Municipal Separate Storm Sewer System
National Pollutant Discharge
Elimination System

Joint Annual Report

Cycle 3 - Year 5

October 1, 2014 Thru September 30, 2015

Submitted by
Northern Palm Beach County
Improvement District
as Lead Permittee

prepared by
MOCK•ROOS

MS4 NPDES
A Palm Beach County Joint Program

Palm Beach County MS4
Permit No. FLS000018-003

NPDES

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Report Certification

Engineer's Certification

I hereby certify, as a Professional Engineer in the State of Florida, that this Cycle 3, 5th Year, Joint Annual Report for the Florida Department of Environmental Protection National Pollutant Discharge Elimination System Municipal Separate Storm Sewer System Permit for Palm Beach County (Permit No. FLS000018-003) was assembled under my direct responsible charge. This certification is provided in accordance with Florida Board of Professional Engineers Rule of Certification under Chapter 61G15-23.003.

Alan D. Wertepny, P.E.
Project Manager, Mock•Roos
FL P.E. No. 32350

3/18/2016
Date

Mock•Roos
5720 Corporate Way
West Palm Beach, FL 33407
Florida E.B. No. 48

(Reproductions are not valid unless signed, dated and embossed with an Engineer's Seal)

Permittee Certifications

Certifications for the individual permittee annual reports are included in each individual annual report form, which are attached to this Joint Report as Appendices 1 through 41.

1.0 Palm Beach County MS4 Program

1.1 Introduction

The Municipal Separate Storm Sewer System (MS4) National Pollutant Discharge Elimination System (NPDES) is a federal program designed to reduce stormwater pollutant discharges to receiving waters of the United States. In 1987, the United States Environmental Protection Agency (EPA) was required under Section 402 (p) of the Clean Water Act (N40CFR Part 112.26) to establish final regulations governing stormwater discharge permit application requirements. In 1990, the Federal Register indicated that Palm Beach County was to begin compliance with the program. In 1997, the first 5-year permit (No. FLS000018) was issued by EPA to Palm Beach County's permittees. In 2001, the Florida Department of Environmental Protection (Department) received delegation from EPA for the MS4 Programs. In November 2002, the Cycle 2 MS4 permit was issued by the Department. The Cycle 3 permit was issued on March 2, 2011 and has an expiration date of March 1, 2016.

Northern Palm Beach County Improvement District (Northern) acts as lead permittee for the Palm Beach County coalition of permittees. As the lead permittee, Northern has entered into Interlocal Agreements with each of the other permittees for the purposes of identifying duties and responsibilities of the parties and fulfilling the conditions of the Palm Beach County MS4 permit. Through these Interlocal Agreements, cost sharing for joint activities is provided by each of the permittees.

This joint annual report was reviewed by the permittees and approved by the Steering Committee.

1.2 Permittees

There are 41 permittees identified in the Cycle 3 MS4 permit. ***Table 1-1*** is a list of the designated MS4 NPDES stormwater management program contacts for each of the permittees.

1.3 Steering Committee

To coordinate the joint activities in Palm Beach County's MS4 program, the permittees established an MS4 Steering Committee in 1991. The seven member Steering Committee is comprised of two representatives of large municipalities, two representatives of smaller municipalities, one representative from the lead permittee, one

representative of special districts and one representative from Palm Beach County. A list of the MS4 Steering Committee and administrative personnel is provided in ***Table 1-2***. Minutes of all meetings and descriptions of programs overseen by the Steering Committee may be viewed on the Palm Beach County MS4 NPDES website at http://www.pbco-npdes.org.

During the reporting period, the Steering Committee met five times. Permittee representation at the meetings averaged eighty percent. Major meeting agenda items included the following:

- 4th Year Annual Report
- 5th Year Program Schedule
- Budget Reports
- FDEP Interview/Presentation
- EXCAL Visual Video Training Session
- FDEP Sedimentation & Erosion Control Training
- Monitoring Program
- Public Education
- Proposed Waters of the U.S. Rule

Table 1-1 Permittee Contacts

Appendix No.	Permittee, Address	Name, Title, Telephone
1	Atlantis, City of 260 Orange Tree Drive Atlantis, FL 33462	Steven Mazuk Utilities/Public Works Director (561) 965-1744
2	Belle Glade, City of 110 Dr. Martin Luther King, Jr. Blvd. Belle Glade, FL 33430	Lomax Harrelle City Manager (561) 996-2221
3	Boca Raton, City of 201 West Palmetto Park Road Boca Raton, FL 33432	Daniel W. Grippo, P.E., CEM Municipal Services Director (561) 416-3385
4	Boynton Beach, City of 124 East Woolbright Road Boynton Beach, FL 33435	Angela A. Prymas, P.E. Stormwater Supervisor (561) 742-6421
5	Cloud Lake, Town of 100 Lang Road Cloud Lake FL 33406-3222	Dorothy C. Gravelin Town Clerk (561) 686-2815
6	Delray Beach, City of 434 S. Swinton Avenue Delray Beach, FL 33444-2698	Isaac Kovner, P.E. City Engineer (561) 243-7322
7	FDOT – District Four 3400 West Commercial Boulevard Ft. Lauderdale, FL 33309-3421	Ivette Leiva NPDES Coordinator (954) 777-4221
8	FDOT – Turnpike Enterprise P.O. Box 9828 Fort Lauderdale, FL 33310-9828	Mr. Jeremiah Marek NPDES Coordinator (954) 934-1213
9	Glen Ridge, Town of 1501 Glen Road West Palm Beach, FL 33406	Michelle Suiter Town Manager (561) 697-8868

10	Greenacres, City of 5750 Melaleuca Greenacres, FL 33463	Carlos Cedeno Public Works Director (561) 642-2074
11	Gulf Stream, Town of 100 Sea Road Gulf Stream, FL 33483-7427	William Thrasher Town Manager (561) 276-5116
12	Haverhill, Town of 4585 Charlotte Street Haverhill, FL 33417-5911	Joseph Roche Director of Public Works (561) 689-0370
13	Highland Beach, Town of 3614 South Ocean Blvd. Highland Beach, FL 33487	Edward J. Soper Public Works Director (561) 243-2084
14	Hypoluxo, Town of 7580 S. Federal Highway Hypoluxo, FL 33462	Leonard G. Rubin, P.A. Town Attorney (561) 721-1683
15	Indian Trail Improvement District 13476 61st Street North West Palm Beach, FL 33412-1915	Grey Shafer Director of Stormwater (561) 793-0874
16	Juno Beach, Town of 340 Ocean Drive Juno Beach, FL 33408	Anthony R. Meriano Director of Pubic Works (561) 626-1122
17	Jupiter, Town of 210 Military Trail Jupiter, FL 33458	David J. Rotar Utility Services Manager (561) 748-2705
18	Jupiter Inlet Colony, Town of 1 Colony Road Jupiter Inlet Colony, FL 33469	John Pruitt Administrative Officer (561) 746-3787
19	Lake Clarke Shores, Town of 1701 Barbados Road West Palm Beach, FL 33406	Damon Gammons Utilities Superintendent (561) 642-7870

20	Lake Park, Town of 650 Old Dixie Highway Lake Park, FL 33403	David Hunt Public Works Director (561) 881-3345
21	Lake Worth, City of 7 North Dixie Highway Lake Worth, FL 33461	Jamie Brown Public Services Director (561) 586-1720
22	Lantana, Town of 500 Greynolds Circle Lantana, FL 33462	Jerry Darr Assistant Utilities Director (561) 540-5758
23	Manalapan, Town of 600 S. Ocean Blvd. Manalapan, FL 33462-3398	Lisa Petersen Town Clerk (561) 383-2541
24	Mangonia Park, Town of 1755 East Tiffany Drive Mangonia Park, FL 33407	Kenneth Metcalf Town Manager (561) 848-1235
25	Northern Palm Beach County Improvement District 359 Hiatt Drive Palm Beach Gardens, FL 33418	Jared Kneiss Operations/NPDES Manager (561) 624-7830
26	North Palm Beach, Village of 501 U.S. Highway No. 1 North Palm Beach, FL 33408	Brian Moree Public Works Director (561) 691-3440
27	Ocean Ridge, Town of 6450 N. Ocean Blvd. Ocean Ridge, FL 33435	James Titcomb Town Manager (561) 732-2635
28	Pahokee, City of 207 Begonia Drive Pahokee, FL 33476	Alvin Johnson Director of Public Services (561) 924-7685
29	Palm Beach, Town of 360 S. County Road, P.O. Box 2029 Palm Beach, FL 33480	Jeffrey M. Sanon Project Engineer (561) 227-7024
30	Palm Beach County 2300 North Jog Road, 4th Floor West Palm Beach, FL 33411	Bonnie Finneran Environmental Director (561) 233-2400

