP LAKE Station(s): (All)
Frequency
1.00
0.80
0.60
0.40
0.20
0.00
0.000
1.000
2.000
3.000
4.000
5.000
6.000
7.000
8.000
Total Nitrogen - calculated (MG/L as N)

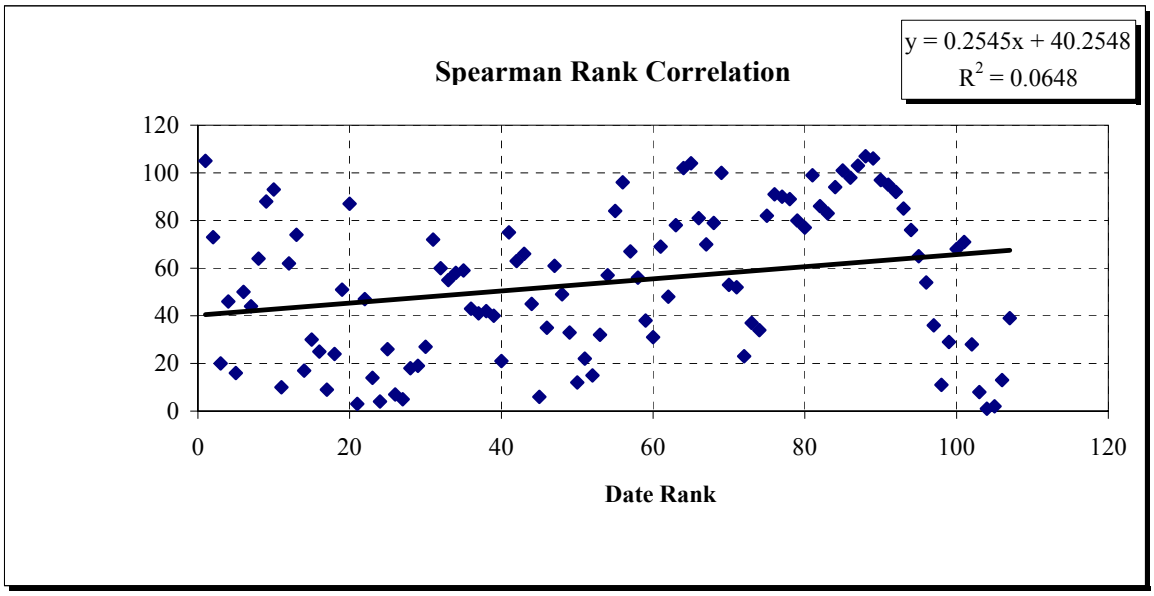


Table of Mean Period of Record Total Nitrogen - calculated (MG/L as N)

			95% Confidence Interval		
Year	**Median**	**Annual Ave**	**Lower**	**Upper**	**# Months**
1991	2.2770	2.9166	1.5691	4.2641	5
1992	2.9470	3.2756	2.3526	4.1986	5
1993	1.6020	1.6020	#DIV/0!	#DIV/0!	1
1994	2.0320	2.4018	1.7293	3.0743	5
1995	1.7726	2.0384	1.5353	2.5415	10
1996	2.2374	2.3257	2.0157	2.6356	12
1997	2.2577	2.4256	2.0825	2.7686	11
1998	2.3908	2.6492	2.0972	3.2012	12
1999	3.6076	3.5274	2.8124	4.2424	11
2000	3.9511	3.8311	3.3253	4.3370	12
2001	4.7543	4.6174	3.8768	5.3580	12
2002	1.9567	2.0123	1.6219	2.4028	11

Station Summary	
Station ID	**Samples collected**
OW-2	93
OW-3	61
OW-4	94
OW-5	78
OW-6	122
OW-7	68
OW-MBS	36
WLJESS	17
Grand Total	569

Total Samples in Raw Data	
Total	588

Quality Assurance Codes Omitted	
Code	**Samples omitted**
#	2
J Q	7
Q	7
Q4 Q4	3
Grand Total	19

Water Quality Reports

LAKE JESUP LAKE Station(s): (All)
Mean Total Phosphorus-T (MG/L as P) 1991 to 2002
Storet Number 665

Summary

I. Descriptive Statistics

	Start	End
Dates	3/1/1991	12/1/2002
	Average	Std Dev
Mean	0.1664	0.0438
	lower	upper
95 % C.I.	0.1582	0.1746
	Period of Record	
1st Quartile	0.1237	
Median	0.1518	
2nd Quartile	0.1968	

1998-2002

Sample Size	Average	Std Dev
58.00	0.16	0.06
Median	0.1441	
1st Quartile	0.1212	
2nd Quartile	0.1915	

Testing Assumptions

I. Skewness

Statistic	1.5982

II. Kurtosis

Statistic	3.9805

III. KS Test - Normality

N	110
Critical Dmax	0.0850
Dmax	0.1288
Result	Reject Normality

Quality Assurance/Quality Control

QA for
LAKE JESUP LA Total Phosphorus-T

All J,Q,T,V,!, #, and Y were omitted
Remark Codes in this data set

	21
(blank)	564
Grand Total	585

Seasonality (Oct-May vs June-Sept)

I. Descriptive Statistics

	Wet (J-S)	Dry (O-M)
N	37	73
Mean	0.1851	0.1570
SD	0.0779	0.0472
1st Quartile	0.1270	0.1203
Median	0.1757	0.1469
2nd Quartile	0.2101	0.1820

II. Parametric Statistical Test

Two Sample	t-statistic	P-value
t-test	0.0494	0.9607
Result	No Seasonality	

Trend Analysis

I. Least-Squares Regression

Slope	-1.214E-05	0.601236738	Intercept
SE slope	5.036E-06	0.18042014	SE intercept
r-square	0.0510819	0.059163747	SE y-est.
F value	5.8138295	108	Sample N
SS regress	0.0203504	0.378037689	

Slope Significance	P-value	0.017588252
Result	Slope greater than 0	

II. Decadal Rate Change Estimate

Rate (/10y)	-0.0443232	MG/L as P/Decade

III. Pearson's r Correlation Coefficient

Pearsons r	-0.2260
Result	Weak Correlation

IV. Least-Squares Rank Regression

(Non-parametric Trend Analysis +/-)

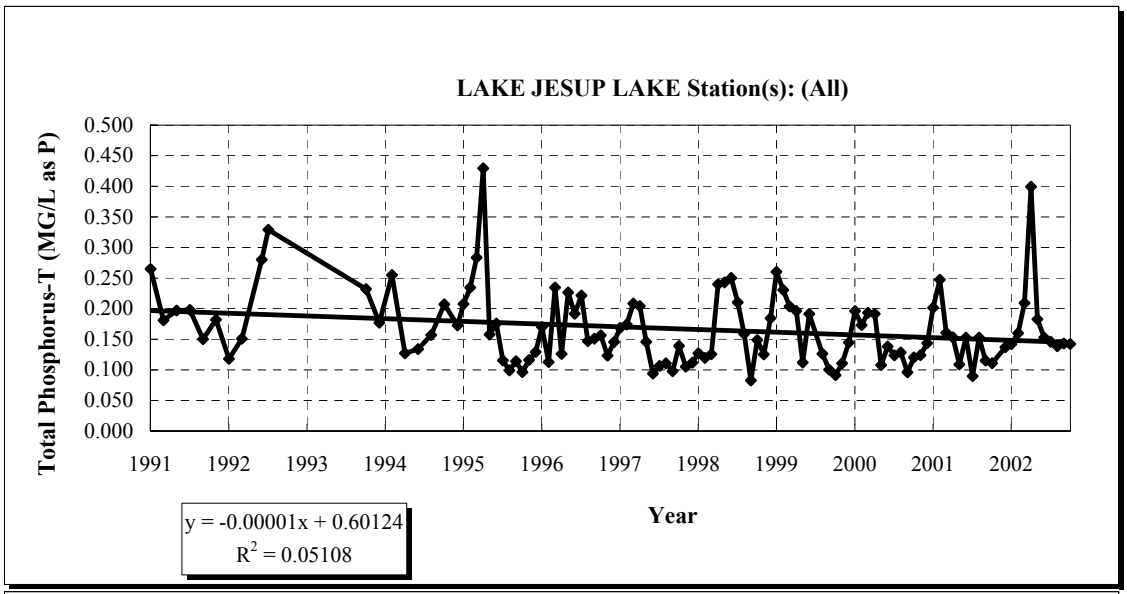
Slope	-0.2227307	67.86155129	Intercept
SE slope	0.0938079	5.998204848	SE intercept
r-square	0.0496089	31.24062763	SE y-est.
F value	5.6374331	108	Sample N
SS regress	5502.004	105405.496	

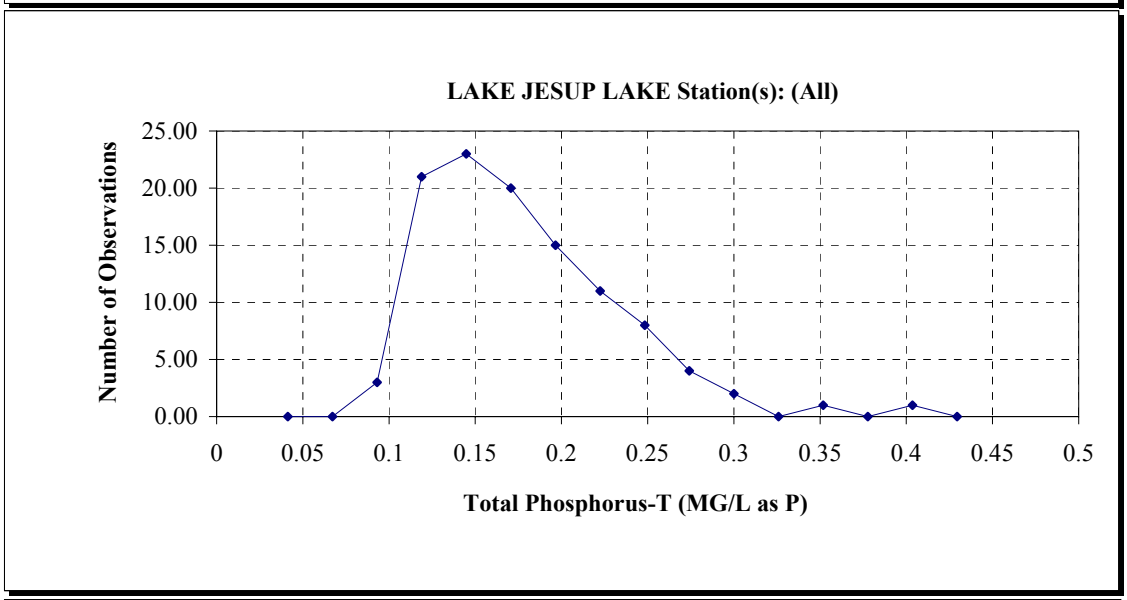
Slope Significance	P-value	0.019346132
Result	Slope different than 0	

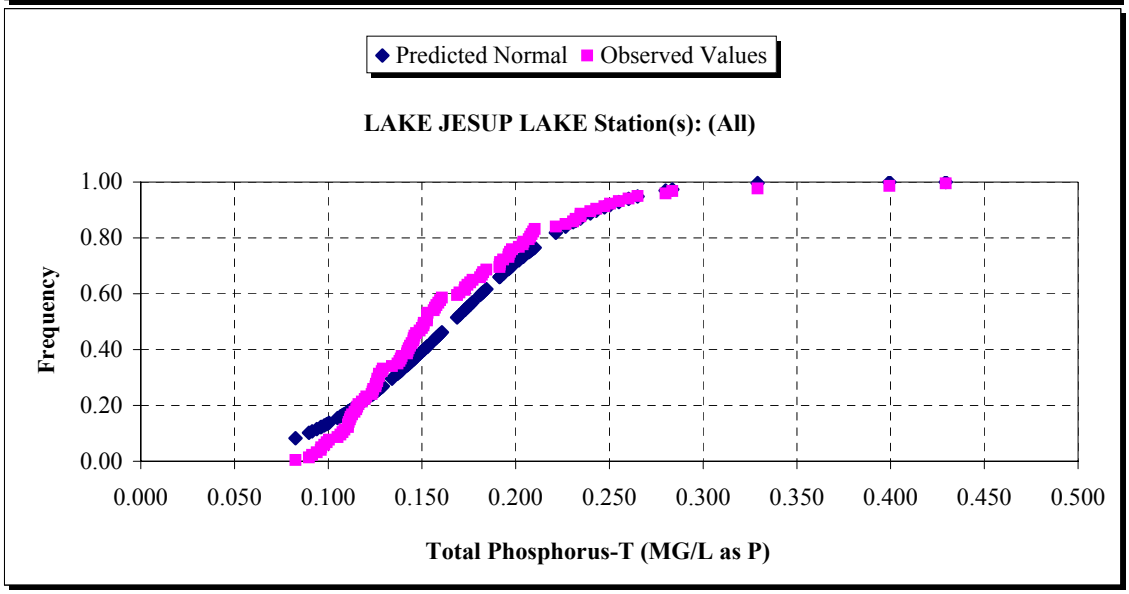
V. Rank Correlation

(Non-parametric Test of Association)

	rho	rho critical
Pearson (ranks)	-0.2227	0.1576
Result:	Significant association	


LAKE JESUP LAKE Station(s): (All)
Total Phosphorus-T (MG/L as P)
0.500
0.450
0.400
0.350
0.300
0.250
0.200
0.150
0.100
0.050
0.000
1991
1992
1993
1994
1995
1996
1997
1998
1999
2000
2001
2002
Year
y = -0.00001x + 0.60124
R2 = 0.05108


LAKE JESUP LAKE Station(s): (All)
Number of Observations
25.00
20.00
15.00
10.00
5.00
0.00
0
0.05
0.1
0.15
0.2
0.25
0.3
0.35
0.4
0.45
0.5
Total Phosphorus-T (MG/L as P)


Predicted Normal
Observed Values
LAKE JESUP LAKE Station(s): (All)
Frequency
1.00
0.80
0.60
0.40
0.20
0.00
0.000
0.050
0.100
0.150
0.200
0.250
0.300
0.350
0.400
0.450
0.500
Total Phosphorus-T (MG/L as P)

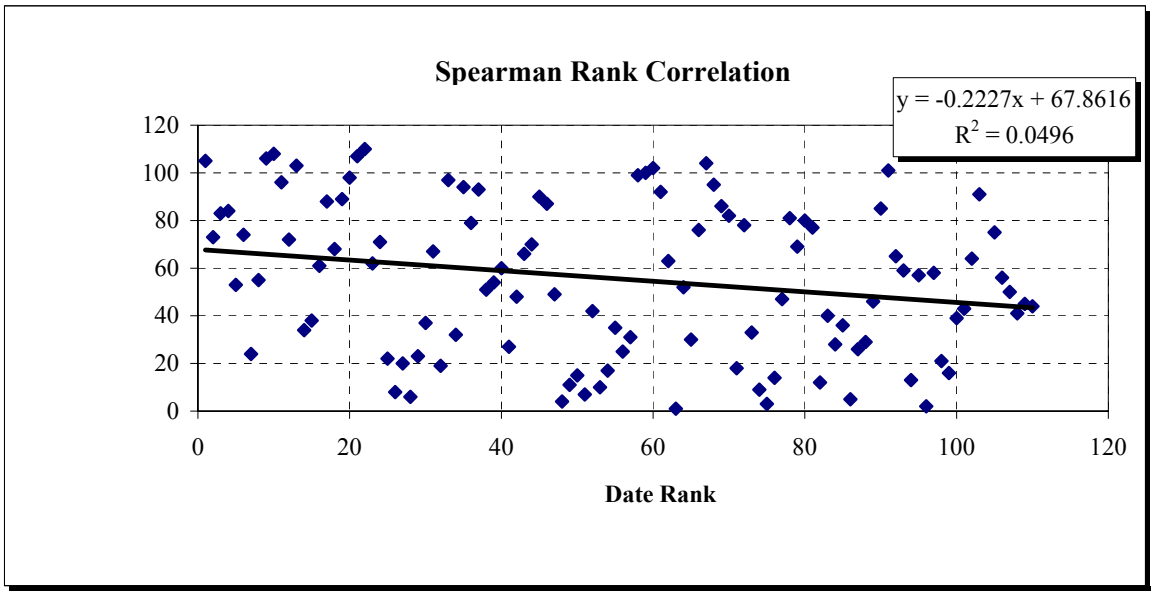


Table of Mean Period of Record Total Phosphorus-T (MG/L as P)

			95% Confidence Interval		
Year	**Median**	**Annual Ave**	**Lower**	**Upper**	**# Months**
1991	0.1970	0.1982	0.1613	0.2351	5
1992	0.1820	0.2120	0.1339	0.2901	5
1993	0.2320	0.2320	#DIV/0!	#DIV/0!	1
1994	0.1670	0.1762	0.1374	0.2149	6
1995	0.1727	0.1897	0.1311	0.2483	11
1996	0.1536	0.1652	0.1404	0.1900	12
1997	0.1423	0.1432	0.1210	0.1653	12
1998	0.1379	0.1602	0.1263	0.1940	12
1999	0.1844	0.1656	0.1320	0.1993	11
2000	0.1332	0.1436	0.1232	0.1639	12
2001	0.1482	0.1467	0.1220	0.1714	12
2002	0.1460	0.1775	0.1321	0.2229	11