31	Palm Beach Gardens, City of 10500 North Military Trail Palm Beach Gardens, FL 33410	Todd Engle, P.E. City Engineer (561) 804-7012
32	Palm Beach Shores, Town of 247 Edwards Lane Palm Beach Shores, FL 33404-5718	Alan Welch Public Services Director (561) 844-3457
33	Palm Springs, Village of 226 Cypress Lane Palm Springs, FL 33461	Angela Thul Stormwater Environmentalist (561) 965-4022
34	Riviera Beach, City of 2391 Avenue L Riviera Beach, FL 33404	Joe Prussing Stormwater Coordinator (561) 845-4080
35	Royal Palm Beach, Village of 10996 Okeechobee Blvd. Royal Palm Beach, FL 33411	Paul L. Webster, P.E. Director of Public Works (561) 790-5122
36	South Bay, City of 335 S.W. Second Avenue South Bay, FL 33493	Edgar W. Kerr Public Works Director (561) 996-6751
37	South Indian River WCD 15600 Jupiter Farms Road Jupiter, FL 33478	Mike Dillon General Manager (561) 747-0550
38	South Palm Beach, Town of 3577 S. Ocean Blvd. South Palm Beach, FL 33480	Bob Vitas Town Manager (561) 588-8889
39	Tequesta, Village of 345 Tequesta Drive Tequesta, FL 33469	Sam Heady Deputy Director of Utilities (561) 768-0493
40	Wellington, Village of 12300 Forest Hill Boulevard Wellington, FL 33414	Jim Barnes Assistant Village Manager (561) 791-4720
41	West Palm Beach, City of P. O. Box 3368 West Palm Beach, FL 33402	Poonam Kalkat Director of Public Utilities (561) 822-2200

Table 1-2
Palm Beach County MS4 Steering Committee

Laurent Van Cott, P.E. Steering Committee Chair For Town of Mangonia Park Southern Design Group, Inc. Phone (561) 743-0501	Karen Brandon, P.E. Steering Committee Member For South Indian River Water Control District AECOM Phone (561) 684-3375
Jay Foy, P.E. Steering Committee Vice-Chair For City of Atlantis Stormwater J Engineering, Inc. Phone (561) 242-0028	Bonnie Finneran Steering Committee Member Palm Beach County Phone (561) 233-2400
Isaac Kovner Steering Committee Secretary City of Delray Beach Phone (561) 243-7322	Maurice Morel, P.E. Steering Committee Member City of Boca Raton Phone (561) 416-3402
Dan Beatty, P.E. Steering Committee Member Northern Palm Beach County Improvement District Phone (561) 624-7830	

Administration – Northern Palm Beach County Improvement District as Lead Permittee	
Alan Wertepny, P.E. Mock, Roos & Associates, Inc. Program Manager Phone (561) 683-3113, x-231	Betsy S. Burden, Esq. Caldwell Pacetti Edwards Schoech & Viator LLP Legal Counsel Phone (561) 655-0620
Anne Capelli Mock, Roos & Associates, Inc. Public Education Coordinator Phone (561) 683-3113, x-287	Laura Ham, CPA Northern Palm Beach County Improvement District Budget Manager Phone (561) 624-7830
Brian Einkauf Mock, Roos & Associates, Inc. Webmaster Phone (561) 683-3113, x-250	Jane Hayes Mock, Roos & Associates, Inc. Administrative Assistant Phone (561) 683-3113, x-264

2.0 Training Program

The Palm Beach County MS4 permit requires that permittees develop and implement a written plan for the training of all appropriate permittee personnel (including field crews, fleet maintenance staff, and inspectors) and contractors on three topics:

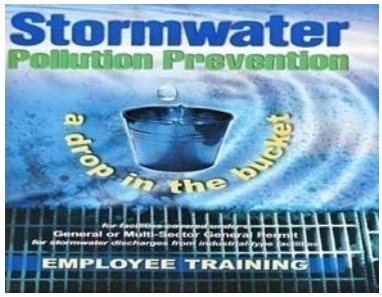
- Identification & reporting procedures for a suspected illicit discharge (Part III.A.7.c)
- Spill prevention & response procedures (including techniques for mitigating pollution from spills) (Part III.A.7.d)
- Proper building & construction stormwater management and erosion and sedimentation control BMPs for construction sites (Part III.A.9.c)

The permittees have purchased eight training videos from EXCAL Visual (www.man.excalvisual.com) to assist in meeting these training requirements. Selected videos are shown once a year during regularly scheduled Steering Committee meeting(s) and are available on loan to all permittees for use "in-house." These videos may not be reproduced, but additional copies may be purchased from the vendor.

The videos include the following:

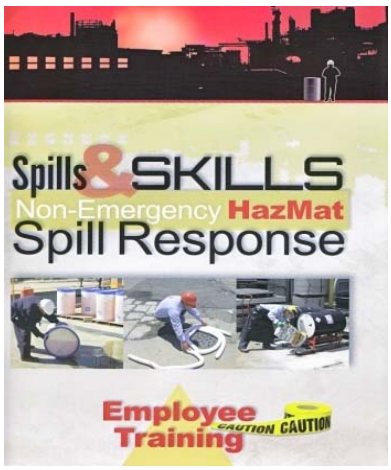
1. Rain Check: This video provides instruction on good housekeeping, spill response, materials management, vehicle fueling and washing and other BMPs outlined in EPA's "National Menu of BMPs."

2. A Drop in the Bucket: The video focuses on employee training that describes concepts and practices of stormwater pollution prevention. The video describes stormwater pollution and its negative effects on people, wildlife, and the environment. It includes good housekeeping, spill prevention, exposure minimization,

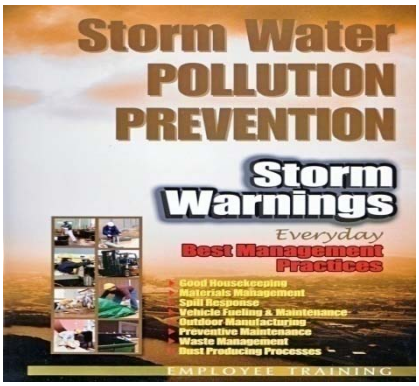


maintenance, and spill-clean up. It also provides an overview of the work practices that can be effective for stormwater pollution prevention.

3. Spills & Skills: The video is designed to help train non-HAZWOPER employees on dealing with a hazardous material (or hazardous waste) spill, leak or release. What to do if you discover a hazmat release? How to determine if the release requires HAZWOPER-trained responders or not? If it is a hazmat emergency release (HAZWOPER event), what to do then? If it is non-HAZWOPER event (an "incidental release"), the discreet steps involved to clean it up. The "step-across" test. The clean-up supplies and equipment you should expect to find in the spill locker. Different styles of absorbent (loose, pads, pillows, socks) and how to use each. How to use all the equipment and supplies safely and effectively. How to manage the clean-up wastes. Post clean-up measures.

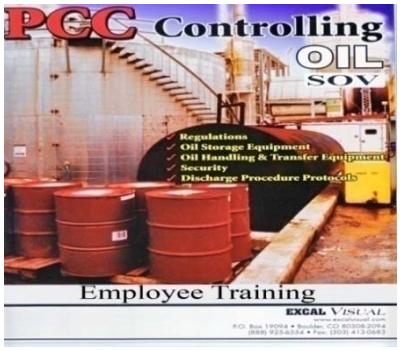


4. Storm Warnings: Storm Water Pollution Prevention - Describes Best Management Practices that are crucial for compliance with facility Stormwater Pollution Prevention Plans including: good housekeeping, exposure minimization, and soil-cleanup.

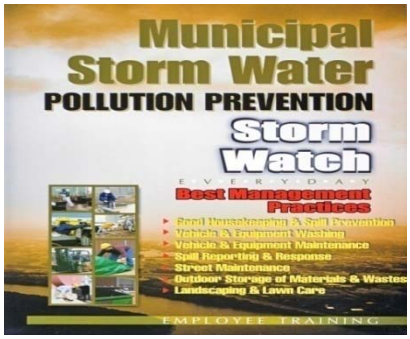


5. Ground Control: Stormwater Pollution Prevention for Construction Sites - The video focuses on BMPs that are widely used at most construction sites including: silt fences, stabilized entrances/exits, drop inlet protectors and others. The program illustrates how these BMPs work and how they can fail. Employees are encouraged to promptly report any failing BMPs. By making all employees "look-outs" for BMP problems, this training program is an important part of the required BMP maintenance program.

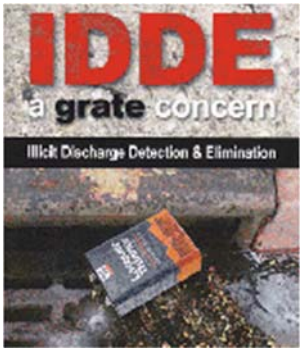
6. Controlling Oil: Spill Prevention, Control & Countermeasure (SPCC) - This 20 minute video instructs employees on SPCC Plans, oil pollution regulations, effective oil storage and oil transfer procedures. It also instructs employees on "discharge procedure protocols" first response measures to take when a discharge is discovered. The video also addresses site security measures to take to protect oil handling facilities against vandalism and terrorism.



7. Storm Watch: Municipal Stormwater Pollution Prevention - The video focuses on municipal BMPs such as good housekeeping, spill response, materials storage and handling, landscape maintenance, and street maintenance. Employees working in maintenance and other departments can benefit from this training video. The video shows employees how to spot potential "illicit discharges."



8. Illicit Discharge Detection & Elimination: Shows viewers how to spot a possible illicit discharge or signs of past discharges. It discusses direct and indirect discharges and shows viewers what to look for at curb inlets, drop inlets and outfalls. It shows examples of the tell-tale signs often left by past illicit discharges. It encourages employees to be vigilant in watching for signs of illicit discharges and to report their suspicions to the storm drainage staff, Public Works Department or Environmental staff who can then initiate the process of tracking the source of the discharge and eliminating it.



The MS4 NPDES permit also requires that permittees conduct annual training on stormwater, erosion, and sedimentation control for construction site plan reviewers, inspectors and/or operators (Part III.A.9.c). The permittees currently meet this requirement by sponsoring a minimum of one annual FDEP Stormwater, Erosion, and Sedimentation Control Inspector Training and Certification course.

Training conducted in 2014/2015 included:

1. "Storm Watch" and "Rain Check" videos and training - March 18, 2015. Attendees for the training included 60 representatives from the Palm Beach County MS4 permittees.

2. Florida Stormwater, Erosion and Sedimentation Control Inspector Training Program – Palm Beach County MS4 permittees sponsored two courses; one on February 11 & 12, 2015 and another on May 20 & 21, 2015. The class that was held at the City of Palm Beach Gardens Emergency Operations Center was taught by Hal Lunsford, Environmental Specialist with FDEP. The class at the Town of Jupiter Community Center was taught by Cheryl Moore, a state certified instructor. Between the two training sessions 149 individuals were in attendance, 56 representing private individuals, 36 municipal construction site inspectors, 11 municipal site plan reviewers, and 46 municipal construction site operators.

3.0 Public Education Program

The Palm Beach County MS4 permittees have undertaken a jointly-funded program to meet the public education requirements of the MS4 permit. In so doing, all permittees participate in conducting the program. The premise of a joint program is that a unified message, repeated throughout the County, will have more of an impact than 41 separate messages. The Stormwater And Me (SAM) program, as it is called, kicked off in 2009.

Objective:

The objective of the public education program is to put relevant information in the hands of the residents of and visitors to the Palm Beach County geographic area so they can make better decisions with respect to pesticides, herbicides, fertilizers, illicit discharges, illegal dumping, and the disposal of household hazardous waste. The intent is that this will result in less of these items ending up in our stormwater systems and, in turn, our water bodies.

Topics:

As prescribed by the MS4 permit, the following topics are covered by the public education program:

- Encourage citizens to reduce their use of pesticides, herbicides, and fertilizers. *[Part III.A.6.]*
- Promote, publicize and facilitate public reporting of the presence of illicit discharges and improper disposal of materials into the MS4. *[Part III.A.7.e.]*
- Encourage the proper use and disposal of used motor vehicle fluids, leftover hazardous household products, and lead acid batteries. *[Part III.A.7.f.]*

Target Audience:

The target audience for the program is residents (children and adults) of and visitors to Palm Beach County, Florida.

Activities and Materials:

This reporting period, the Stormwater and Me (SAM) public outreach program included two 30-second Public Service Announcements (PSAs) dealing with pet waste pickup and illicit discharge detection and elimination that were aired on four commercial television networks (Discovery, Animal Planet, Weather Channel, HGTV), broadcast by a local cable television provider (Comcast) from December 29, 2014 – March 29, 2015 to broadcast zones within Palm Beach County. A total of 1,355 PSAs were aired via Comcast. The PSAs were also aired by local/municipal TV stations throughout the year.

As part of the Comcast PSA contract, an additional feature called a "taggable" was included. A 30-second promotional spot about not littering was "sponsored" by our SAM program, which simply means that at the end of the spot, our logo appeared, with a 10-second closing voice-over that told viewers: "The Palm Beach County Stormwater and Me website also has ideas on what you can do to help protect water quality in your neighborhood." These taggables appeared in the same Palm Beach County Comcast zones as our PSAs.

Finally, visitors to the Comcast.com website home page in select Palm Beach County zones were exposed to one PSA with a hot link that clicked directly through to our StormwaterAndMe.org website. Our ad repeatedly got exposure on Xfinity.com (Comcast's portal). The Comcast Xfinity zone was different each month, with rotation through the West Palm Beach, Boca Raton, and Wellington zones.

The third year of distribution of the County Extension brochure on Florida Friendly Yards (FYN) took place August and September 2015 when the brochure was mailed out to each customer of City of Delray Beach Public Utilities Division (+/- 23,500 households) and Village of Palm Springs Utilities Department (+/- 12,800 households). So far, approximately 273,000 FYN Florida Friendly Yards brochures have been distributed. The Palm Beach County permittees arranged and paid for the printing of the brochure and delivered the materials to billing facilities. Future phases will include the brochure's distribution to additional Palm Beach County residents.

The Palm Beach County Solid Waste Authority (SWA) continued to carry out a public education/outreach program to educate Palm Beach County residents and visitors about proper disposal of household hazardous waste (HHW). Through the MS4 NPDES Interlocal Agreement between Palm Beach County and Northern Palm Beach County Improvement District, SWA continues its program, in part to fulfill the permit requirement that all permittees educate their residents on proper disposal of HHW. During the 2014-2015 reporting period, SWA

reports that it distributed 109,500 brochures, conducted 1,866 events, collected 1,603 tons of HHW, conducted 100 neighborhood presentations reaching 5,605 participants, produced 135 displays, aired 3,991 PSAs, conducted 570 school presentations reaching 19,085 participants, conducted 24 workshops reaching 7,000 participants, and conducted 49 special events reaching 98,000 participants. SWA also hosts a public outreach website at http://www.swa.org/site/hhw/haz_waste_home/hazardous_waste_portal.htm). SWA has estimated that its outreach program reached 80% of the population in Palm Beach County. Costs for these programs totaled $1,786,440.

Methods for Distribution:

The television PSAs allow the greatest opportunity for the distribution of information. In addition, the website, brochures, and meetings allow for the presentation of more in-depth information.

Annual Schedule:

Public education efforts are emphasized during the months of January through March, when residential population in the County is at its highest.

Documentation:

The Public Education Coordinator maintains record information for all materials distributed.

Responsible Entities:

The program is coordinated by a Public Education Sub-committee of the Palm Beach County MS4 permittee group, on behalf of all permittees. HHW outreach is carried out by the Palm Beach County Solid Waste Authority (SWA) for all permittees under the inter-local agreement with Palm Beach County. The group supports the Fertilizer and Pesticide education carried out by the IFAS/County Extension office.

Resources Allocated:

The 2014-2015 budget for the public education program (not including Palm Beach County SWA Programs) was $35,000.

Assessment Method:

The bottom line on the effectiveness of public education is if the receiving waters experience improved water quality. Therefore, the water quality monitoring is offered as a measure of the collective effectiveness of this and other MS4 permit programs.

Public Reporting of Illicit Discharge

The StormwaterandMe.org website contains information on stormwater pollution and illicit discharges. Included is a listing of contacts for each of the 41 permittees to report an illicit discharge or spill.