Station Summary	
Station ID	**Samples collected**
OW-2	95
OW-3	63
OW-4	96
OW-5	82
OW-6	125
OW-7	70
OW-MBS	36
WLJESS	18
Grand Total	585

Total Samples in Raw Data	
Total	588

Quality Assurance Codes Omitted	
Code	**Samples omitted**
Q11	3
Grand Total	3

Water Quality Reports

ST JOHNS RIVER RIVER Station(s): (All)
Mean Dissolved Oxygen (MG/L) 1996 to 2002
Storet Number 300

Summary

I. Descriptive Statistics

	Start	End
Dates	3/1/1996	12/1/2002
	Average	Std Dev
Mean	6.1833	1.2080
	lower	upper
95 % C.I.	5.9099	6.4567
	Period of Record	
1st Quartile	5.0575	
Median	6.5700	
2nd Quartile	7.7400	

	1998-2002	
Sample Size	Average	Std Dev
53.00	5.98	2.40
Median	6.5700	
1st Quartile	4.9000	
2nd Quartile	7.6300	

Testing Assumptions

I. Skewness

Statistic	-0.4929

II. Kurtosis

Statistic	0.2070

III. KS Test - Normality

N	75
Critical Dmax	0.1024
Dmax	0.0888
Result	Can't reject Normality

Quality Assurance/Quality Control

QA for
ST JOHNS RIVER RIV Dissolved Oxygen

All J,Q,T,V,!, #, and Y were omitted
Remark Codes in this data set

	10
(blank)	307
Grand Total	317

Seasonality (Oct-May vs June-Sept)

I. Descriptive Statistics

	Wet (J-S)	Dry (O-M)
N	24	51
Mean	5.0802	6.7023
SD	2.2853	2.1679
1st Quartile	4.6360	5.4850
Median	5.5419	7.0100
2nd Quartile	5.9400	8.0806

II. Parametric Statistical Test

Two Sample	t-statistic	P-value
t-test	0.0056	0.9955
Result	No Seasonality	

Trend Analysis

I. Least-Squares Regression

Slope	-0.0004628	22.98338523	Intercept
SE slope	0.0003694	13.41381757	SE intercept
r-square	0.0210442	2.310445829	SE y-est.
F value	1.5692499	73	Sample N
SS regress	8.3769072	389.6856748	

Slope Significance	P-value	0.214314082
Result	Slope not greater than 0	

II. Decadal Rate Change Estimate

Rate (/10y)	-1.6890393	MG/L/Decade

III. Pearson's r Correlation Coefficient

Pearsons r	-0.1451
Result	Weak Correlation

IV. Least-Squares Rank Regression

(Non-parametric Trend Analysis +/-)

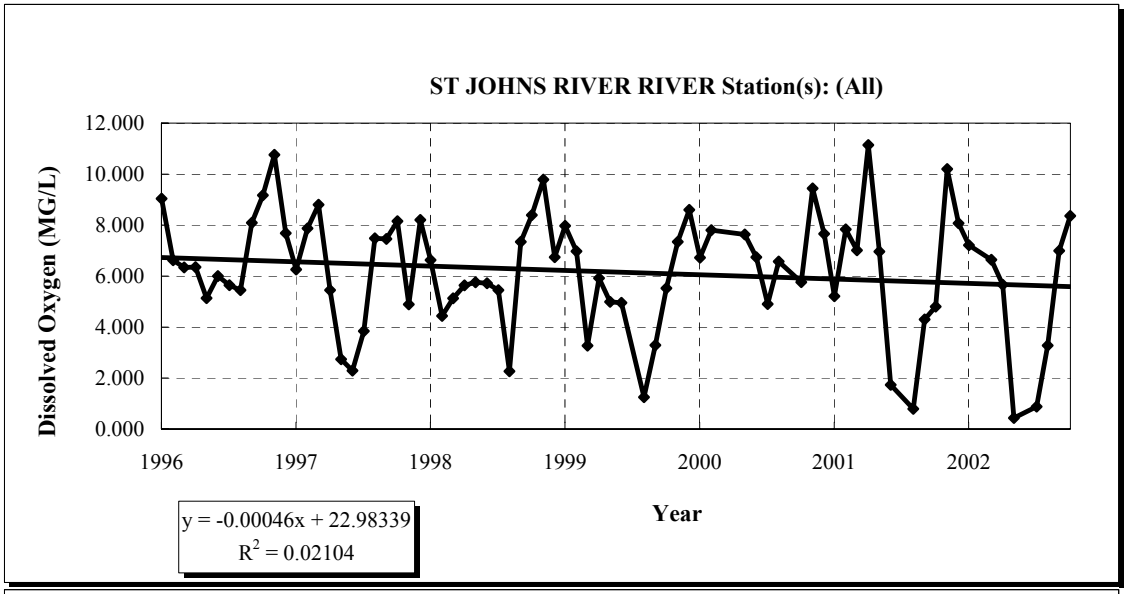
Slope	-0.0921764	41.5027027	Intercept
SE slope	0.1165429	5.096890968	SE intercept
r-square	0.0084965	21.84984515	SE y-est.
F value	0.6255585	73	Sample N
SS regress	298.65149	34851.34851	

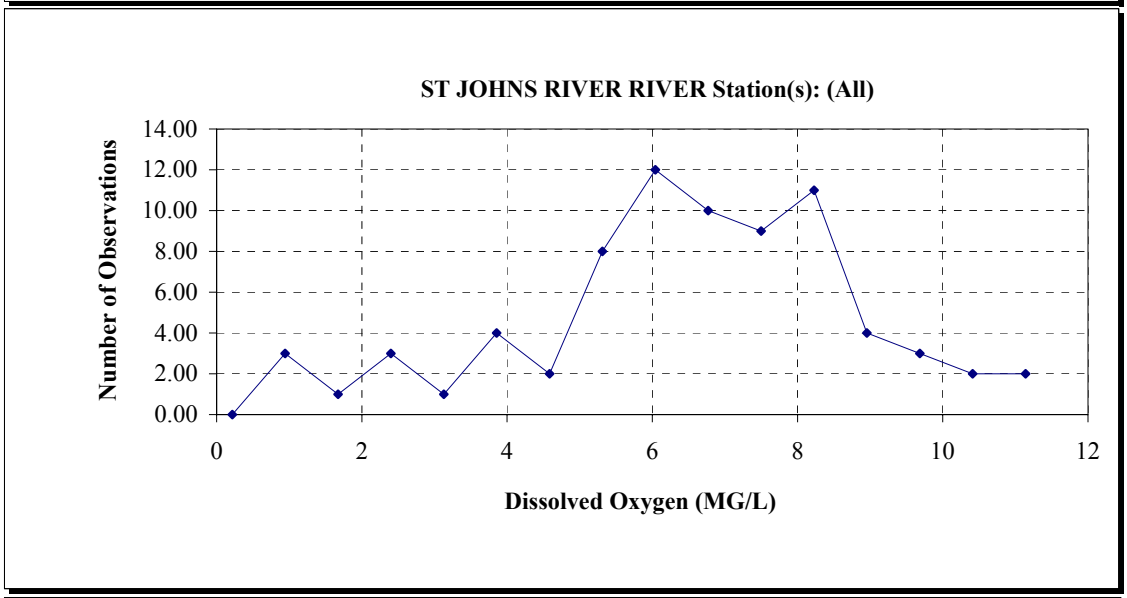
Slope Significance	P-value	0.431551327
Result	Slope equivalent to 0	

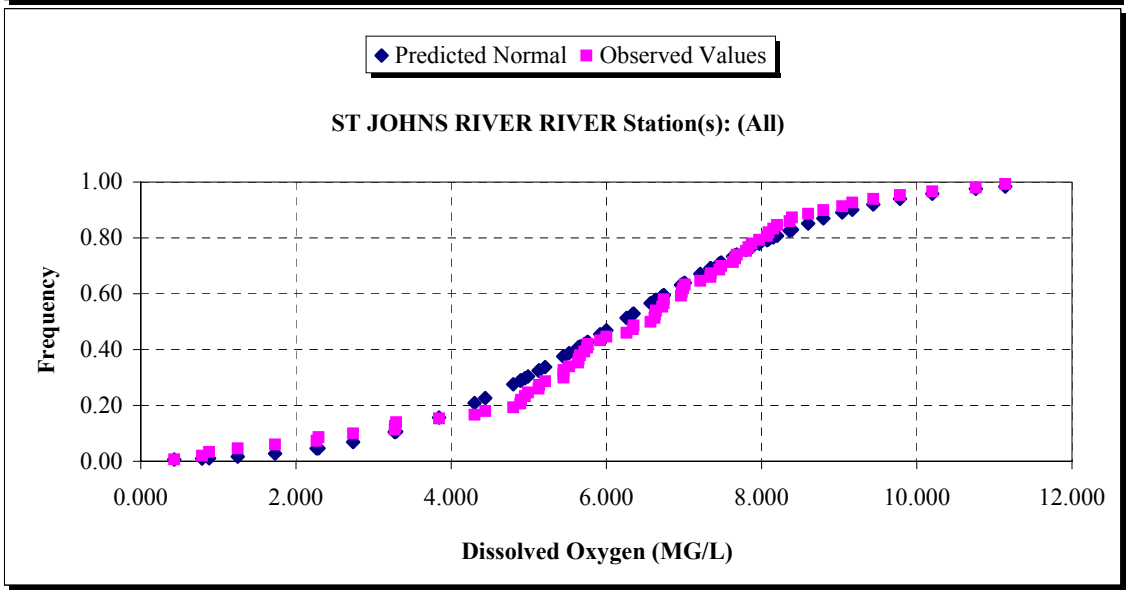
V. Rank Correlation

(Non-parametric Test of Association)

	rho	rho critical
Pearson (ranks)	-0.0922	0.1912
Result:	No significant association	


ST JOHNS RIVER RIVER Station(s): (All)
Dissolved Oxygen (MG/L)
12.000
10.000
8.000
6.000
4.000
2.000
0.000
1996
1997
1998
1999
2000
2001
2002
Year
y = -0.00046x + 22.98339
R2 = 0.02104


ST JOHNS RIVER RIVER Station(s): (All)
Number of Observations
14.00
12.00
10.00
8.00
6.00
4.00
2.00
0.00
0
2
4
6
8
10
12
Dissolved Oxygen (MG/L)


Predicted Normal
Observed Values
ST JOHNS RIVER RIVER Station(s): (All)
Frequency
1.00
0.80
0.60
0.40
0.20
0.00
0.000
2.000
4.000
6.000
8.000
10.000
12.000
Dissolved Oxygen (MG/L)

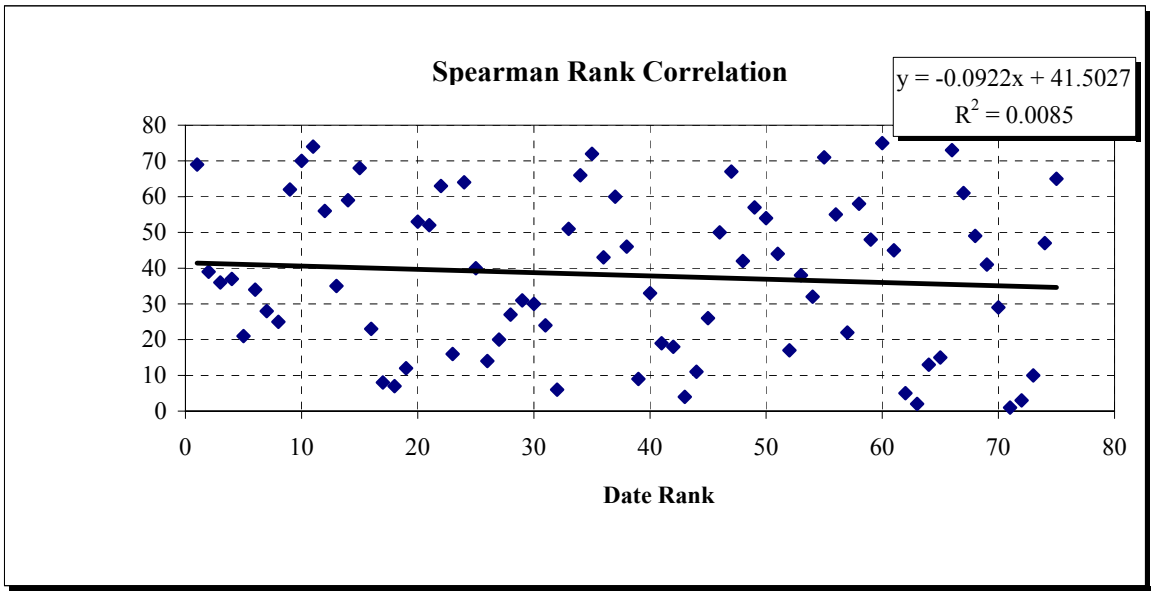


Table of Mean Period of Record Dissolved Oxygen (MG/L)

			95% Confidence Interval		
Year	**Median**	**Annual Ave**	**Lower**	**Upper**	**# Months**
1996	6.3450	6.7836	5.8756	7.6916	10
1997	7.4678	6.5642	5.1231	8.0052	12
1998	5.6758	5.8199	4.8652	6.7745	12
1999	5.5200	5.5139	4.1057	6.9221	11
2000	6.7400	6.8956	6.1690	7.6221	9
2001	6.9600	6.0791	4.2427	7.9154	11
2002	6.8150	5.7717	3.7623	7.7811	10

Station Summary	
Station ID	**Samples collected**
OW-SJR-2	313
SJR-415	4
Grand Total	317

Total Samples in Raw Data	
Total	320

Quality Assurance Codes Omitted	
Code	**Samples omitted**
J	3
Grand Total	3

Water Quality Reports

ST JOHNS RIVER RIVER Station(s): (All)
Mean Total Nitrogen - calculated (MG/L as N) 1996 to 2002
Storet Number 600

Summary

I. Descriptive Statistics

	Start	End
Dates	3/1/1996	12/1/2002
	Average	Std Dev
Mean	1.8580	0.3585
	lower	upper
95 % C.I.	1.7769	1.9392
	Period of Record	
1st Quartile	1.4005	
Median	1.7100	
2nd Quartile	2.1170	

1998-2002

Sample Size	Average	Std Dev
54.00	1.99	0.74

Median	1.7335
1st Quartile	1.5310
2nd Quartile	2.4404

Testing Assumptions

I. Skewness

Statistic	1.3406

II. Kurtosis

Statistic	2.1795

III. KS Test - Normality

N	75
Critical Dmax	0.1024
Dmax	0.1740
Result	Reject Normality

Quality Assurance/Quality Control

QA for
ST JOHNS RIVER RIV Total Nitrogen - calculated

All J,Q,T,V,!, #, and Y were omitted
Remark Codes in this data set

	7
I	1
T	2
T	18
W	3
(blank)	55
Grand Total	86

Seasonality (Oct-May vs June-Sept)

I. Descriptive Statistics

	Wet (J-S)	Dry (O-M)
N	25	50
Mean	1.9529	1.8106
SD	0.8002	0.6135
1st Quartile	1.5320	1.3757
Median	1.6385	1.7305
2nd Quartile	2.1130	2.1022

II. Parametric Statistical Test

Two Sample	t-statistic	P-value
t-test	0.4392	0.6618
Result	No Seasonality	

Trend Analysis

I. Least-Squares Regression

Slope	0.0003616	-11.2778837	Intercept
SE slope	0.000102	3.706586455	SE intercept
r-square	0.1468415	0.631718216	SE y-est.
F value	12.564401	73	Sample N
SS regress	5.0140491	29.131957	

Slope Significance	P-value	0.000690353
Result	Slope greater than 0	

II. Decadal Rate Change Estimate

Rate (/10y)	1.3200166	MG/L as N/Decade

III. Pearson's r Correlation Coefficient

Pearsons r	0.3832
Result	Weak Correlation

IV. Least-Squares Rank Regression

(Non-parametric Trend Analysis +/-)

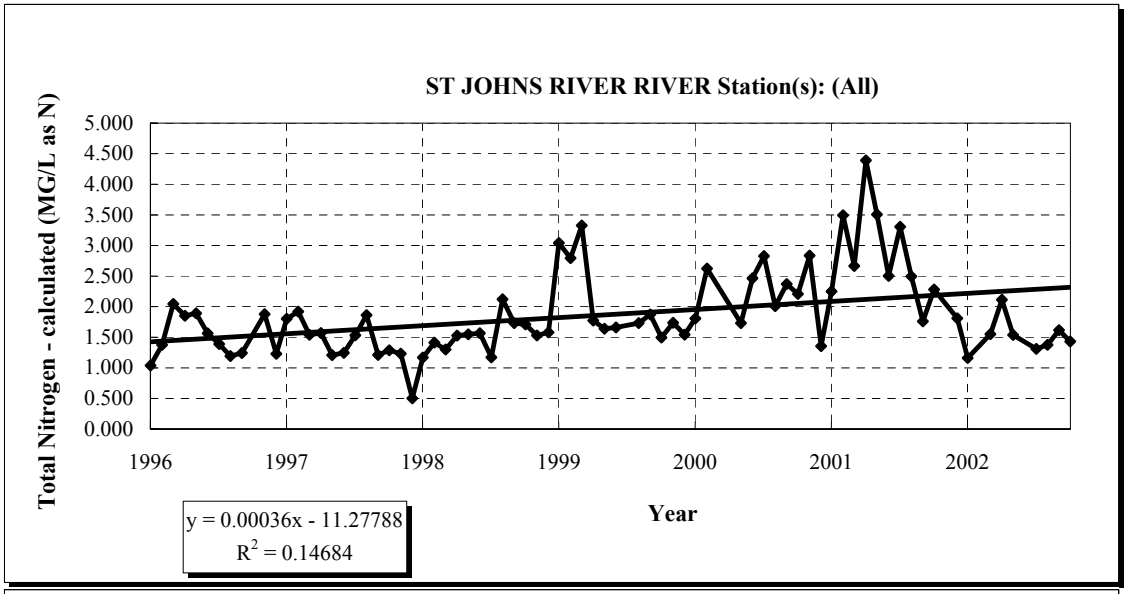
Slope	0.3742817	23.7772973	Intercept
SE slope	0.108534	4.746631686	SE intercept
r-square	0.1400868	20.34831978	SE y-est.
F value	11.892285	73	Sample N
SS regress	4924.0494	30225.95061	