On May 7, 2015 a resident of Palm Beach County video taped an employee of a Burger King in unincorporated Palm Beach County dumping a vat of hot cooking oil down a storm drain. The 1:28 minute video went viral with 1.8 million views nation-wide. The video prompted officials at Burger King Headquarters to issue a statement about it, and the president of the local franchise apologized to the community. Both Florida Department of Environmental Protection and Palm Beach County Environmental Resources Management (ERM) investigated the illicit discharge. ERM issued a violation notice and the property owners provided a corrective action plan which included hiring a professional clean-up crew to remove the oil and clean out the storm drain and initiated an employee training program. No fines or penalties were issued.

Although the Burger King dumping was an unfortunate incident it demonstrates that public awareness has increased and the education programs are effective.

4.0 Total Maximum Daily Load (TMDL) Program

4.1 Description

The PBC MS4 Cycle 3 permit includes TMDL requirements and a schedule for developing an implementation plan to reduce the discharge of pollutants from each affected permittee's MS4 to the maximum extent practicable. Both the Department and EPA had identified impaired waterbody segments within Palm Beach County. However, as of the issuance date of this permit, only EPA had established TMDLs that required action.

4.2 Established and Adopted TMDLs

When the Cycle 3 MS4 permit was issued, EPA had established seven TMDLs in Palm Beach County. These TMDLs and associated information such as the Constituent (water quality parameter of concern) and Percent Reduction Goal are identified in Table 4-1. The potentially affected permittees are Belle Glade, FDOT, Indian Trail Improvement District, Pahokee, Palm Beach County, and South Bay. It should be noted that WBIDs 3212 D, E & G are entirely within Lake Okeechobee and include no area in any of the MS4 permittees' jurisdictions. WBIDs 3247, 3248, and 3251 have no discharge reduction targets. Consequently, none of these three WBIDs require additional stormwater management programs by the MS4s.

TMDLs established by EPA or adopted by FDEP after the 3rd cycle permit was issued on March 2, 2011, will have to be addressed in the next permit cycle. These TMDLs and potentially affected permittees are identified in Table 4-2.

FDEP has a draft list (August 15, 2015) of site-specific TMDLs that may be finalized within the next two years and are identified in Table 4-3.

Table 4-1
EPA's TMDLs in Palm Beach County as of March 2, 2011

Agency	WBID	Segment Name	Basin	Constituent	TMDL	Percent Reduction	Date
EPA	3212 D, E, G	Lake Okeechobee	Lake Okeechobee	Iron	0.3 (MG/l)	51	02/23/2005
EPA	3233	L-8 Canal	Lake Okeechobee	Turbidity	32 (NTU)	52	03/29/2007
EPA	3238	West Palm Beach Canal	Lake Okeechobee	Turbidity & TSS	32 (NTU) 33 (MG/l)	66 0	03/29/2007
EPA	3244	East Beach	Lake Okeechobee	Turbidity & TSS	32 (NTU) 33 (MG/l)	12 0	03/29/2007
EPA	3247	715 Farms	Lake Okeechobee	Turbidity & TSS	32 (NTU) 33 (MG/l)	0 0	03/29/2007
EPA	3248	N. New River Canal	Lake Okeechobee	Turbidity & TSS	32 (NTU) 33 (MG/l)	0 0	03/29/2007
EPA	3251	S-3	Lake Okeechobee	Turbidity	32 (NTU)	0	03/29/2007

Table 4-2
TMDLs in Palm Beach County after March 2, 2011

Agency	WBID	Segment Name	Basin	Constituent	TMDL	Percent Reduction	Date	MS4s
EPA	3226	SW Fork Loxahatchee River	St. Lucie/ Loxahatchee	Fecal Coliform	<43 (counts/100 ml)	93	05/16/12	Jupiter, FDOT, PBC SIRWCD
EPA	3262A	Lake Ida	Lake Worth Lagoon	Nutrients	TN=0.857 mg/l TP=0.062 mg/l	20 45	11/09/12	Delray, Boynton Beach, FDOT, PBC
FDEP	33264A	E-1 Canal	Lake Worth Lagoon	Fecal Coliform	<400 (counts/100 ml)	94 0	08/31/2011	FDOT, PBC
EPA	3264D	E-4	Lake Worth Lagoon	Fecal Coliform	<400 (counts/100 ml)	59	03/29/2007	Boca, FDOT, PBC

Table 4-3
Draft TMDLs in Palm Beach County as of August 15, 2015

Agency	WBID	Segment Name	Basin	Constituent	MS4s
FDEP	3256B	Boynton Canal	Lake Worth Lagoon	Nutrients, Dissolved Oxygen, Un-Ionized Ammonia	Palm Beach County, Boynton Beach, FDOT-District IV, FDOT-Turnpike
FDEP	3262B	E-1 Canal	Lake Worth Lagoon	Nutrients, Dissolved Oxygen, Un-Ionized Ammonia	Palm Beach County, FDOT-District IV
FDEP	3262A	Lake Ida	Lake Worth Lagoon	Nutrients, Dissolved Oxygen, Un-Ionized Ammonia	Palm Beach County, Delray Beach, Boynton Beach, FDOT-District IV
FDEP	3245C4	Pine Lake	Lake Worth Lagoon	Nutrients, Dissolved Oxygen, Un-Ionized Ammonia	Palm Beach County, FDOT-District IV, West Palm Beach
FDEP	3226A	NW Fork Loxahatchee River	St. Lucie /Loxahatchee	Nutrients, Dissolved Oxygen, Un-Ionized Ammonia	Palm Beach County, Tequesta
FDEP	3262C	SW Fork Loxahatchee River	St. Lucie /Loxahatchee	Nutrients, Dissolved Oxygen, Un-Ionized Ammonia	Palm Beach County, FDOT-District IV, Jupiter
FDEP	3262D	North Fork Loxahatchee River	St. Lucie /Loxahatchee	Nutrients, Dissolved Oxygen, Un-Ionized Ammonia	Tequesta, Jupiter, FDOT-District IV, Martin

4.3 Prioritization Plan and Schedule

During Year 1 of this permit cycle the six permittees identified as stakeholders for the established TMDLs met to discuss an approach. As a result, a Prioritization Plan was submitted and approved by the Department in Year 2. The L-8 WBID 3233 was identified as the top priority WBID. During Year 2, additional information on the three

WBIDs in the Prioritization Plan was obtained from the affected permittees. This additional information included the MS4 outfalls/drainage systems and local agricultural drainage districts' canal systems, control structures and contributing drainage areas. Review of the MS4s stormwater systems indicated that the MS4s within two of the WBIDs (3238 and 3244) discharge only into private canals, owned and operated by Special Districts that in turn discharge into the State impaired waters. The majority of the drainage contribution into these impaired waters is from agricultural landowners. Because these MS4s do not have any direct discharge into an impaired waterbody or indirectly through another MS4, the TMDLs for these two WBIDs are not relevant to the permittee MS4s. At the Palm Beach County June 20, 2012 Steering Committee meeting, the Department's representative, Eric Livingston, agreed. Consequently, the only WBID in this permit cycle that required further action was the L-8 Canal WBID 3233.

4.4 Monitoring and Assessment Plan

For WBID 3233, there is only one MS4 outfall discharging directly into the L-8 Canal. This outfall and its monitoring is the responsibility of Indian Trail Improvement District (Indian Trail). In an email dated December 28, 2011, Eric Livingston (Department) approved the Monitoring Plan for this outfall. It consisted of the following:

- Sampling at the discharge of the Indian Trail reservoir following or during a storm event, with a minimum of seven storms sampled

- Sampling conducted for a one hour time period with a grab sample taken every 10 minutes; a stage recorder read at the time of sample collection and noted on the log sheet; rainfall records kept based on the rainfall station; turbidity reading from a portable turbidity meter

- Sampling completed in accordance with the Department's Standard Operating Procedures for surface water sampling and equipment calibration

4.5 Monitoring Results

Indian Trail conducted the storm event monitoring of its outfall into the L-8 Canal and results were included in its Year 2 Annual Report. Turbidity values ranged from 1.5 to 4 NTUs, well below the TMDL value of 32 NTUs. Since the TMDL is being met by the

MS4's discharge, the existing stormwater management programs being implemented by the MS4 for this WBID more than adequately address this EPA TMDL.