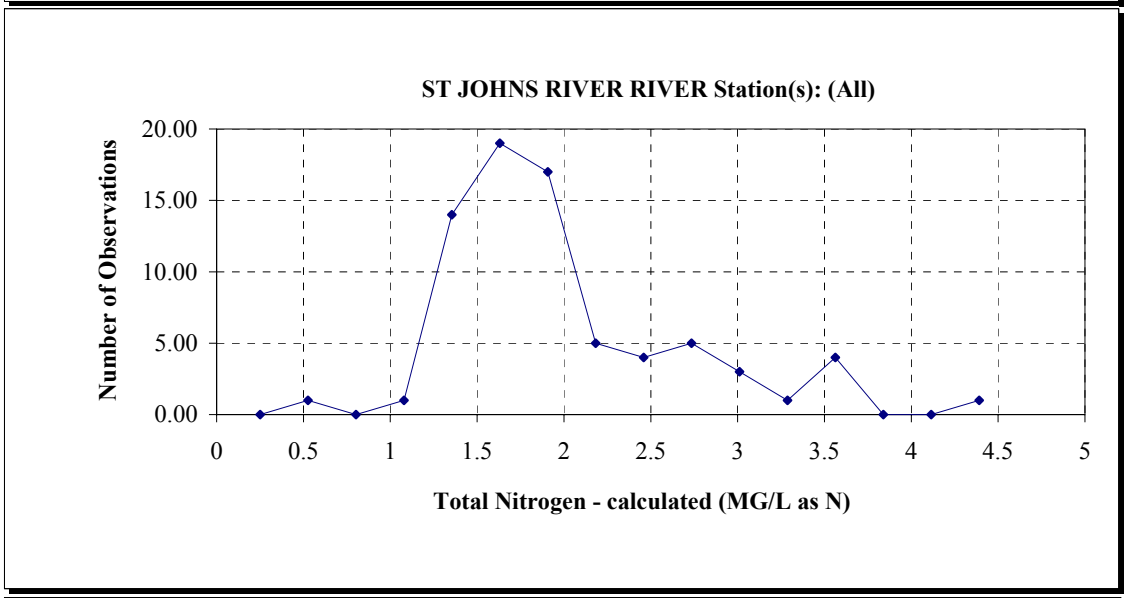
Slope Significance	P-value	0.000939487
Result	Slope different than 0	

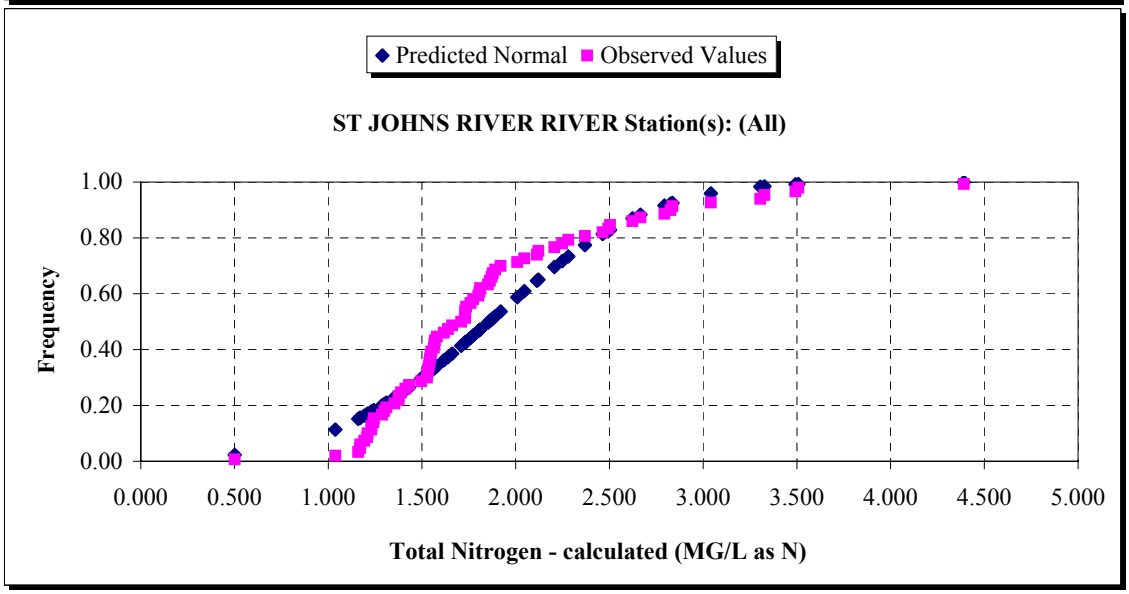
V. Rank Correlation

(Non-parametric Test of Association)

	rho	rho critical
Pearson (ranks)	0.3743	0.1912
Result:	Significant association	


ST JOHNS RIVER RIVER Station(s): (All)
Total Nitrogen - calculated (MG/L as N)
5.000
4.500
4.000
3.500
3.000
2.500
2.000
1.500
1.000
0.500
0.000
1996
1997
1998
1999
2000
2001
2002
Year
y = 0.00036x - 11.27788
R2 = 0.14684


ST JOHNS RIVER RIVER Station(s): (All)
Number of Observations
20.00
15.00
10.00
5.00
0.00
0
0.5
1
1.5
2
2.5
3
3.5
4
4.5
5
Total Nitrogen - calculated (MG/L as N)


Predicted Normal
Observed Values
ST JOHNS RIVER RIVER Station(s): (All)
Frequency
1.00
0.80
0.60
0.40
0.20
0.00
0.000
0.500
1.000
1.500
2.000
2.500
3.000
3.500
4.000
4.500
5.000
Total Nitrogen - calculated (MG/L as N)

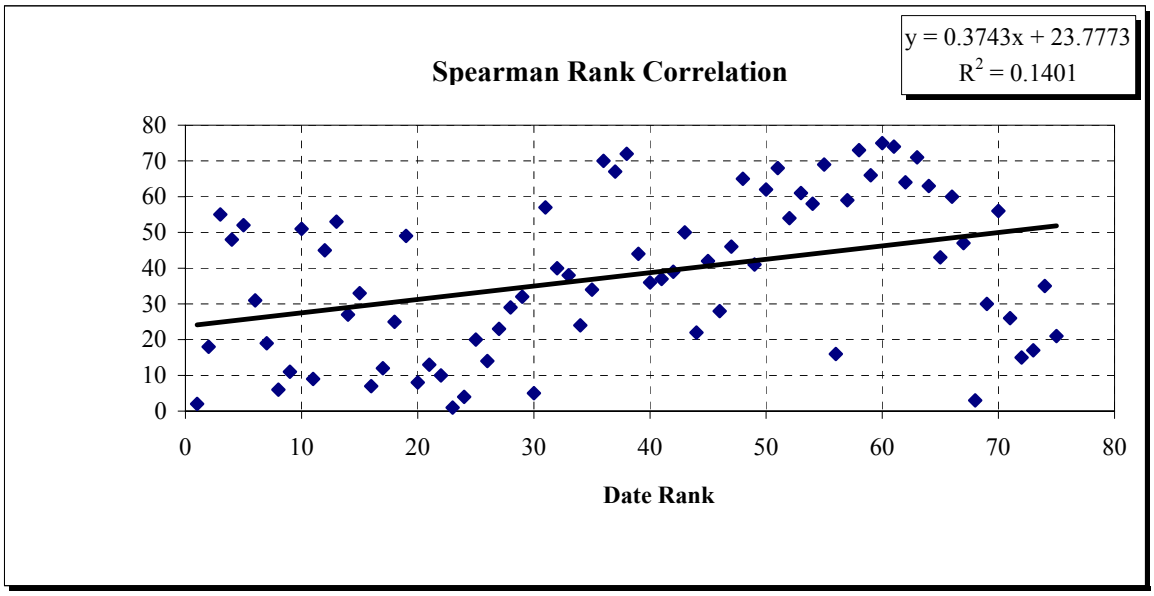


Table of Mean Period of Record Total Nitrogen - calculated (MG/L as N)

			95% Confidence Interval		
Year	**Median**	**Annual Ave**	**Lower**	**Upper**	**# Months**
1996	1.3890	1.5099	1.2811	1.7387	9
1997	1.5360	1.5235	1.3621	1.6849	12
1998	1.4695	1.4154	1.1903	1.6405	12
1999	1.7300	2.0403	1.6440	2.4366	11
2000	2.1070	2.1313	1.8635	2.3991	10
2001	2.5845	2.7365	2.2641	3.2089	12
2002	1.5370	1.5449	1.3596	1.7301	9

Station Summary	
Station ID	**Samples collected**
OW-SJR-2	82
SJR-415	4
Grand Total	86

Total Samples in Raw Data	
Total	88

Quality Assurance Codes Omitted	
Code	**Samples omitted**
Q	1
Q4 Q4	1
Grand Total	2

Water Quality Reports

ST JOHNS RIVER RIVER Station(s): (All)
Mean Total Organic Carbon (MG/L as C) 1996 to 2002
Storet Number 680

Summary

I. Descriptive Statistics

	Start	End
Dates	3/1/1996	12/1/2002
	Average	Std Dev
Mean	23.1834	5.2554
	lower	upper
95 % C.I.	21.9695	24.3973
	Period of Record	
1st Quartile	19.4375	
Median	22.5250	
2nd Quartile	26.5375	

1998-2002

Sample Size	Average	Std Dev
52.00	23.50	5.14
Median	22.6000	
1st Quartile	19.2250	
2nd Quartile	26.8417	

Testing Assumptions

I. Skewness

Statistic	0.6761

II. Kurtosis

Statistic	0.1506

III. KS Test - Normality

N	72
Critical Dmax	0.1044
Dmax	0.1078
Result	Reject Normality

Quality Assurance/Quality Control

QA for
ST JOHNS RIVER RIV Total Organic Carbon

All J,Q,T,V,!, #, and Y were omitted
Remark Codes in this data set

	10
(blank)	72
Grand Total	82

Seasonality (Oct-May vs June-Sept)

I. Descriptive Statistics

	Wet (J-S)	Dry (O-M)
N	25	47
Mean	22.6300	23.4778
SD	6.4731	4.1169
1st Quartile	17.9000	20.0500
Median	21.8000	22.6000
2nd Quartile	25.7000	26.6250

II. Parametric Statistical Test

Two Sample	t-statistic	P-value
t-test	0.5563	0.5798
Result	No Seasonality	

Trend Analysis

I. Least-Squares Regression

Slope	0.0028857	-81.677233	Intercept
SE slope	0.000749	27.22310156	SE intercept
r-square	0.1749469	4.602213488	SE y-est.
F value	14.843024	70	Sample N
SS regress	314.38072	1482.625829	

Slope Significance	P-value	0.000256055
Result	Slope greater than 0	

II. Decadal Rate Change Estimate

Rate (/10y)	10.532814	MG/L as C/Decade

III. Pearson's r Correlation Coefficient

Pearsons r	0.4183
Result	Weak Correlation

IV. Least-Squares Rank Regression

(Non-parametric Trend Analysis +/-)

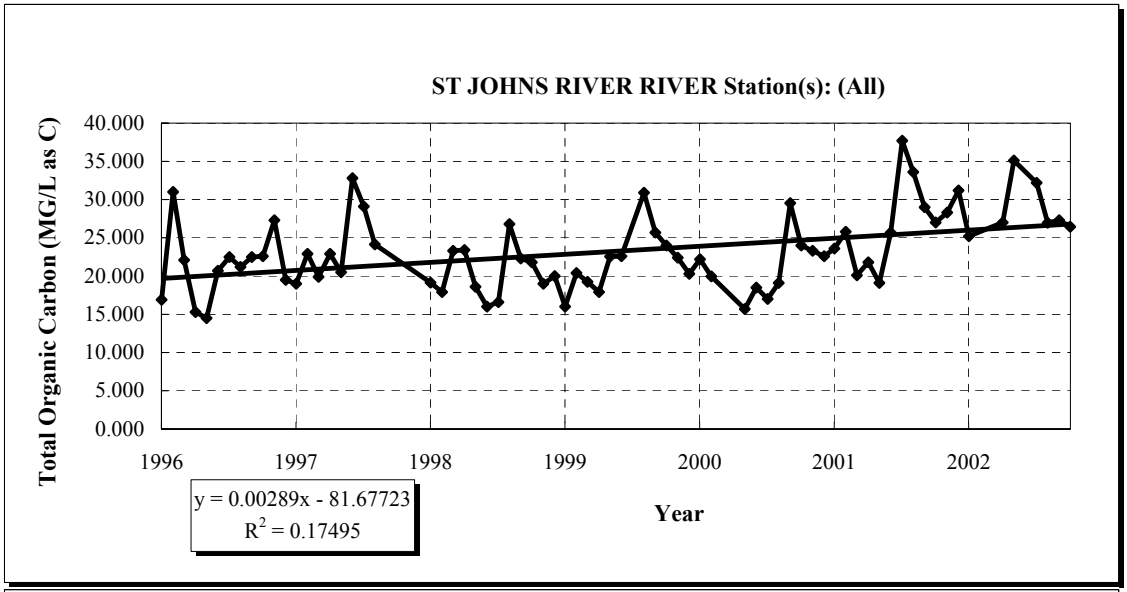
Slope	0.4226799	21.0721831	Intercept
SE slope	0.1083052	4.549031547	SE intercept
r-square	0.1787014	19.09920861	SE y-est.
F value	15.230878	70	Sample N
SS regress	5555.9161	25534.58386	

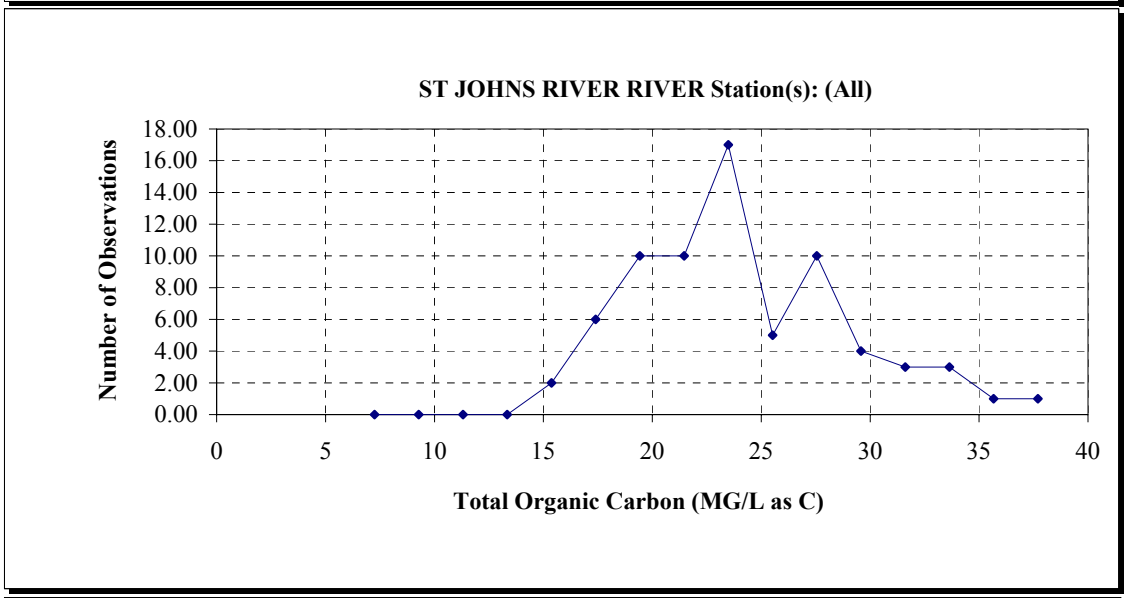
Slope Significance	P-value	0.000216251
Result	Slope different than 0	