4.6 Basin Management Action Plan

In February 2013 (Year 3, Cycle 3) the Department held its first stakeholder meeting for the development of a Basin Management Action Plan (BMAP) for Lake Okeechobee and its tributaries. The goal of this BMAP is to reduce nutrient discharge of Total Phosphorus (TP) into Lake Okeechobee and eventually meet the TMDL (40 ppb for TP). Potential Palm Beach County permittees that could be stakeholders in this BMAP included Belle Glade, Florida Department of Transportation (District Four), Indian Trail Improvement District, Pahokee, Palm Beach County, and South Bay. However, within Palm Beach County, discharge into Lake Okeechobee is either via South Florida Water Management District (SFWMD) canals (the L-8 Canal, the West Palm Beach Canal, the Hillsboro Canal, and the North New River Canal) or via agricultural water control districts. None of the MS4 permittees have any direct discharge into Lake Okeechobee. As part of the Everglades Restoration Program, the SFWMD and the water control districts have initiated programs to reduce nutrient discharge into Lake Okeechobee. SFWMD has estimated that ninety percent of the runoff in Palm Beach County has been diverted away from Lake Okeechobee and into regional storage treatment areas. Through Works of the District permits issued to Palm Beach County water control districts in the Lake Okeechobee Basin, SFWMD continues to monitor its progress in meeting the TP reduction goal. Since most of the nutrient loading (89%) into Lake Okeechobee is from the northern sub-watersheds, and SFWMD's Everglades Regulatory Source Control Program covers the southern sub-watershed, the first phase of the Lake Okeechobee BMAP was developed for the northern sub-watersheds. A final report was issued in December 2014. The only Palm Beach County MS4 that is not covered by SFWMD's Everglades Regulatory Source Control Program and works of the District permit is Indian Trail Water Control District. Water quality sampling (TP) by Indian Trail indicated that its discharges were well below the TP goal of 40 ppb. Indian Trail's discharges are in the range of 25 ppb. Therefore no additional stormwater management programs are required by Indian Trail.

5.0 Water Quality Monitoring Program

5.1 Description

The water quality monitoring requirement in the MS4 NPDES permit is met through a joint program by all permittees. The monitoring program includes the following components:

- ambient water quality sampling
- water quality data analysis
- trend analyses
- annual pollutant loading calculations in Year 3
- program modifications

The Palm Beach County MS4 NPDES permit monitoring program includes 32 ambient water quality monitoring sites which were selected after coordination among the South Florida Water Management District (SFWMD), Palm Beach County Environmental Resource Management (ERM), the Loxahatchee River District (LRD), and the Palm Beach County permittees. From 2007 - 2015, Palm Beach County ERM conducted ambient water quality monitoring for 11 sites in five lakes commonly referred to as the Chain-of-Lakes. Grant funding for this program has been discontinued. Consequently, Palm Beach County ERM is no longer conducting water quality sampling at these locations and these sites will no longer be included in this report.

5.2 Monitoring Sites

Table 5-1 identifies each monitoring site location and provides the site designation watershed name, the entity conducting the sampling, and the site location northing and easting coordinates. Note that site designations are unique within an individual agency, but may be duplicated across agencies. Data for these sites are assigned a unique agency code and station identification in the State's database (DbHydro or STORET).

Figure 5-1 depicts the water quality monitoring site locations and shows the boundaries of the associated watersheds. Sites monitored by ERM are shown as circles, those monitored by the LRD are shown as squares, and those monitored by SFWMD are shown as triangles. White symbols signify marine or tidal sites and yellow symbols designate freshwater sites.

The LRD monitors four marine sites and one freshwater site. Palm Beach County ERM monitors ten marine sites, and thirteen freshwater sites. The SFWMD monitors four freshwater sites. All of Palm Beach County's water quality ambient monitoring data is in STORET.

The twenty-three sites monitored by ERM are sampled and initially analyzed in-situ by ERM staff using a multi-parameter water quality monitoring instrument. Water samples are collected, preserved and stored according to the Department Standard Operating Procedures. Quality assurance/quality control measures include pre-cleaned equipment blanks, field cleaned equipment blanks, field spikes, and the collection of duplicate samples.

Further analysis of samples from all ERM sites is conducted by an independent laboratory under contract with ERM.

The water quality parameters and frequency being monitored by ERM, LRD, and SFWMD are listed in ***Table 5-2***.

Table 5-3 (3 pages) provides a list of the parameters and the Florida Surface Water Quality Standards (WQ Standards) as promulgated in Florida Administrative Code (F.A.C.) 62-302.530, 62-302.532, and 62-302.530 (47)(b). Numeric Nutrient Criteria for Palm Beach County estuaries/marine water bodies and freshwater lakes is shown on pages 2 and 3, respectively, in ***Table 5-3***.

The water quality sampling program in Palm Beach County is a cooperative effort designed to incorporate desirable elements of existing monitoring programs being administered by various agencies throughout the County. Attempts to coordinate sampling frequencies, parameters, and methodologies are ongoing, but not all sampling programs produce results that are compatible for a combined analysis. Data for a given parameter, location, and event may be unavailable due to the specific goals of that agency's monitoring program or procedural variations, including event frequency, sample depth, methodology, and instrumentation.

5.3 Water Quality Monitoring Results and Exceedances

The results of the monitoring conducted from October 2014 through September 2015 are provided in ***Table 5-4*** (32 pages). Sample values that were below the limits of detection (BDL or Non-detect) have been replaced whenever possible with ½ of the respective minimum detection limit (MDL) value for a more complete analysis. MDLs are determined by instrumentation and method of analysis. These substitutions have been highlighted in blue in the data tables. Exceedances of the WQ Standards are highlighted in yellow.

For Class I and Class III freshwater, exceedance limits for heavy metals (cadmium, copper, lead, and zinc) are based on a logarithmic function of the total hardness. In cases where a total hardness was not measured, an exceedance limit was not calculated. For marine waters, the limits for heavy metals are constant and do not depend on the total hardness. In marine waters, cadmium, copper, lead, and zinc exceed the surface WQ standards at values above 0.0088 mg/L, 0.0037 mg/L, 0.0085 mg/L, and 0.086 mg/L, respectively.

Exceedance limits for chlorophyll-a (corrected for pheophytin) are determined by the annual mean of the samples taken at a given site. In freshwater systems (canals), the water quality standard is exceeded if the mean is greater than 20 ug/L. In marine systems (estuaries) and freshwater lakes, exceedance occurs when the geometric mean is greater than the values shown on ***Table 5-3*** for the specific segment of the waterbody. Individual values for chlorophyll-a are not highlighted in ***Table 5-4*** since the exceedance limit is based on an annual mean or geometric mean value.

Table 5-5 summarizes the occurrence of exceedances (as described above) at each site. Each cell shows the number of exceedances and the total number of samples taken at each site during the reporting period. For example, five dissolved oxygen readings out of twelve total readings taken at Site 69 within the Loxahatchee watershed were in exceedance of the WQ Standard.

Exceedances for **dissolved oxygen % saturation standard** occurred in the Loxahatchee River. All the other watersheds have not converted to the new criterion and are still sampling for dissolved oxygen in mg/l.

Exceedances for **fecal coliform** occurred in the Loxahatchee River.

The **chlorophyll-a** column of ***Table 5-5*** indicates exceedances occurred in the Loxahatchee River, Lake Worth Lagoon North, and Lake Worth Lagoon Central.

Nutrient criteria exceedances occurred in the Loxahatchee River, Lake Worth Lagoon North, and Lake Worth Lagoon Central.

5.4 Trend Analyses

The Palm Beach County MS4 permit monitoring plan indicates that trend analyses are to be completed during the third permit year using the monitoring data that was collected in previous years. The Palm Beach County MS4 Steering Committee has chosen to perform the trend analyses as an annual activity.

Tabular Data

The data set for the trend analyses includes approximately 22 water quality parameters (21 sampled parameters plus calculated TN) and all MS4 sampling events from January 1, 1999 through September 2015.

Minimum detection limits were provided by Palm Beach County ERM for values that were reported BDL within the data set. MDL values for sampling events from September 2004 to December 2004 were obtained directly from STORET where available, and substituted for sample readings that were BDL. MDL values for data after December 2004 have been provided directly by the data supplier. MDL values in excess of the WQ Standard were not counted as exceedances.

A statistical summary of each sampling site by watershed is presented in ***Table 5-6*** (19 pages). The statistical summary provides the following information:

*Start***:** The earliest sample event date for the given site.

End: The latest sample event date for the given site.

*Samples***:** The total number of sample events for the given site.

Count: The number of usable, numerical results for the given parameter.

Exceedances: The number of measured values exceeding the criterion of the WQ Standard or IWR as previously described.

Geometric Mean: Sample values are multiplied together then the nth root of the product is taken, where n is the number of samples.

Mean: Average of the usable samples.

Max: The maximum value of the usable samples or "None" if no sample values were obtained.