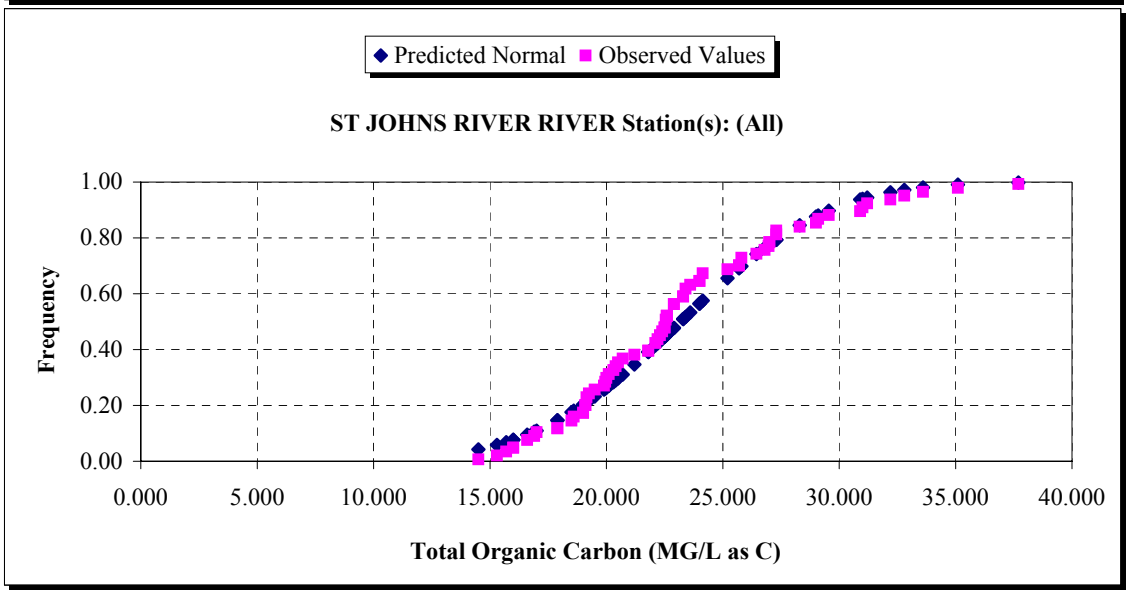
V. Rank Correlation

(Non-parametric Test of Association)

	rho	rho critical
Pearson (ranks)	0.4227	0.1952
Result:	Significant association	


ST JOHNS RIVER RIVER Station(s): (All)
Total Organic Carbon (MG/L as C)
40.000
35.000
30.000
25.000
20.000
15.000
10.000
5.000
0.000
1996
1997
1998
1999
2000
2001
2002
y = 0.00289x - 81.67723
R2 = 0.17495
Year


ST JOHNS RIVER RIVER Station(s): (All)
Number of Observations
18.00
16.00
14.00
12.00
10.00
8.00
6.00
4.00
2.00
0.00
0
5
10
15
20
25
30
35
40
Total Organic Carbon (MG/L as C)


Predicted Normal
Observed Values
ST JOHNS RIVER RIVER Station(s): (All)
Frequency
1.00
0.80
0.60
0.40
0.20
0.00
0.000
5.000
10.000
15.000
20.000
25.000
30.000
35.000
40.000
Total Organic Carbon (MG/L as C)

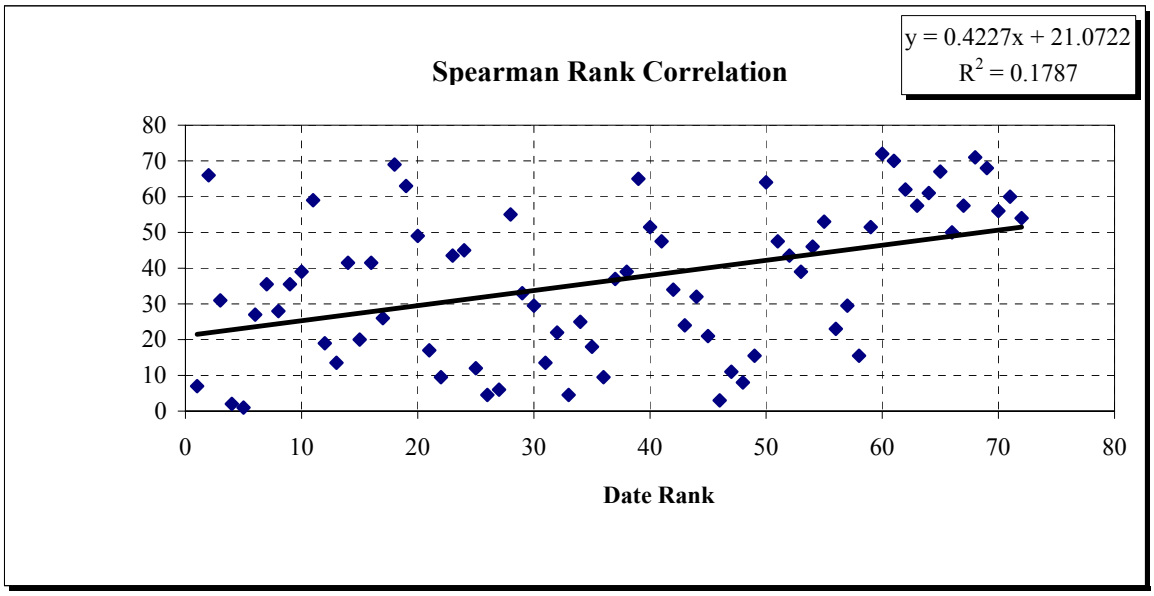


Table of Mean Period of Record Total Organic Carbon (MG/L as C)

			95% Confidence Interval		
Year	**Median**	**Annual Ave**	**Lower**	**Upper**	**# Months**
1996	21.6500	20.9300	18.0090	23.8510	10
1997	22.9000	23.8040	20.9510	26.6570	10
1998	20.4750	20.5850	18.4335	22.7365	10
1999	20.4000	21.6636	19.2110	24.1163	11
2000	20.1250	20.8700	18.4179	23.3221	10
2001	24.6500	25.7750	22.6815	28.8685	12
2002	27.3000	28.8574	26.7333	30.9815	9

Station Summary	
Station ID	**Samples collected**
OW-SJR-2	78
SJR-415	4
Grand Total	82

Total Samples in Raw Data	
Total	86

Quality Assurance Codes Omitted	
Code	**Samples omitted**
Q3	1
Q37	1
Q37#	1
Q45	1
Grand Total	4

Water Quality Reports

ST JOHNS RIVER RIVER Station(s): (All)
Mean Total Phosphorus-T (MG/L as P) 1996 to 2002
Storet Number 665

Summary

I. Descriptive Statistics

	Start	End
Dates	3/1/1996	12/1/2002
	Average	Std Dev
Mean	0.0975	0.0318
	lower	upper
95 % C.I.	0.0904	0.1047
	Period of Record	
1st Quartile	0.0657	
Median	0.0840	
2nd Quartile	0.1194	

1998-2002

Sample Size	Average	Std Dev
54.00	0.10	0.06

Median	0.0900
1st Quartile	0.0665
2nd Quartile	0.1302

Testing Assumptions

I. Skewness

Statistic	1.8930

II. Kurtosis

Statistic	5.0283

III. KS Test - Normality

N	76
Critical Dmax	0.1023
Dmax	0.1291
Result	Reject Normality

Quality Assurance/Quality Control

QA for
ST JOHNS RIVER RIV Total Phosphorus-T

All J,Q,T,V,!, #, and Y were omitted
Remark Codes in this data set

	10
(blank)	77
Grand Total	87

Seasonality (Oct-May vs June-Sept)

I. Descriptive Statistics

	Wet (J-S)	Dry (O-M)
N	25	51
Mean	0.1180	0.0875
SD	0.0563	0.0473
1st Quartile	0.0730	0.0570
Median	0.1100	0.0780
2nd Quartile	0.1380	0.1050

II. Parametric Statistical Test

Two Sample	t-statistic	P-value
t-test	0.0243	0.9807
Result	No Seasonality	

Trend Analysis

I. Least-Squares Regression

Slope	2.308E-05	-0.74051917	Intercept
SE slope	7.938E-06	0.288272031	SE intercept
r-square	0.1025379	0.049682163	SE y-est.
F value	8.4547338	74	Sample N
SS regress	0.020869	0.182655481	

Slope Significance	P-value	0.004802836
Result	Slope greater than 0	

II. Decadal Rate Change Estimate

Rate (/10y)	0.0842425	MG/L as P/Decade

III. Pearson's r Correlation Coefficient

Pearsons r	0.3202
Result	Weak Correlation

IV. Least-Squares Rank Regression

(Non-parametric Trend Analysis +/-)

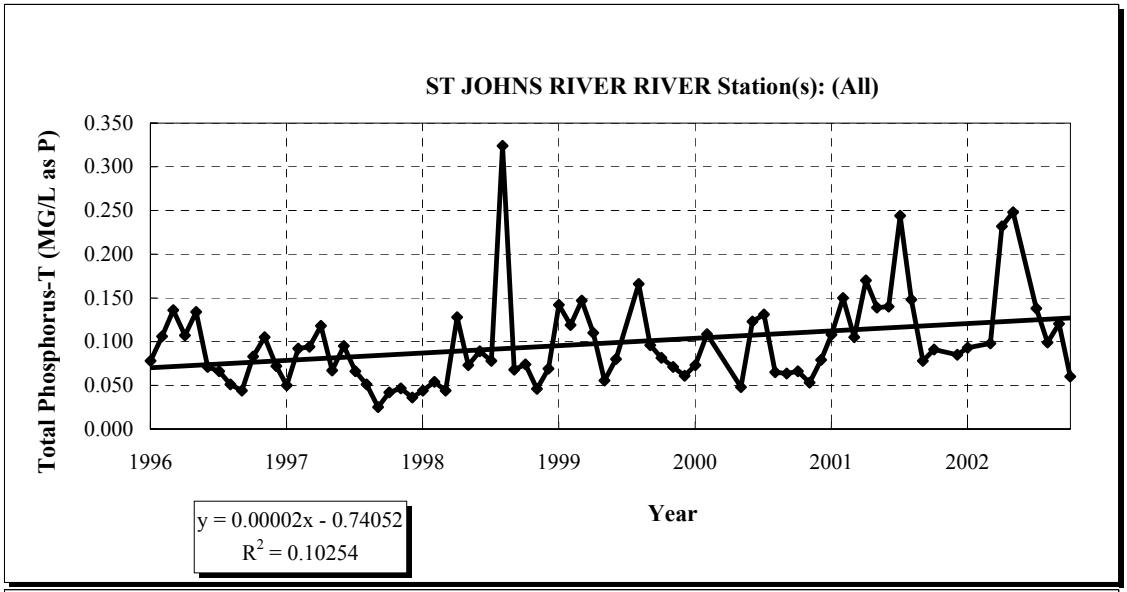
Slope	0.3348189	25.60947368	Intercept
SE slope	0.1095272	4.853301317	SE intercept
r-square	0.1121236	20.94662076	SE y-est.
F value	9.3449339	74	Sample N
SS regress	4100.1918	32468.30817	

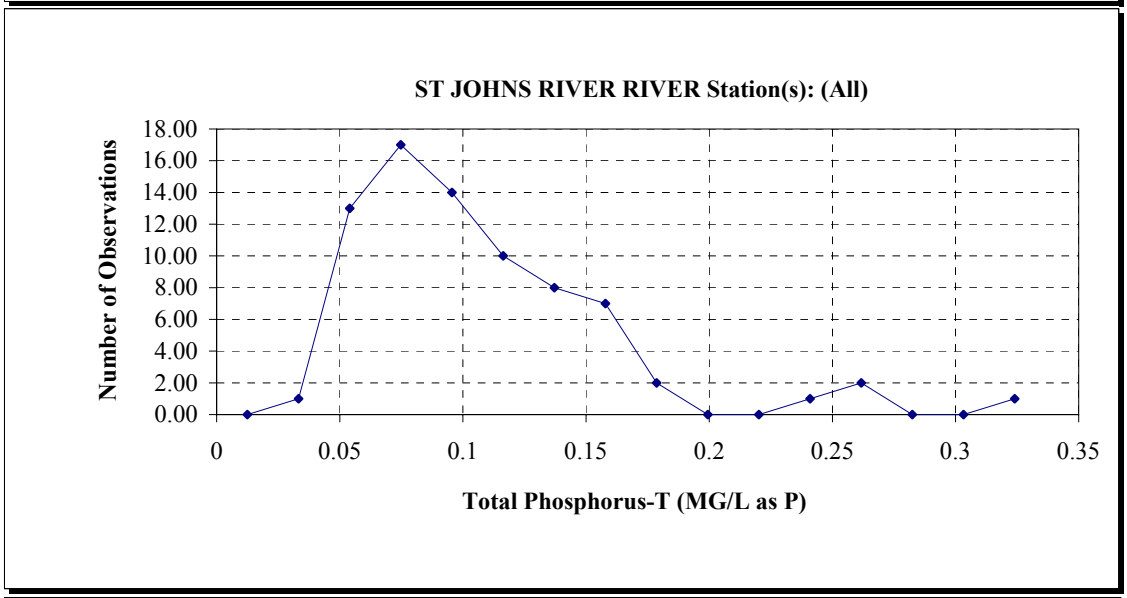
Slope Significance	P-value	0.003110294
Result	Slope different than 0	

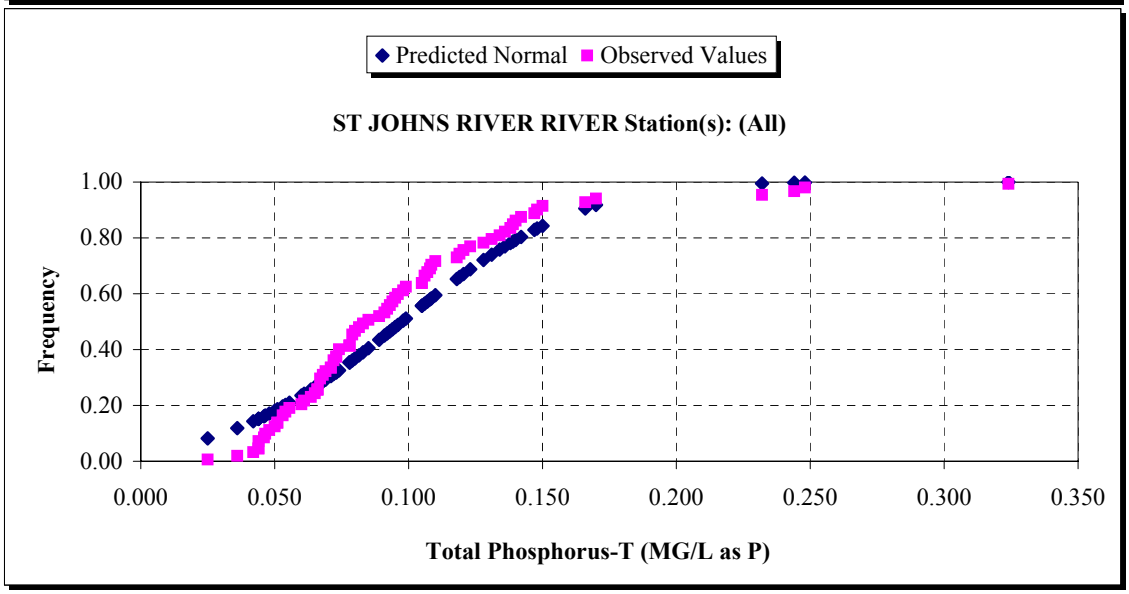
V. Rank Correlation

(Non-parametric Test of Association)

	rho	rho critical
Pearson (ranks)	0.3348	0.1899
Result:	Significant association	


ST JOHNS RIVER RIVER Station(s): (All)
Total Phosphorus-T (MG/L as P)
0.350
0.300
0.250
0.200
0.150
0.100
0.050
0.000
1996
1997
1998
1999
2000
2001
2002
Year
y = 0.00002x - 0.74052
R2 = 0.10254


ST JOHNS RIVER RIVER Station(s): (All)
Number of Observations
18.00
16.00
14.00
12.00
10.00
8.00
6.00
4.00
2.00
0.00
0
0.05
0.1
0.15
0.2
0.25
0.3
0.35
Total Phosphorus-T (MG/L as P)


Predicted Normal
Observed Values
ST JOHNS RIVER RIVER Station(s): (All)
Frequency
1.00
0.80
0.60
0.40
0.20
0.00
0.000
0.050
0.100
0.150
0.200
0.250
0.300
0.350
Total Phosphorus-T (MG/L as P)

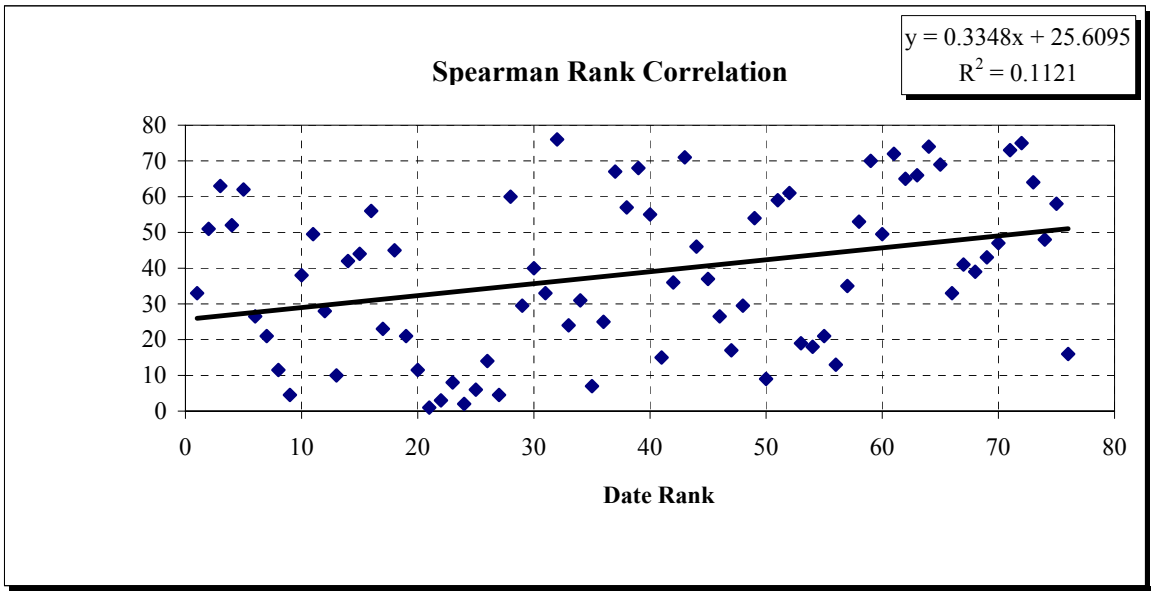


Table of Mean Period of Record Total Phosphorus-T (MG/L as P)

			95% Confidence Interval		
Year	**Median**	**Annual Ave**	**Lower**	**Upper**	**# Months**
1996	0.0805	0.0876	0.0677	0.1075	10
1997	0.0695	0.0731	0.0572	0.0890	12
1998	0.0705	0.0882	0.0438	0.1326	12
1999	0.0960	0.1011	0.0779	0.1243	11
2000	0.0685	0.0810	0.0632	0.0988	10
2001	0.1235	0.1254	0.0963	0.1545	12
2002	0.0990	0.1304	0.0873	0.1735	9

Station Summary	
Station ID	**Samples collected**
OW-SJR-2	83
SJR-415	4
Grand Total	87

Total Samples in Raw Data	
Total	88

Quality Assurance Codes Omitted	
Code	**Samples omitted**
Q11	1
Grand Total	1

Water Quality Reports

ST JOHNS RIVER RIVER Station(s): (All)
Mean Total Suspended Solids (MG/L) 1996 to 2002
Storet Number 530

Summary

I. Descriptive Statistics

	Start	End
Dates	4/1/1996	12/1/2002
	Average	Std Dev
Mean	11.6210	4.5178
	lower	upper
95 % C.I.	10.5846	12.6574
	Period of Record	
1st Quartile	5.0000	
Median	7.0000	
2nd Quartile	15.0000	

1998-2002

Sample Size	Average	Std Dev
53.00	13.12	11.03
Median	8.0000	
1st Quartile	5.0000	
2nd Quartile	16.0000	

Testing Assumptions

I. Skewness

Statistic	1.6615

II. Kurtosis

Statistic	2.0942

III. KS Test - Normality

N	73
Critical Dmax	0.1044
Dmax	0.1884
Result	Reject Normality

Quality Assurance/Quality Control

QA for
ST JOHNS RIVER RIV Total Suspended Solids

All J,Q,T,V,!, #, and Y were omitted
Remark Codes in this data set

	1
I	4
T	10
U	18
(blank)	51
Grand Total	84

Seasonality (Oct-May vs June-Sept)

I. Descriptive Statistics

	Wet (J-S)	Dry (O-M)
N	25	48
Mean	13.0400	10.8819
SD	10.5138	9.8601
1st Quartile	5.0000	5.0000
Median	12.0000	6.0000
2nd Quartile	16.0000	14.2500

II. Parametric Statistical Test

Two Sample	t-statistic	P-value
t-test	0.3998	0.6905
Result	No Seasonality	

Trend Analysis

I. Least-Squares Regression

Slope	0.0034938	-115.290925	Intercept
SE slope	0.0016338	59.35747718	SE intercept
r-square	0.0605131	9.827581308	SE y-est.
F value	4.5731678	71	Sample N
SS regress	441.68274	6857.27616	

Slope Significance	P-value	0.035918216
Result	Slope greater than 0	

II. Decadal Rate Change Estimate

Rate (/10y)	12.752411	MG/L/Decade

III. Pearson's r Correlation Coefficient

Pearsons r	0.2460
Result	Weak Correlation

IV. Least-Squares Rank Regression

(Non-parametric Trend Analysis +/-)

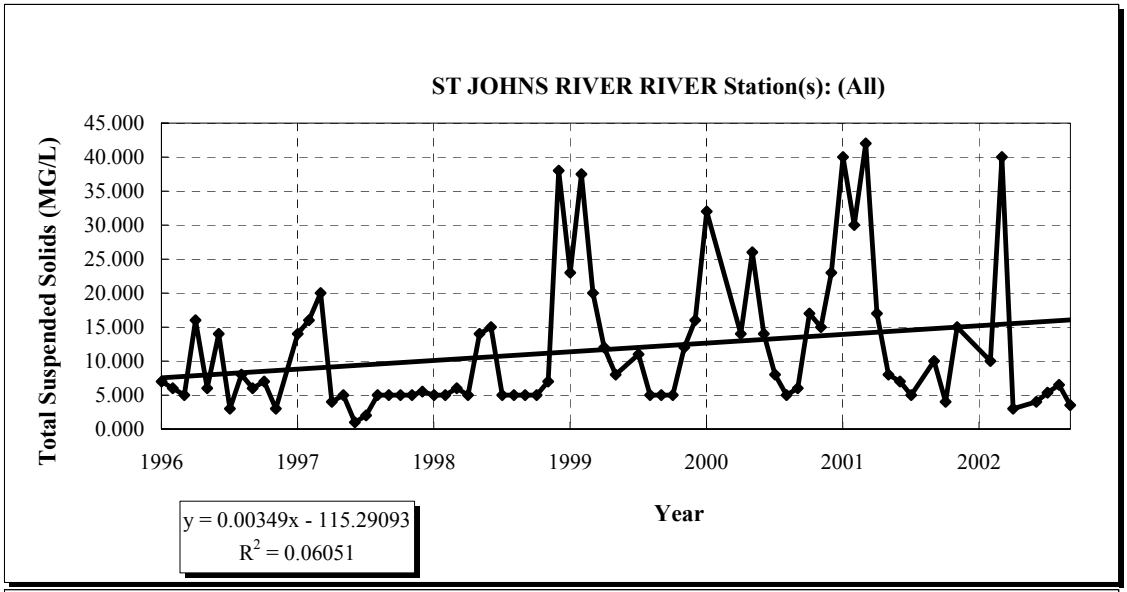
Slope	0.2063125	29.36643836	Intercept
SE slope	0.1151375	4.902479313	SE intercept
r-square	0.0432663	20.72859101	SE y-est.
F value	3.2108295	71	Sample N
SS regress	1379.6115	30506.88847	

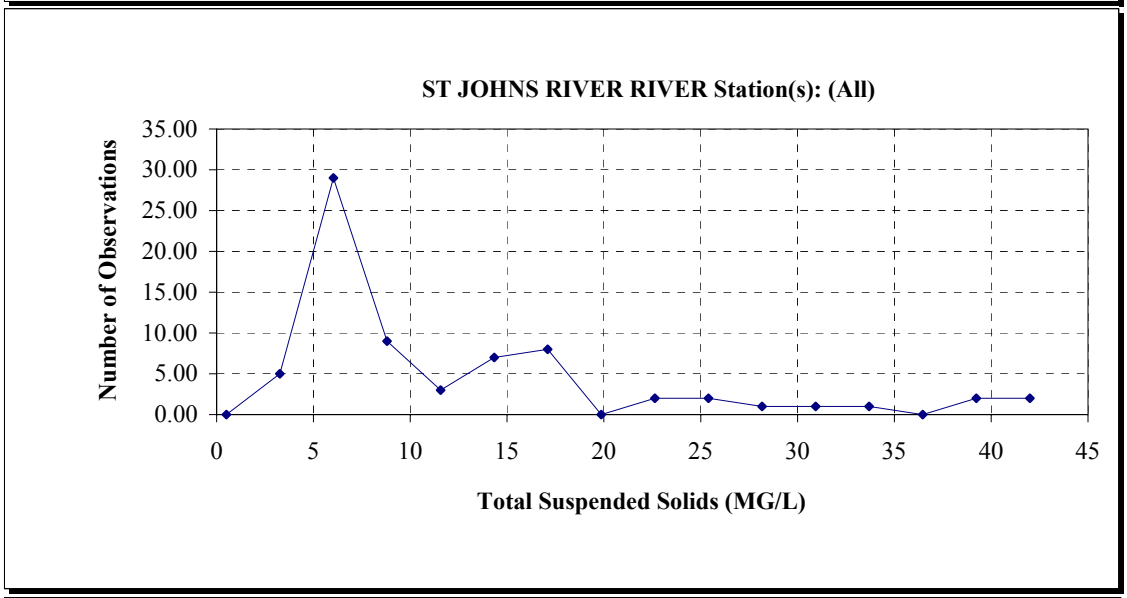
Slope Significance	P-value	0.07741323
Result	Slope equivalent to 0	

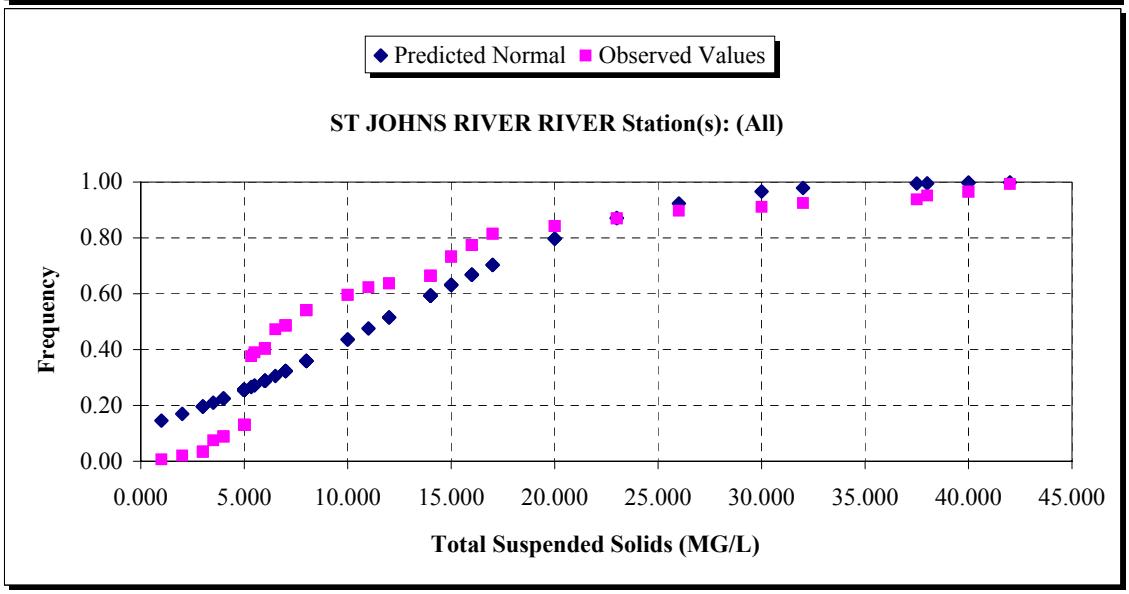
V. Rank Correlation

(Non-parametric Test of Association)

	rho	rho critical
Pearson (ranks)	0.2080	0.1939
Result:	Significant association	


ST JOHNS RIVER RIVER Station(s): (All)
Total Suspended Solids (MG/L)
45.000
40.000
35.000
30.000
25.000
20.000
15.000
10.000
5.000
0.000
1996
1997
1998
1999
2000
2001
2002
Year
y = 0.00349x - 115.29093
R2 = 0.06051


ST JOHNS RIVER RIVER Station(s): (All)
Number of Observations
35.00
30.00
25.00
20.00
15.00
10.00
5.00
0.00
0
5
10
15
20
25
30
35
40
45
Total Suspended Solids (MG/L)


Predicted Normal
Observed Values
ST JOHNS RIVER RIVER Station(s): (All)
Frequency
1.00
0.80
0.60
0.40
0.20
0.00
0.000
5.000
10.000
15.000
20.000
25.000
30.000
35.000
40.000
45.000
Total Suspended Solids (MG/L)

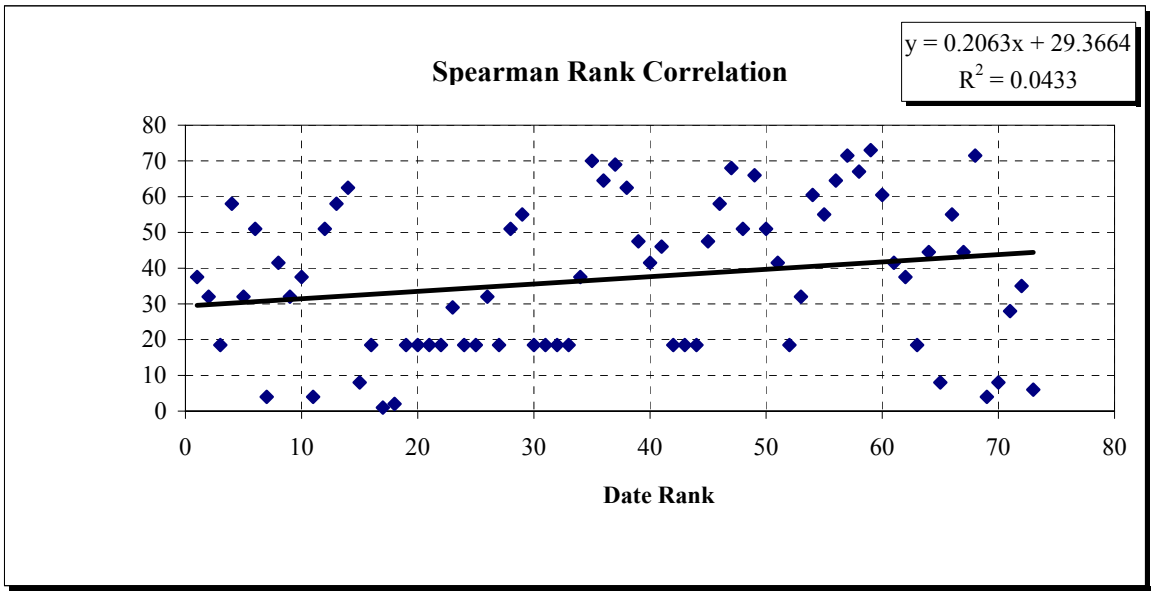


Table of Mean Period of Record Total Suspended Solids (MG/L)

			95% Confidence Interval		
Year	**Median**	**Annual Ave**	**Lower**	**Upper**	**# Months**
1996	6.0000	7.8889	5.0894	10.6884	9
1997	5.0000	7.4545	3.7418	11.1673	11
1998	5.0000	6.7083	4.6384	8.7783	12
1999	11.0000	15.5909	8.2137	22.9681	11
2000	13.0000	13.8000	8.1890	19.4110	10
2001	17.0000	19.4545	11.8161	27.0930	11
2002	5.3333	10.1481	2.4108	17.8855	9

Station Summary	
Station ID	**Samples collected**
OW-SJR-2	80
SJR-415	4
Grand Total	84

Total Samples in Raw Data	
Total	88

Quality Assurance Codes Omitted	
Code	**Samples omitted**
Q	2
Q1	1
Q6 I	1
Grand Total	4

Water Quality Reports

ST JOHNS RIVER RIVER Station(s): (All)
Mean Turbidity, Laboratory Nephelometric (NTU) 1996 to 2002
Storet Number 82079

Summary

I. Descriptive Statistics

	Start	End
Dates	3/1/1996	12/1/2002
	Average	Std Dev
Mean	4.7391	2.5637
	lower	upper
95 % C.I.	4.1549	5.3232
	Period of Record	
1st Quartile	1.2500	
Median	3.0000	
2nd Quartile	6.0500	

1998-2002

Sample Size	Average	Std Dev
53.00	5.38	5.15
Median	3.3000	
1st Quartile	1.8000	
2nd Quartile	6.4000	

Testing Assumptions

I. Skewness

Statistic	1.6598

II. Kurtosis

Statistic	2.1893

III. KS Test - Normality

N	74
Critical Dmax	0.1029
Dmax	0.2017
Result	Reject Normality

Quality Assurance/Quality Control

QA for
ST JOHNS RIVER RIV Turbidity, Laboratory Nephe

All J,Q,T,V,!, #, and Y were omitted
Remark Codes in this data set

	7
I	3
T	1
(blank)	74
Grand Total	85

Seasonality (Oct-May vs June-Sept)

I. Descriptive Statistics

	Wet (J-S)	Dry (O-M)
N	24	50
Mean	5.8896	4.1868
SD	4.8412	4.4914
1st Quartile	2.7500	1.2000
Median	4.2000	2.8500
2nd Quartile	8.3500	4.7750

II. Parametric Statistical Test

Two Sample	t-statistic	P-value
t-test	0.1545	0.8776
Result	No Seasonality	

Trend Analysis

I. Least-Squares Regression

Slope	0.0015365	-51.0516997	Intercept
SE slope	0.0007474	27.14479222	SE intercept
r-square	0.0554388	4.544876732	SE y-est.
F value	4.2258684	72	Sample N
SS regress	87.289134	1487.225125	