Min: The minimum value of the usable samples or "None" if no sample values were obtained.

Standard Deviation: The standard deviation is based on the assumption that the data represents a sample of the population. This function uses an "n-1" denominator and will return "None" if there were less than two usable samples.

$$\sqrt{\frac{n\cdot\sum x^2-\left(\sum x\right)^2}{n\cdot(n-1)}}$$

n = number of samples
x = value
Σx^2 = The sum of the squares of the values
$(\Sigma x)^2$ = The square of the sum of the values

Graphical Data

Based on the water quality sampling results and the potential adoption of TMDLs in Palm Beach County, the following parameters have been analyzed in greater detail:

Total Nitrogen (TN)
Total Phosphorus (TP)
Chlorophyll-a (Chl-a)

Table 5-7 summarizes the geometric mean values at each site for the period of record for TN, TP, and Chl-a. Historically, based on Chl-a exceedances, elevated TN and/or TP is occurring in the watersheds of the C-15, Loxahatchee River, Lake Worth Lagoon North and Lake Worth Lagoon Central.

Water quality trend graphs are presented for TN, TP, and Chl-a for the period of record in ***Figures 5-2, 5-3, and 5-4,*** respectively. The trend analyses are based on the annual geometric mean of the geometric mean of all the monitoring site values within each watershed for the period of record. The freshwater sites include data back to 1999, the marine sites use data from ERM that dates back to 2004.

Review of the trend graphs indicates the following:

Total Nitrogen trend graphs (Figures 5-2) indicate the concentrations are improving (decreasing) or stabilized for all ten watersheds.

Total Phosphorus trend graphs (Figures 5-3) indicate a general improvement (decrease) in values within the watersheds, except for C-16 and C-51 (East and West).

Chlorophyll-a trend graphs (Figures 5-4) indicate that the Loxahatchee River watershed and the C-51 East watershed are showing improvement.

5.5 Pollutant Loading Analyses

Refer to the Cycle 3, 3rd Year Joint Annual Report for the latest pollutant loading analyses.

5.6 Program Modifications

Generally, the water quality monitoring data shows an improvement in the water quality of the receiving water bodies. Consequently, the stormwater management programs implemented by the permittees, as required by the MS4 permit, appear to be effective.

Until the State implements numeric nutrient standards or more TMDLs are adopted or established by either the Department or EPA, there are no substantial changes proposed to the Palm Beach County permittees' water quality monitoring program.

Table 5-1
Water Quality Monitoring Site Locations

Watershed	Surface Water Classification	Site Designation	Agency	Marine/ Freshwater	Northing	Easting
C-15	III (Fresh)	31E	ERM	Freshwater	760549.91	916736.89
		31C	ERM	Freshwater	760879.83	943443.02
		C15S40	ERM	Freshwater	760236	959269.79
C-16	III (Fresh)	22	ERM	Freshwater	828280.34	957602.68
		24	ERM	Freshwater	820399.97	957270.7
		27B	ERM	Freshwater	802276.58	916052.08
		27A	ERM	Freshwater	802545.25	942880.04
		C16S41	ERM	Freshwater	802739.87	964316.28
C-17	III (Fresh)	12A	ERM	Freshwater	882520.57	953672.56
		C17S44	SFWMD	Freshwater	903830.19	955552.7
C-18	I (Fresh)	16	ERM	Freshwater	923477.26	902076.42
		15	ERM	Freshwater	901986.07	931378.31
C-51 W	III (Fresh)	38B	ERM	Freshwater	854963.27	867962.99
C-51 E	III (Fresh)	37B	ERM	Freshwater	853637.29	916592.84
		C51S155	SFWMD	Freshwater	841132.85	964349.43
Lox	III (Fresh)	69	LRD	Freshwater	947071.77	924822.4
	III (Marine)	30	LRD	Marine	961625.76	961625.76
		51	LRD	Marine	954939.97	948224.55
		62	LRD	Marine	949558.67	942243.82
	II	72	LRD	Marine	946223.78	954573.37
	I (Fresh)	C18G92	SFWMD	Freshwater	937389.78	924697.78
		C18S46	SFWMD	Freshwater	946198.14	935782.17
LWL-N	III (Marine)	LWL-1	ERM	Marine	913398.12	964095.22
		11	ERM	Marine	908969.28	962655.71
		13	ERM	Marine	900706.79	964049.58
		LWL-4	ERM	Marine	898346.674	970040.357
LWL-C	III (Marine)	LWL-8	ERM	Marine	856238.635	968284.926
		18C	ERM	Marine	839740.15	969747.03
		18D	ERM	Marine	835593.23	967942.19
		LWL-11	ERM	Marine	830580.53	967926.64
		LWL-13	ERM	Marine	819086.28	968516.09
LWL-S	III (Marine)	LWL-18	ERM	Marine	798402.11	965585.04

Table 5-2
Parameter Collection Schedule

Parameter	ERM		SFWMD	LRF
	Freshwater	Marine		
Alkalinity*	--	--	--	M
Arsenic	BM	Q	--	--
Cadmium	BM	Q	--	--
Chlorophyll-a (corrected)	BM	M	--	M
Copper	BM	Q	--	--
Dissolved Oxygen	BM	M	M	M
Fecal Coliform	--	--	--	M
Lead	BM	Q	--	--
Nitrogen, Ammonia	BM	M	M	M
Nitrogen, Nitrate-Nitrite	BM	M	M	M
Nitrogen, Total Kjeldahl	BM	M	M	M
pH	BM	M	M	M
Phosphorus, Orthophosphate	BM	M	M	M
Phosphorus, Total	BM	M	M	M
Salinity†	--	M	--	M
Specific Conductivity	BM	M	M	M
Temperature	BM	M	M	M
Total Hardness (as CaCO3)*	BM	--	--	--
Total Suspended Solids*	BM	--	M	M
Turbidity	BM	M	M	M
Zinc*	BM	Q	--	--

Notes: 1. Not all parameters are collected for every site.
2. Loxahatchee River District Sites 62, 69, and 72, are sampled monthly. Sites 30, 69, and 51 bi-monthly.
3. ERM – Palm Beach County Environmental Resource Management
4. District – South Florida Water Management District

M (Monthly)
Q (Quarterly)
BM (Bi-Monthly)
-- (Not Sampled)

Table 5-3

State of Florida Numerical Surface Water Quality Standards per Rule 62-302.530					
Parameter	**Units**	**Class I – Freshwater**	**Class II - Marine**	**Class III - Freshwater**	**Class III Marine - (Tidal)**
PH		6.0 to 8.5	6.5 to 8.5	6.0 to 8.5	6.5 to 8.5
Dissolved Oxygen (saturation value)	%	$\geq$ 38	$\geq$ 38	$\geq$ 38	$\geq$ 42
Turbidity	NTU	$\leq$ 29 above background	$\leq$ 29 above background	$\leq$ 29 above background	$\leq$ 29 above background
Chlorophyll-a (corrected)*	ug/L	Annual geometric mean $\leq$ 20	Annual geometric mean $\leq$ 11	Annual geometric mean $\leq$ 20	Annual geometric mean $\leq$ 11
Fecal Coliform*	#/100mL	$\leq$ 400 counts	$\leq$ 43 counts	$\leq$ 400 counts	$\leq$ 400 counts
Arsenic	mg/L	$\leq$ 0.01	$\leq$ 0.05	$\leq$ 0.05	$\leq$ 0.05
Cadmium	mg/L	$\leq [e^{(0.7409\ [lnH]\ -4.719)}]\ 10^{-3}$	$\leq$ 0.0088	$\leq [e^{(0.7409\ [lnH]\ -4.719)}]\ 10^{-3}$	$\leq$ 0.0088
Copper	mg/L	$\leq [e^{(0.8545\ [lnH]\ -1.702)}]\ 10^{-3}$	$\leq$ 0.0037	$\leq [e^{(0.8545\ [lnH]\ -1.702)}]\ 10^{-3}$	$\leq$ 0.0037
Lead	mg/L	$\leq [e^{(0.1273\ [lnH]\ -4.705)}]\ 10^{-3}$	$\leq$ 0.0085	$\leq [e^{(0.1273\ [lnH]\ -4.705)}]\ 10^{-3}$	$\leq$ 0.0085
Specific Conductance	umho/cm	$\leq$ 1275		$\leq$ 1275	
Zinc	mg/L	$\leq [e^{(0.8473\ [lnH]\ +\ 0.884)}]\ 10^{-3}$	$\leq$ 0.086	$\leq [e^{(0.8473\ [lnH]\ +\ 0.884)}]\ 10^{-3}$	$\leq$ 0.086

Notes:

(1) InH means the natural logarithm of total hardness expressed as milligrams/L of $CaCO_3$. For metals criteria involving equations with hardness, the hardness shall be set at 25 mg/L if actual hardness is < 25 mg/L and set at 400 mg/L if actual hardness is > 400 mg/L.