Slope Significance	P-value	0.04343937
Result	Slope greater than 0	

II. Decadal Rate Change Estimate

Rate (/10y)	5.6083025	NTU/Decade

III. Pearson's r Correlation Coefficient

Pearsons r	0.2355
Result	Weak Correlation

IV. Least-Squares Rank Regression

(Non-parametric Trend Analysis +/-)

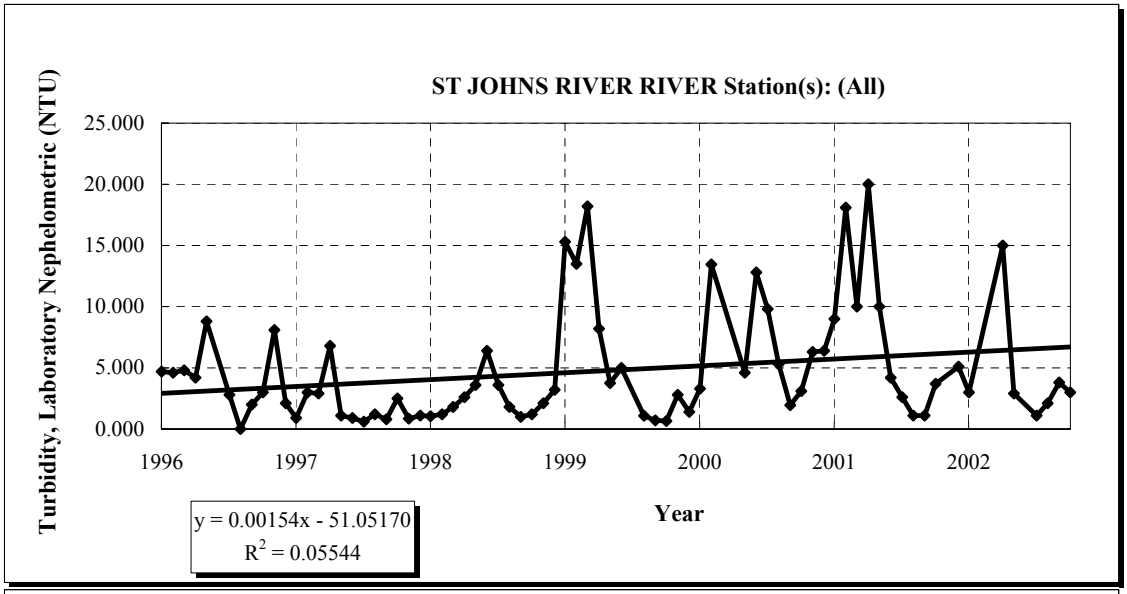
Slope	0.2378526	28.58052573	Intercept
SE slope	0.1144285	4.938356027	SE intercept
r-square	0.0566116	21.02575283	SE y-est.
F value	4.3206339	72	Sample N
SS regress	1910.0757	31829.92432	

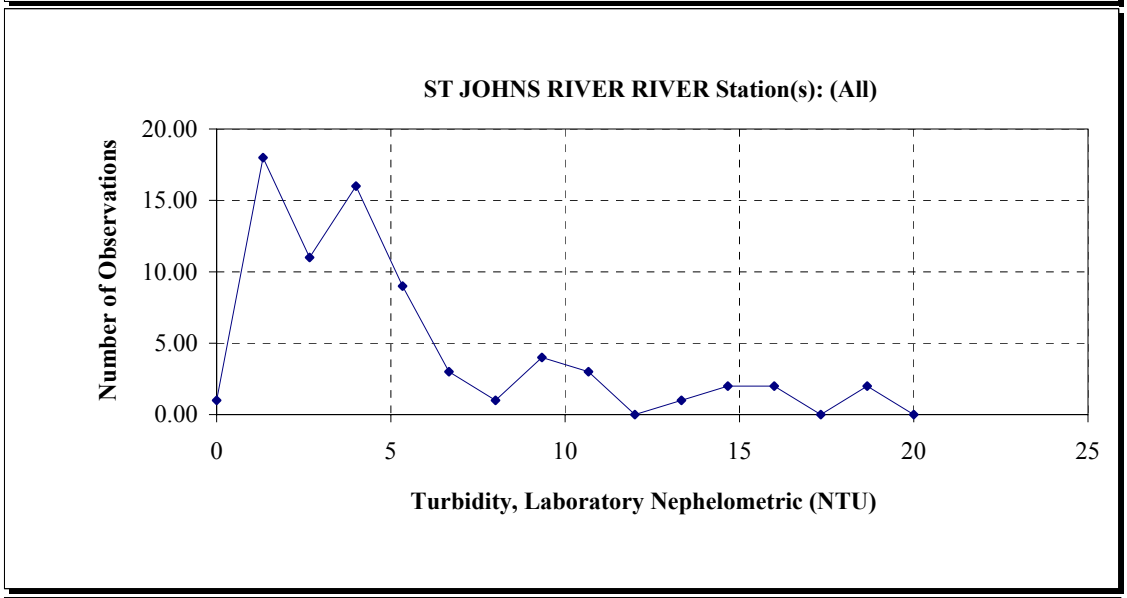
Slope Significance	P-value	0.041217158
Result	Slope different than 0	

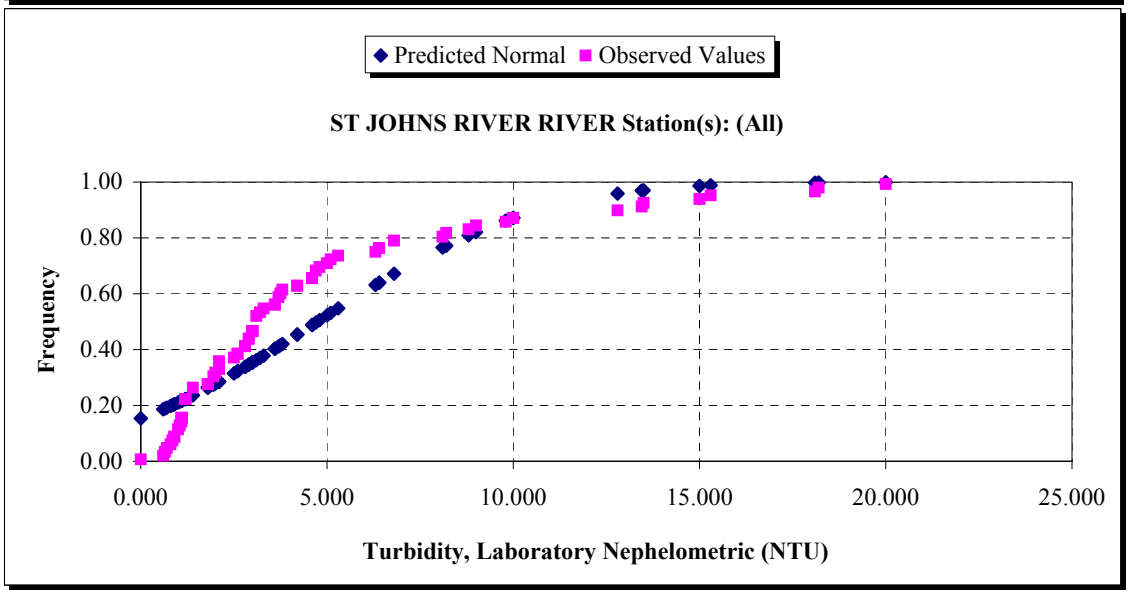
V. Rank Correlation

(Non-parametric Test of Association)

	rho	rho critical
Pearson (ranks)	0.2379	0.1925
Result:	Significant association	


ST JOHNS RIVER RIVER Station(s): (All)
Turbidity, Laboratory Nephelometric (NTU)
25.000
20.000
15.000
10.000
5.000
0.000
1996
1997
1998
1999
2000
2001
2002
Year
y = 0.00154x - 51.05170
R2 = 0.05544


ST JOHNS RIVER RIVER Station(s): (All)
Number of Observations
20.00
15.00
10.00
5.00
0.00
0
5
10
15
20
25
Turbidity, Laboratory Nephelometric (NTU)


Predicted Normal
Observed Values
ST JOHNS RIVER RIVER Station(s): (All)
Frequency
1.00
0.80
0.60
0.40
0.20
0.00
0.000
5.000
10.000
15.000
20.000
25.000
Turbidity, Laboratory Nephelometric (NTU)

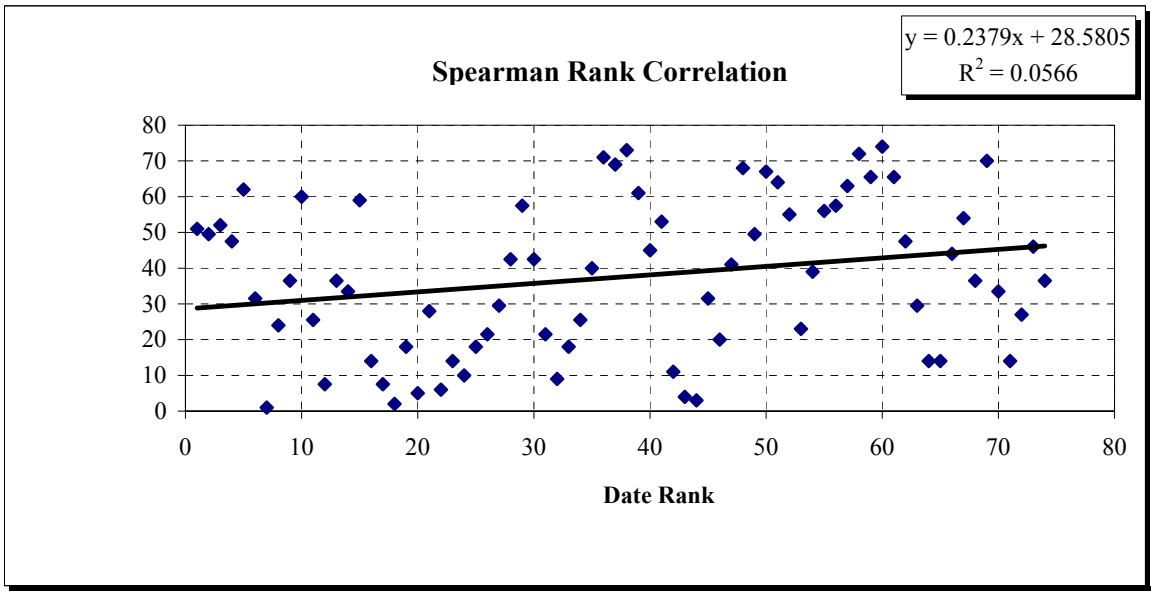


Table of Mean Period of Record Turbidity, Laboratory Nephelometric (NTU)

			95% Confidence Interval		
Year	**Median**	**Annual Ave**	**Lower**	**Upper**	**# Months**
1996	4.2000	3.8778	2.2963	5.4592	9
1997	1.6500	2.5750	1.1931	3.9569	12
1998	1.5000	2.1833	1.2516	3.1151	12
1999	3.7500	6.5173	2.7639	10.2707	11
2000	3.9500	5.8500	3.0635	8.6365	10
2001	6.3500	7.7083	4.2258	11.1909	12
2002	3.0000	4.5000	1.4515	7.5485	8

Station Summary	
Station ID	**Samples collected**
OW-SJR-2	81
SJR-415	4
Grand Total	85

Total Samples in Raw Data	
Total	87

Quality Assurance Codes Omitted	
Code	**Samples omitted**
Q	1
Q3	1
Grand Total	2

Water Quality Reports

Lake Monroe LAKE Station(s): (All)
Mean Chl-a (MG/M3) 1991 to 2002
Storet Number 32210

Summary

I. Descriptive Statistics

	Start	End
Dates	5/1/1991	10/1/2002
	Average	Std Dev
Mean	31.6344	18.9963
	lower	upper
95 % C.I.	26.7872	36.4817
	Period of Record	
1st Quartile	6.5202	
Median	22.3700	
2nd Quartile	40.6501	
	1998-2002	
Sample Size	Average	Std Dev
29	37.2078	38.7011
Median	27.4521	
1st Quartile	11.2000	
2nd Quartile	42.8169	

Testing Assumptions

I. Skewness

Statistic	2.2782

II. Kurtosis

Statistic	5.5382

III. KS Test - Normality

N	59
Critical Dmax	0.1151
Dmax	0.1955
Result	Reject Normality

Quality Assurance/Quality Control

QA for
Lake Monroe LA Chl-a

All J,Q,T,V,!, #, and Y were omitted
Remark Codes in this data set

W	1
(blank)	66
Grand Total	67

Seasonality (Oct-May vs June-Sept)

I. Descriptive Statistics

	Wet (J-S)	Dry (O-M)
N	22	37
Mean	37.8202	27.9564
SD	37.4485	36.1385
1st Quartile	10.8247	6.4100
Median	32.0408	16.0190
2nd Quartile	42.5000	33.4710

II. Parametric Statistical Test

Two Sample	t-statistic	P-value
t-test	0.3272	0.7447
Result	No Seasonality	

Trend Analysis

I. Least-Squares Regression

Slope	0.0045356	-129.91038	Intercept
SE slope	0.0038866	138.5123833	SE intercept
r-square	0.0233341	36.51307208	SE y-est.
F value	1.3618232	57	Sample N
SS regress	1815.5887	75992.65268	

Slope Significance	P-value	0.248080722
Result	Slope not greater than 0	

II. Decadal Rate Change Estimate

Rate (/10y)	16.554891	MG/M3/Decade

III. Pearson's r Correlation Coefficient

Pearsons r	0.1528
Result	Weak Correlation

IV. Least-Squares Rank Regression

(Non-parametric Trend Analysis +/-)

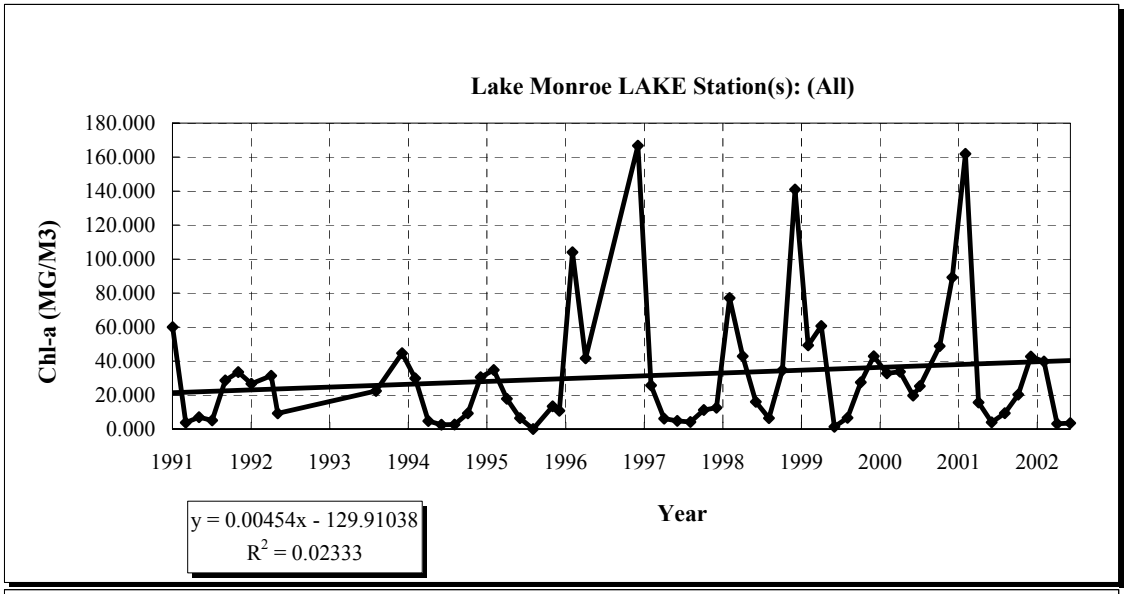
Slope	0.126242	26.21274109	Intercept
SE slope	0.1313935	4.53260107	SE intercept
r-square	0.015937	17.18695821	SE y-est.
F value	0.9231227	57	Sample N
SS regress	272.68264	16837.31736	

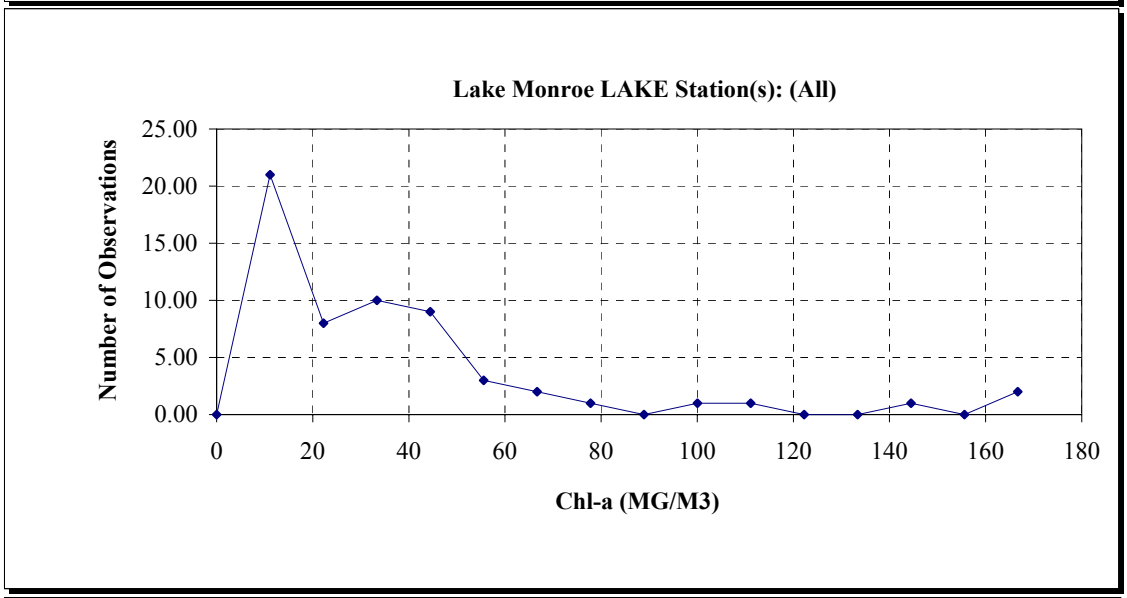
Slope Significance	P-value	0.340714503
Result	Slope equivalent to 0	