(2) This criterion is protective of human health not of aquatic life.

(3) DO saturation shall not be below the criteria in more than 10% of the measurements.

Table 5-3
(Page 2 of 3)

State of Florida Numeric Interpretation of the Estuary Specific Narrative Nutrient Criterion per Rule 62-302.532				
Estuary	**Total Phosphorus**	**Total Nitrogen**	**Chlorophyll-a**	**Applicable to Monitoring Sites**
Lower Loxahatchee River	0.032 mg/L as AGM	0.63 mg/L as AGM	1.8 ug/L as AGM	
Middle Loxahatchee River	0.030 mg/L as AGM	0.80 mg/L as AGM	4.0 ug/L as AGM	51
Upper Loxahatchee River	0.075 mg/L as AGM	1.26 mg/L as AGM	5.5 ug/L as AGM	
Loxahatchee River Southwest Fork	0.075 mg/L as AGM	1.26 mg/L as AGM	5.5 ug/L as AGM	72
ICWW North of Loxahatchee River	0.022 mg/L as AGM	0.58 mg/L as AGM	2.7 ug/L as AGM	62
ICWW South of Loxahatchee River	0.035 mg/L as AGM	0.66 mg/L as AGM	4.7 ug/L as AGM	30
Northern Lake Worth Lagoon	0.044 mg/L as AGM	0.54 mg/L as AGM	2.9 ug/L as AGM	LWL-1, LWL-4, 11, 13
Central Lake Worth Lagoon	0.049 mg/L as AGM	0.66 mg/L as AGM	10.2 ug/L	LWL-8, LWL-11, LWL-13, 18C, 18D
ICWW Palm Beach County (Southern Lake Worth Lagoon)	0.146 mg/L as AGM	1.17 mg/L as AGM	13.4 ug/L as AGM	LWL-18
Notes: For estuary segments with criteria expressed as annual geometric means (AGM), the values shall not be exceeded more than once in a three year period. For all other estuary segments, the criteria shall not be exceeded in more than 10 percent of the measurements.				

Table 5-3

State of Florida
Numeric Interpretation of the Narrative Nutrient Lake and Stream Criteria per Rule 62-302.531

Long Term Geometric Mean Lake Color and Alkalinity	Annual Geometric Mean Chlorophyll-a	Minimum calculated numeric Interpretation		Maximum calculated numeric interpretation	
		Annual Geometric Mean Total Phosphorus	Annual Geometric Mean Total Nitrogen	Annual Geometric Mean Total Phosphorus	Annual Geometric Mean Total Nitrogen
≤40 Platinum Cobalt units and > 20 mg/L $CaCO_3$	≤ 20 ug/L	0.03 mg/l	1.05 mg/l	0.09 mg/l	1.91 mg/l

Notes: For lakes, FDEP allows for an acceptable range of annual geometric means of TN and TP, up to the values shown in the "maximum calculated numeric interpretation" column, as long as the applicable chlorophyll-a criterion is achieved in that same year. These numeric interpretations for TN, TP, and chlorophyll-a cannot be exceeded more than once in any consecutive calendar three year period.

State of Florida – Nutrient Criterion for South Florida Canals per Rule 62-302.530(47)(b) and 62-303.351
In no case shall nutrient concentrations of a body of water be altered so as to cause an imbalance in natural population of aquatic flora or fauna. Annual mean chlorophyll-a value less than or equal to 20 ug/l. This is applicable to sites 31E, 31C, C15S40, 22, 24, 27b, 27a, C16S41, 12A, C1744, 16, 15, 38b, 37b C51S155, 69, C18G92 and C18S46.

State of Florida has established nutrient threshold (expressed as annual geometric means) for the Peninsula Region of 20 ug/l for chlorophyll-a, 0.12 mg/l for TP, and 1.54 mg/l for TN. These values cannot be exceeded more than once in a three year period. This is applicable to the C-18 Basin and freshwater portions of the Loxahatchee River Sites 15, 16, C18G92, C18S46, and 69.

Table 5-4
Monitoring Data
Reporting Period October 2014 - September 2015

C-15 Watershed Monitoring Events								
SITE 31E	SAMPLE DATE	12/16/14	01/22/15	03/26/15	05/22/15	07/23/15		Geometric Mean
PARAMETER	UNITS							
Alkalinity	mg/L							
Arsenic	mg/L	0.0025	0.0025	0.0025	0.0025	0.0025		0.00
Cadmium	mg/L	0.0003	0.0003	0.0003	0.0003	0.0003		0.00
Chlorophyll-a (corrected)	ug/L	11.9	14.6	12.2	21.3	25.3		16.28
Copper	mg/L	0.0034	0.0052	0.0036	0.00125	0.0028		0.00
Dissolved Oxygen	% Saturation		76.0	77.7	52.7	64.0		66.80
Fecal Coliform	cfu/100mL							
Lead	mg/L	0.0025	0.0025	0.0025	0.0025	0.0025		0.00
Nitrogen, Ammonia	mg/L	0.065	0.020	0.010	0.010	0.010		0.02
Nitrogen, nitrate + nitrite	mg/L	0.077	0.049	0.001	0.001	0.001		0.01
Nitrogen, Total	mg/L	1.38	1.02	1.30	1.30	1.10		1.21
Nitrogen, Total Kjeldahl	mg/L	1.3	0.97	1.3	1.3	1.1		1.19
pH	None	7.5	7.7	7.8	7.8	8.0		7.75
Phosphorus, orthophosphate	mg/L	0.0830	0.099	0.130	0.075	0.058		0.09
Phosphorus, Total	mg/L	0.1200	0.1600	0.2000	0.17	0.17		0.16
Salinity	ppth							
Specific Conductivity	umho/cm	678	703	728	691	584		674.90
Temperature	deg C	19.1	21.6	26.7	29.6	32.0		25.33
Total Hardness	mg/L	252	233	210	219	177		216.71
Total Suspended Solids	mg/L	6.6	6.5	7.0	10	6		7.10
Turbidity	NTU	6.6	7.8	3.9	13.5	3.6		6.28
Zinc	mg/L	0.0050	0.0050	0.0050	0.0050	0.0050		0.01

Highlighted in "blue" are substituted values that were below the limits of detection. The value shown is the method detection limit provided with the data.

Highlighted in "yellow" are sample values that exceed either the State Water Quality Standards for a specific parameter or Florida'a Impaired Waters Rule criteria for chlorophyll-a.

Table 5-4
Monitoring Data
Reporting Period October 2014 - September 2015
(Page 2 of 32)

C-15 Watershed Monitoring Events								
SITE 31C	**SAMPLE DATE**	**12/16/14**	**1/22/15**	**3/26/15**	**5/22/15**	**7/23/15**		Geometric Mean
PARAMETER	**UNITS**							
Alkalinity	mg/L							
Arsenic	mg/L	0.0025	0.0025	0.0025	0.0025	0.0025		0.00
Cadmium	mg/L	0.0003	0.0003	0.0003	0.0003	0.0003		0.00
Chlorophyll-a (corrected)	ug/L	27.2	8.2	9.9	5.84	4.9		9.10
Copper	mg/L	0.0029	0.0043	0.0013	0.0013	0.0013		0.00
Dissolved Oxygen	% Saturation		96.0	105.1	72.3	36.7		71.93
Fecal Coliform	cfu/100mL							
Lead	mg/L	0.0025	0.0025	0.0025	0.0025	0.0025		0.00
Nitrogen, Ammonia	mg/L	0.021	0.010	0.010	0.010	0.010		0.01
Nitrogen, nitrate + nitrite	mg/L	0.087	0.045	0.047	0.0125	0.013		0.03
Nitrogen, Total	mg/L	0.91	0.65	0.95	0.71	0.64		0.76
Nitrogen, Total Kjeldahl	mg/L	0.82	0.60	0.9	0.7	0.63		0.72
pH	None	7.8	7.9	8.0	7.9	7.37		7.77
Phosphorus, orthophosphate	mg/L	0.0460	0.048	0.039	0.011	0.018		0.03
Phosphorus, Total	mg/L	0.0800	0.0850	0.1100	0.04	0.0450		0.07
Salinity	ppth							
Specific Conductivity	umho/cm	556	649	610	605	490.9		579.53
Temperature	deg C	21.1	21.9	26.9	30.2	31.4		25.97
Total Hardness	mg/L	193	196	174	168	157		176.98
Total Suspended Solids	mg/L	4.3	1.3	2.5	1	2.5		2.02
Turbidity	NTU	2.3	1.6	1.5	1.1	0.7		1.35
Zinc	mg/L	0.0050	0.0050	0.0050	0.0050	0.0050		0.01