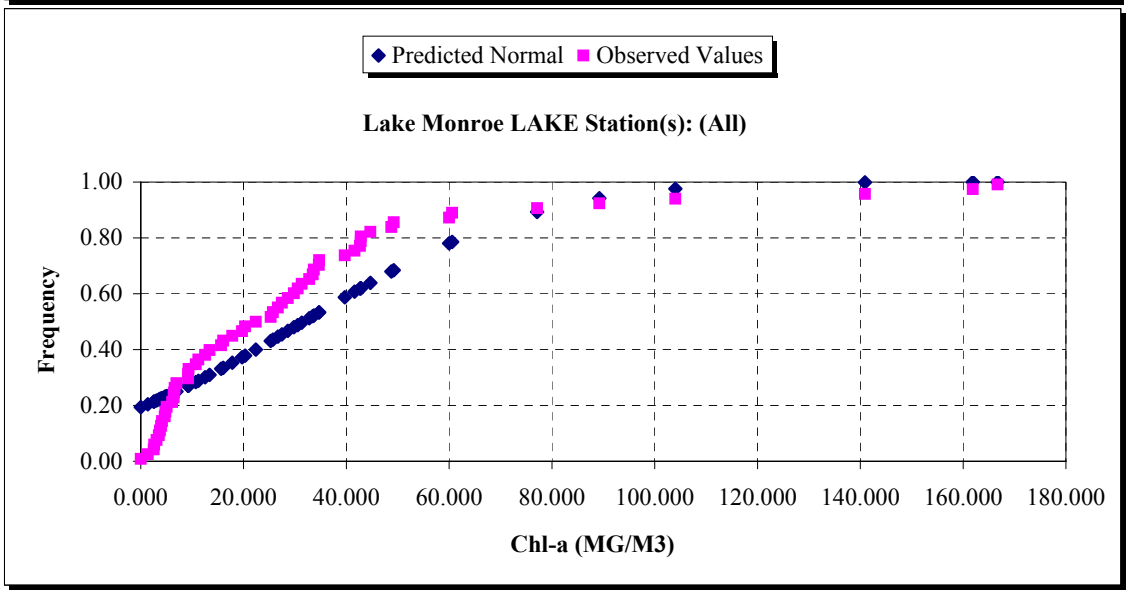
V. Rank Correlation

(Non-parametric Test of Association)

	rho	rho critical
Pearson (ranks)	0.1262	0.2160
Result:	No significant association	


Lake Monroe LAKE Station(s): (All)
Chl-a (MG/M3)
180.000
160.000
140.000
120.000
100.000
80.000
60.000
40.000
20.000
0.000
1991
1992
1993
1994
1995
1996
1997
1998
1999
2000
2001
2002
Year
y = 0.00454x - 129.91038
R2 = 0.02333


Lake Monroe LAKE Station(s): (All)
Number of Observations
25.00
20.00
15.00
10.00
5.00
0.00
0
20
40
60
80
100
120
140
160
180
Chl-a (MG/M3)


Predicted Normal
Observed Values
Lake Monroe LAKE Station(s): (All)
Frequency
1.00
0.80
0.60
0.40
0.20
0.00
0.000
20.000
40.000
60.000
80.000
100.000
120.000
140.000
160.000
180.000
Chl-a (MG/M3)

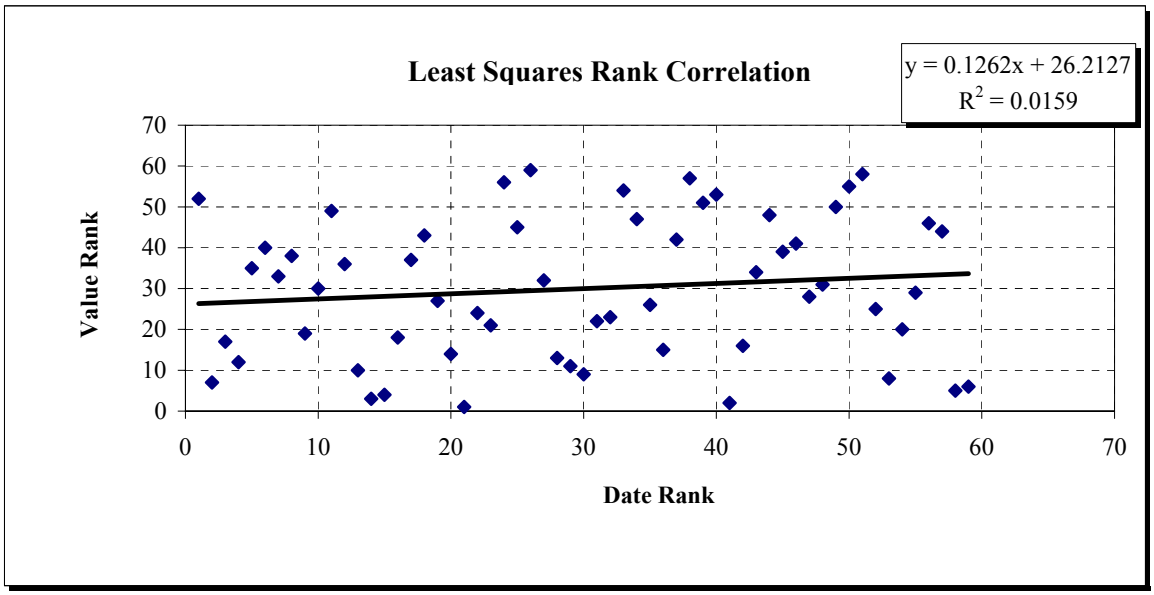


Table of Mean Period of Record Chl-a (MG/M3)

			95% Confidence Interval		
Year	**Median**	**Annual Ave**	**Lower**	**Upper**	**# Months**
1991	5.9830	18.9268	-7.9311	45.7846	4
1992	28.5950	25.8558	17.3950	34.3166	5
1993	22.3700	22.3700	#DIV/0!	#DIV/0!	1
1994	4.6680	16.8520	-0.1102	33.8142	5
1995	13.5080	16.4435	5.3771	27.5099	6
1996	27.5000	42.4250	-0.0700	84.9200	4
1997	6.1000	41.4860	-20.3712	103.3432	5
1998	14.2595	27.6757	5.7327	49.6188	6
1999	41.9296	48.8839	8.3192	89.4486	6
2000	30.1096	30.2837	23.8854	36.6820	6
2001	32.1944	54.7909	5.6248	103.9569	6
2002	20.2837	21.8440	5.1952	38.4929	5

Station Summary	
Station ID	**Samples collected**
LMAC	67
Grand Total	67

Total Samples in Raw Data	
Total	75

Quality Assurance Codes Omitted	
Code	**Samples omitted**
J	6
Q	2
Grand Total	8

Water Quality Reports

Lake Monroe LAKE Station(s): (All)
Mean TN-T (MG/L as N) 1991 to 2002
Storet Number 600

Summary

I. Descriptive Statistics

	Start	End
Dates	5/1/1991	10/1/2002
	Average	Std Dev
Mean	1.7487	0.6591
	lower	upper
95 % C.I.	1.5833	1.9141
	Period of Record	
1st Quartile	1.4335	
Median	1.7040	
2nd Quartile	1.9670	
	1998-2002	
Sample Size	Average	Std Dev
28	1.8188	0.6542
Median	1.7235	
1st Quartile	1.4955	
2nd Quartile	2.0538	

Testing Assumptions

I. Skewness

Statistic	0.9392

II. Kurtosis

Statistic	1.9849

III. KS Test - Normality

N	61
Critical Dmax	0.1132
Dmax	0.1332
Result	Reject Normality

Quality Assurance/Quality Control

QA for
Lake Monroe LA TN-T

All J,Q,T,V,!, #, and Y were omitted
Remark Codes in this data set

	41
T	20
U	6
W	3
Grand Total	70

Seasonality (Oct-May vs June-Sept)

I. Descriptive Statistics

	Wet (J-S)	Dry (O-M)
N	21	40
Mean	1.7658	1.7397
SD	0.8309	0.4436
1st Quartile	1.4335	1.4650
Median	1.6440	1.7075
2nd Quartile	2.0680	1.9224

II. Parametric Statistical Test

Two Sample	t-statistic	P-value
t-test	0.8945	0.3747
Result	No Seasonality	

Trend Analysis

I. Least-Squares Regression

Slope	4.73E-06	1.580271336	Intercept
SE slope	6.58E-05	2.344175936	SE intercept
r-square	8.758E-05	0.60351966	SE y-est.
F value	0.0051678	59	Sample N
SS regress	0.0018823	21.48992285	

Slope Significance	P-value	0.94293457
Result	Slope not greater than 0	

II. Decadal Rate Change Estimate

Rate (/10y)	0.0172658	MG/L as N/Decade

III. Pearson's r Correlation Coefficient

Pearsons r	0.0094
Result	Weak Correlation

IV. Least-Squares Rank Regression

(Non-parametric Trend Analysis +/-)

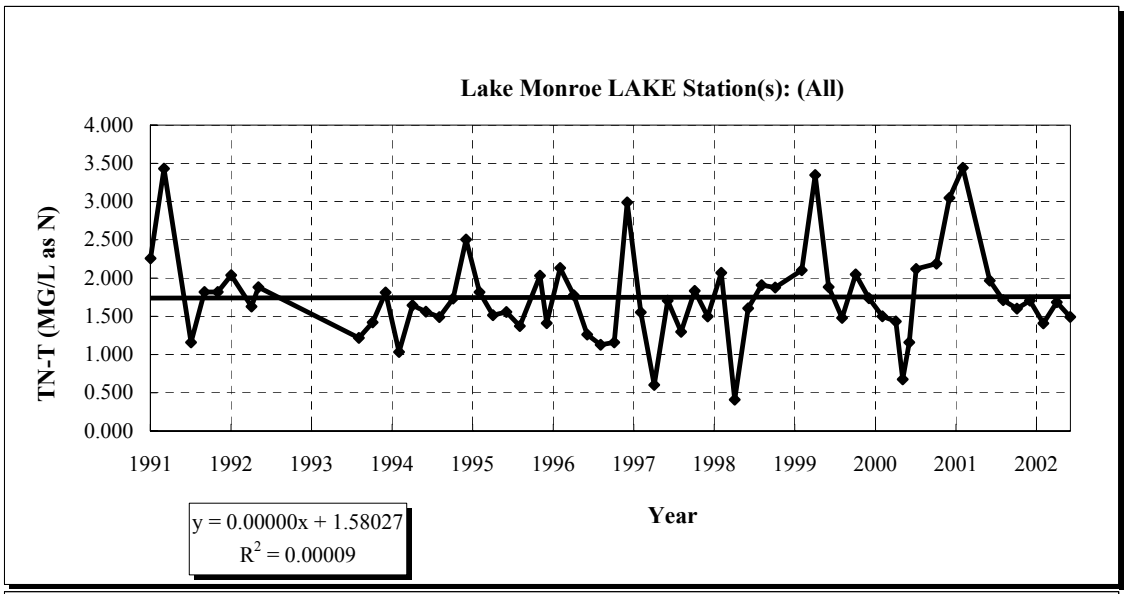
Slope	0.029799	30.07622951	Intercept
SE slope	0.1301294	4.639253605	SE intercept
r-square	0.000888	17.89456325	SE y-est.
F value	0.052439	59	Sample N
SS regress	16.791764	18892.70824	

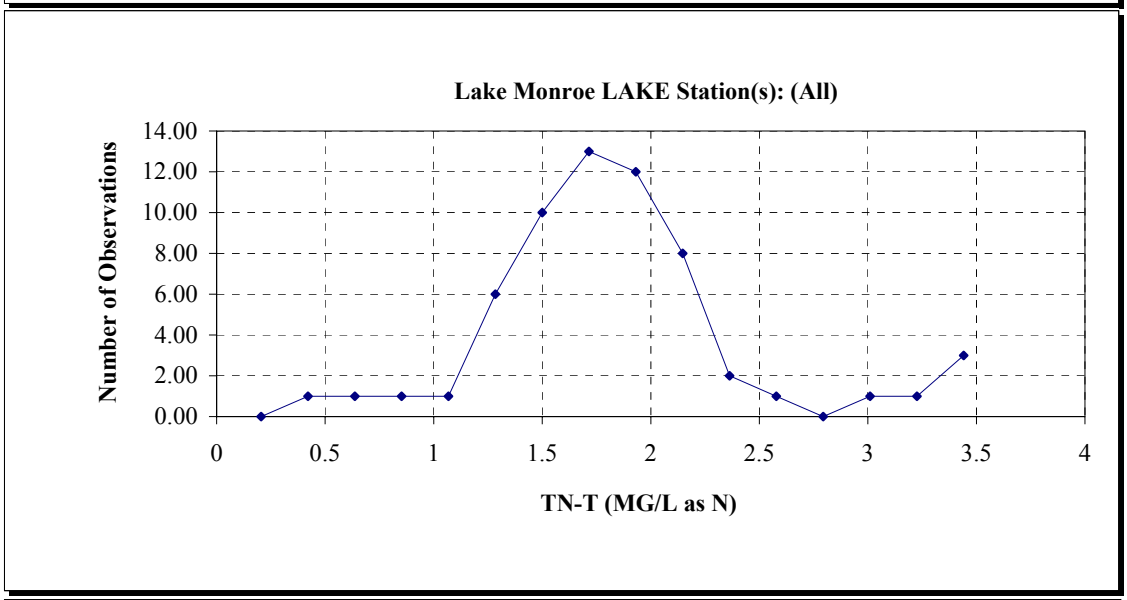
Slope Significance	P-value	0.819664305
Result	Slope equivalent to 0	

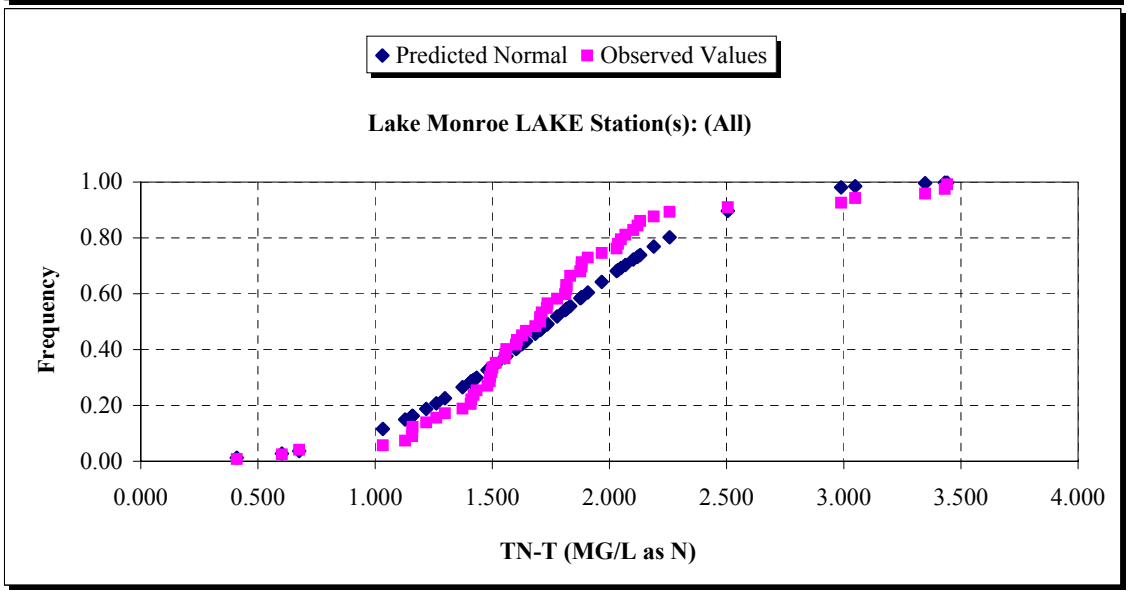
V. Rank Correlation

(Non-parametric Test of Association)

	rho	rho critical
Pearson (ranks)	0.0298	0.2124
Result:	No significant association	


Lake Monroe LAKE Station(s): (All)
TN-T (MG/L as N)
4.000
3.500
3.000
2.500
2.000
1.500
1.000
0.500
0.000
1991
1992
1993
1994
1995
1996
1997
1998
1999
2000
2001
2002
Year
y = 0.00000x + 1.58027
R2 = 0.00009


Lake Monroe LAKE Station(s): (All)
Number of Observations
14.00
12.00
10.00
8.00
6.00
4.00
2.00
0.00
0
0.5
1
1.5
2
2.5
3
3.5
4
TN-T (MG/L as N)


Predicted Normal
Observed Values
Lake Monroe LAKE Station(s): (All)
Frequency
1.00
0.80
0.60
0.40
0.20
0.00
0.000
0.500
1.000
1.500
2.000
2.500
3.000
3.500
4.000
TN-T (MG/L as N)

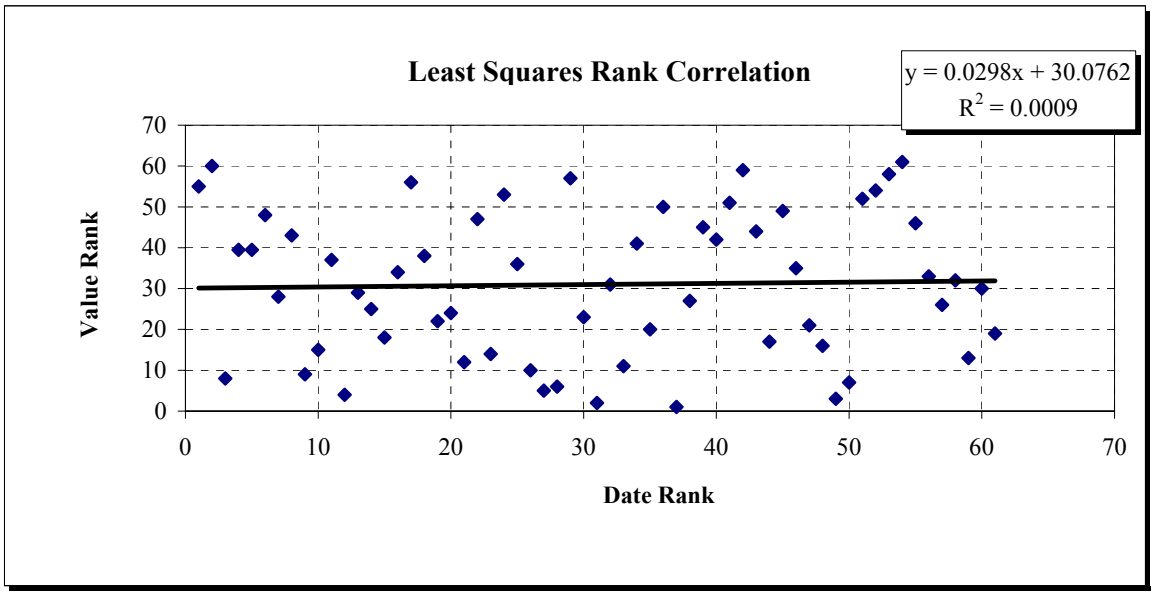


Table of Mean Period of Record TN-T (MG/L as N)

			95% Confidence Interval		
Year	**Median**	**Annual Ave**	**Lower**	**Upper**	**# Months**
1991	2.2570	2.2827	0.9975	3.5678	3
1992	1.8170	1.8358	1.7067	1.9649	5
1993	1.2180	1.2180	#DIV/0!	#DIV/0!	1
1994	1.5245	1.4928	1.2825	1.7031	6
1995	1.6445	1.7497	1.4277	2.0717	6
1996	1.5940	1.6232	1.2895	1.9568	6
1997	1.4255	1.5507	0.9095	2.1918	6
1998	1.7190	1.5534	1.0758	2.0310	6
1999	1.8820	2.1374	1.5130	2.7618	5
2000	1.5010	1.5249	1.1500	1.8998	7
2001	2.1890	2.4715	1.8234	3.1196	5
2002	1.6010	1.5776	1.4666	1.6886	5

Station Summary	
Station ID	**Samples collected**
LKMON	3
LMAC	67
Grand Total	70

Total Samples in Raw Data	
Total	74

Quality Assurance Codes Omitted	
Code	**Samples omitted**
Q	1
Q1	1
Q11T	1
Q3	1
Grand Total	4

Water Quality Reports

Lake Monroe LAKE Station(s): (All)
Mean TP-T (MG/L as P) 1991 to 2002
Storet Number 665

Summary

I. Descriptive Statistics

	Start	End
Dates	5/1/1991	10/1/2002
	Average	Std Dev
Mean	0.0906	0.0628
	lower	upper
95 % C.I.	0.0739	0.1074
	Period of Record	
1st Quartile	0.0644	
Median	0.0850	
2nd Quartile	0.1005	

1998-2002

Sample Size	Average	Std Dev
24	0.0940	0.0320
Median	0.0915	
1st Quartile	0.0765	
2nd Quartile	0.1028	

Testing Assumptions

I. Skewness

Statistic	1.9434

II. Kurtosis

Statistic	4.6542

III. KS Test - Normality

N	54
Critical Dmax	0.1200
Dmax	0.1593
Result	Reject Normality

Quality Assurance/Quality Control

QA for
Lake Monroe LA TP-T

All J,Q,T,V,!, #, and Y were omitted
Remark Codes in this data set

T	1
(blank)	62
Grand Total	63

Seasonality (Oct-May vs June-Sept)

I. Descriptive Statistics

	Wet (J-S)	Dry (O-M)
N	17	37
Mean	0.1063	0.0834
SD	0.0499	0.0314
1st Quartile	0.0770	0.0630
Median	0.0920	0.0800
2nd Quartile	0.1145	0.0950

II. Parametric Statistical Test

Two Sample	t-statistic	P-value
t-test	0.0963	0.9236
Result	No Seasonality	

Trend Analysis

I. Least-Squares Regression

Slope	2.138E-06	0.014545689	Intercept
SE slope	4.312E-06	0.153494524	SE intercept
r-square	0.0047085	0.03950152	SE y-est.
F value	0.2459989	52	Sample N
SS regress	0.0003838	0.081139244	

Slope Significance	P-value	0.621996505
Result	Slope not greater than 0	

II. Decadal Rate Change Estimate

Rate (/10y)	0.0078054	MG/L as P/Decade

III. Pearson's r Correlation Coefficient

Pearsons r	0.0686
Result	Weak Correlation

IV. Least-Squares Rank Regression

(Non-parametric Trend Analysis +/-)

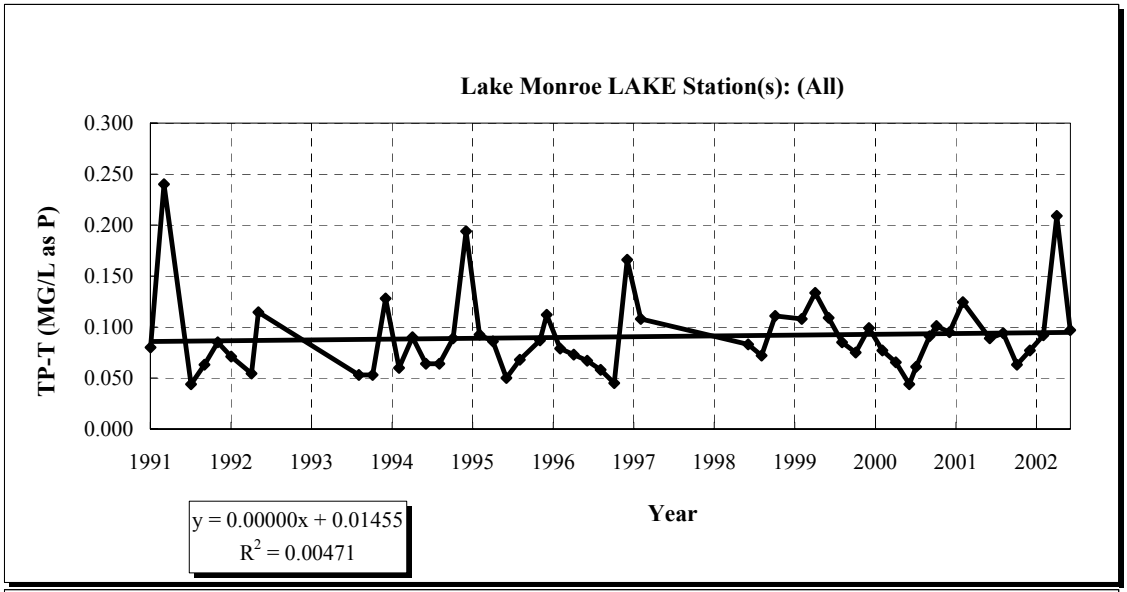
Slope	0.2366686	20.99161426	Intercept
SE slope	0.134719	4.258414337	SE intercept
r-square	0.0560248	15.42959345	SE y-est.
F value	3.0861945	52	Sample N
SS regress	734.73758	12379.76242	

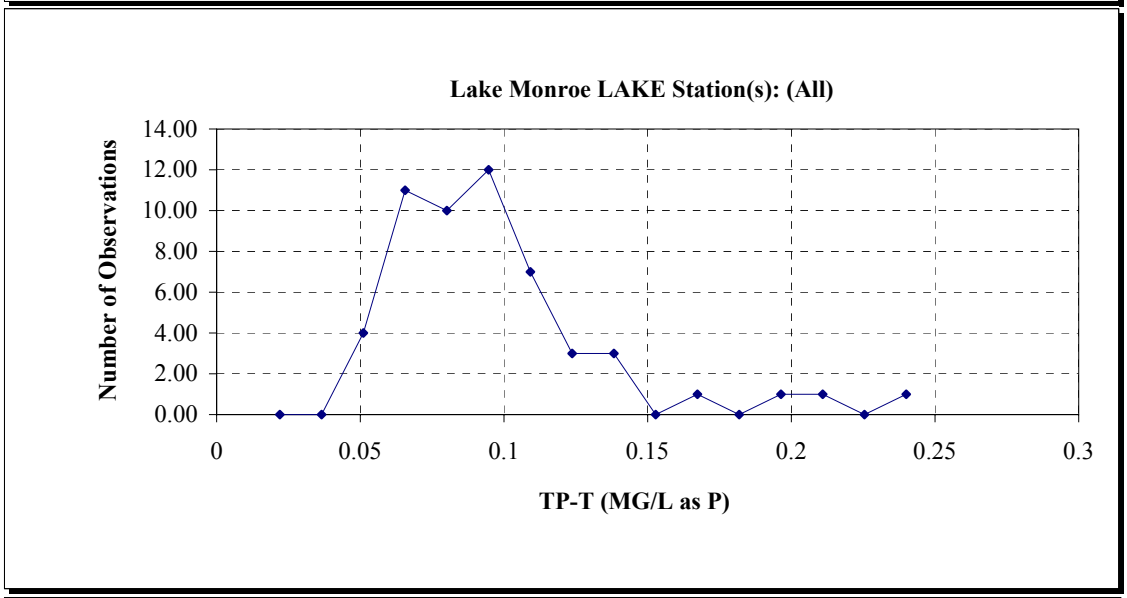
Slope Significance	P-value	0.084846386
Result	Slope equivalent to 0	

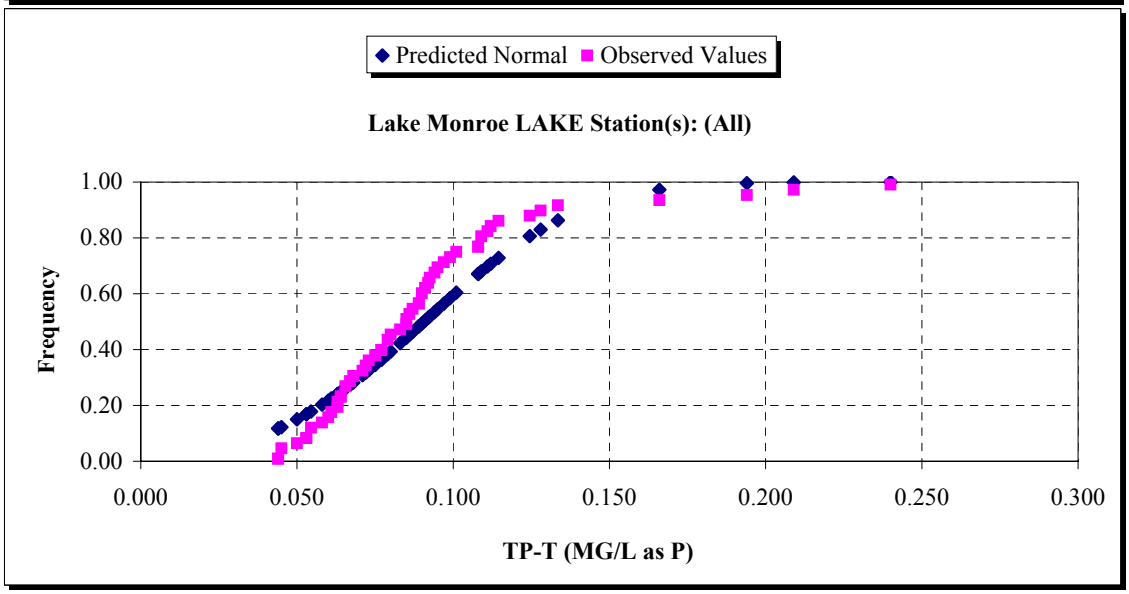
V. Rank Correlation

(Non-parametric Test of Association)

	rho	rho critical
Pearson (ranks)	0.2367	0.2259
Result:	Significant association	


Lake Monroe LAKE Station(s): (All)
TP-T (MG/L as P)
0.300
0.250
0.200
0.150
0.100
0.050
0.000
1991
1992
1993
1994
1995
1996
1997
1998
1999
2000
2001
2002
Year
y = 0.00000x + 0.01455
R2 = 0.00471


Lake Monroe LAKE Station(s): (All)
Number of Observations
14.00
12.00
10.00
8.00
6.00
4.00
2.00
0.00
0
0.05
0.1
0.15
0.2
0.25
0.3
TP-T (MG/L as P)


Predicted Normal
Observed Values
Lake Monroe LAKE Station(s): (All)
Frequency
1.00
0.80
0.60
0.40
0.20
0.00
0.000
0.050
0.100
0.150
0.200
0.250
0.300
TP-T (MG/L as P)

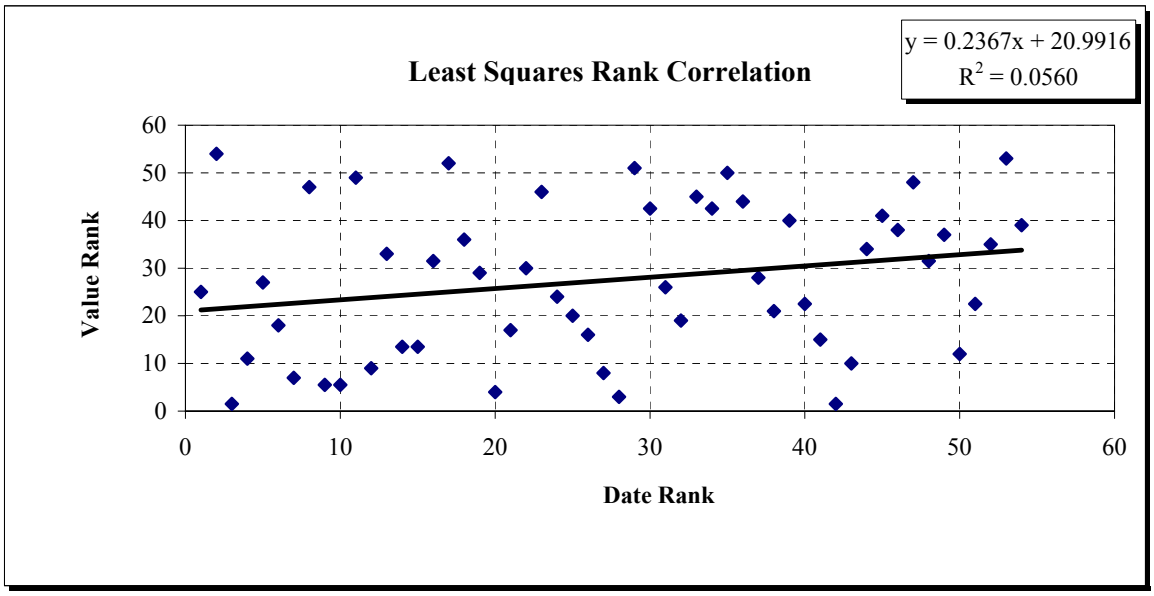


Table of Mean Period of Record TP-T (MG/L as P)

			95% Confidence Interval		
Year	**Median**	**Annual Ave**	**Lower**	**Upper**	**# Months**
1991	0.0800	0.1213	0.0033	0.2394	3
1992	0.0710	0.0776	0.0570	0.0982	5
1993	0.0530	0.0530	#DIV/0!	#DIV/0!	1
1994	0.0640	0.0765	0.0539	0.0991	6
1995	0.0875	0.0966	0.0563	0.1369	6
1996	0.0760	0.0793	0.0643	0.0944	6
1997	0.1080	0.1063	0.0379	0.1748	3
1998	0.0775	0.0775	0.0667	0.0883	2
1999	0.1090	0.1093	0.0942	0.1244	5
2000	0.0703	0.0703	0.0555	0.0850	6
2001	0.0945	0.0991	0.0886	0.1096	6
2002	0.0920	0.1076	0.0566	0.1586	5

Station Summary	
Station ID	**Samples collected**
LKMON	3
LMAC	60
Grand Total	63

Total Samples in Raw Data	
Total	67

Quality Assurance Codes Omitted	
Code	**Samples omitted**
J	1
Q	1
Q11	1
Q4	1
Grand Total	4