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Monitoring Data
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C-15 Watershed Monitoring Events								
SITE C15S40	SAMPLE DATE	12/16/14	01/22/15	03/26/15	05/22/15	07/23/15		
PARAMETER	UNITS							
Alkalinity	mg/L							
Arsenic	mg/L	0.0025	0.0025	0.0025	0.0025	0.0025		
Cadmium	mg/L	0.00025	0.0003	0.0003	0.0003	0.0003		
Chlorophyll-a (corrected)	ug/L	24.9	12.6	13.2	22.1	20.8		
Copper	mg/L	0.0039	0.0043	0.0039	0.0026	0.0013		
Dissolved Oxygen	% Saturation		99.9	131.6		133.1		
Fecal Coliform	cfu/100mL							
Lead	mg/L	0.0025	0.0025	0.0025	0.0025	0.0025		
Nitrogen, Ammonia	mg/L	0.010	0.010	0.010	0.010	0.010		
Nitrogen, nitrate + nitrite	mg/L	0.013	0.013	0.013	0.013	0.013		
Nitrogen, Total	mg/L	0.82	0.57	0.90	1.11	0.98		
Nitrogen, Total Kjeldahl	mg/L	0.81	0.56	0.89	1.1	0.97		
pH	None	8.2	8.2	8.2	8.2	8.6		
Phosphorus, orthophosphate	mg/L	0.015	0.013	0.007	0.002	0.002		
Phosphorus, Total	mg/L	0.0570	0.0560	0.0560	0.0410	0.0450		
Salinity	ppth							
Specific Conductivity	umho/cm	525	529	533	574	494.4		
Temperature	deg C	19.8	20.9	26.6	28.8	32.5		
Total Hardness	mg/L	180	173	160	156	146		
Total Suspended Solids	mg/L	4.1	2.8	2.5	3.1	2.5		
Turbidity	NTU	1.9	2	2.7	4.1	3.5		
Zinc	mg/L	0.005	0.0050	0.0050	0.0050	0.0050		

SITE C15S40	SAMPLE DATE						Geometric Mean	
PARAMETER	UNITS							
Alkalinity	mg/L							
Arsenic	mg/L						0.00	
Cadmium	mg/L						0.00	
Chlorophyll-a (corrected)	ug/L						18.72	
Copper	mg/L						0.00	
Dissolved Oxygen	% Saturation						121.53	
Lead	mg/L						0.00	
Nitrogen, Ammonia	mg/L						0.01	
Nitrogen, nitrate + nitrite	mg/L						0.01	
Nitrogen, Total	mg/L						0.88	
Nitrogen, Total Kjeldahl	mg/L						0.87	
pH	None						8.27	
Phosphorus, orthophosphate	mg/L						0.01	
Phosphorus, Total	mg/L						0.05	
Salinity	ppth							
Specific Conductivity	umho/cm						531.08	
Temperature	deg C						25.74	
Total Hardness	mg/L						163.00	
Total Suspended Solids	mg/L						3.00	
Turbidity	NTU						2.84	
Zinc	mg/L						0.01	

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C-16 Watershed Monitoring Events								
SITE 22	SAMPLE DATE	12/10/14	01/21/15	3/25/2015	05/20/15	07/23/15		Geometric Mean
PARAMETER	UNITS							
Alkalinity	mg/L							
Arsenic	mg/L	0.0025	0.0025	0.0025	0.0025	0.0025		0.00
Cadmium	mg/L	0.0003	0.0003	0.0003	0.0003	0.0003		0.00
Chlorophyll-a (corrected)	ug/L	7.7	7.8	9.27	10.4	16.0		9.86
Copper	mg/L	0.0027	0.0013	0.0013	0.0013	0.0013		0.00
Dissolved Oxygen	% Saturation		102.9	133.7	129.7	51.2		97.77
Fecal Coliform	cfu/100mL							
Lead	mg/L	0.0025	0.0025	0.0025	0.0025	0.0025		0.00
Nitrogen, Ammonia	mg/L	0.010	0.010	0.010	0.010	0.002		0.01
Nitrogen, nitrate + nitrite	mg/L	0.220	0.210	0.0125	0.013	0.013		0.04
Nitrogen, Total	mg/L	0.97	0.93	0.93	0.80	0.94		0.91
Nitrogen, Total Kjeldahl	mg/L	0.75	0.72	0.92	0.79	0.93		0.82
pH	None	8.0	8.1	8.1	8.07	7.91		8.03
Phosphorus, orthophosphate	mg/L	0.0860	0.043	0.022	0.025	0.002		0.02
Phosphorus, Total	mg/L	0.010	0.075	0.078	0.082	0.059		0.05
Salinity	ppth							
Specific Conductivity	umho/cm	864	653	747	728	528		694.87
Temperature	deg C	20.7	21.2	26.4	29.6	31.10		25.43
Total Hardness	mg/L	224	179	211	198	164		193.99
Total Suspended Solids	mg/L	33.8	3.0	6	2.8	2.5		5.32
Turbidity	NTU	2.0	2.2	3.0	2.7	2.5		2.45
Zinc	mg/L	0.0050	0.0050	0.0050	0.0050	0.0050		0.01

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Monitoring Data
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C-16 Watershed Monitoring Events								
SITE 24	**SAMPLE DATE**	**12/10/14**	**01/21/15**	**3/25/2015**	**05/20/15**	**07/23/15**		Geometric Mean
PARAMETER	**UNITS**							
Alkalinity	mg/L							
Arsenic	mg/L	0.0025	0.0025	0.0025	0.0025	0.0025		0.00
Cadmium	mg/L	0.0003	0.0003	0.0003	0.0003	0.0003		0.00
Chlorophyll-a (corrected)	ug/L	27.3	18.3	6.53	9.2	15.6		13.62
Copper	mg/L	0.0013	0.0013	0.0013	0.0041	0.0013		0.00
Dissolved Oxygen	% Saturation		116.1	141.7	141.7	79.3		116.60
Fecal Coliform	cfu/100mL							
Lead	mg/L	0.0025	0.0025	0.0025	0.0025	0.0025		0.00
Nitrogen, Ammonia	mg/L	0.01	0.010	0.010	0.010	0.010		0.01
Nitrogen, nitrate + nitrite	mg/L	0.059	0.0125	0.0125	0.0125	0.0125		0.02
Nitrogen, Total	mg/L	0.94	0.62	0.97	0.81	0.86		0.83
Nitrogen, Total Kjeldahl	mg/L	0.88	0.61	0.96	0.8	0.85		0.81
pH	None	8.2	8.3	8.4	8.1	8.07		8.19
Phosphorus, orthophosphate	mg/L	0.0360	0.006	0.016	0.010	0.002		0.01
Phosphorus, Total	mg/L	0.210	0.056	0.066	0.056	0.054		0.07
Salinity	ppth							
Specific Conductivity	umho/cm	886	648	752	699	519		690.20
Temperature	deg C	20.0	21.7	27.0	29.9	31.0		25.53
Total Hardness	mg/L	215	177	215	182	158		188.07
Total Suspended Solids	mg/L	4.4	5.2	2.5	2.2	2.5		3.16
Turbidity	NTU	2.5	2.6	2.2	3.3	2.6		2.62
Zinc	mg/L	0.0050	0.005	0.0050	0.0050	0.0050		0.01

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Monitoring Data
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C-16 Watershed Monitoring Events								
SITE 27B	**SAMPLE DATE**	**12/16/14**	**01/22/15**	**03/26/15**	**7/26/2015**			Geometric Mean
PARAMETER	**UNITS**							
Alkalinity	mg/L							
Arsenic	mg/L	0.0025	0.0025	0.0025	0.0025			0.00
Cadmium	mg/L	0.0003	0.0003	0.0003	0.0003			0.00
Chlorophyll-a (corrected)	ug/L	17.4	31.1	19.1	50.1			26.83
Copper	mg/L	0.0035	0.0048	0.0013	0.0032			0.00
Dissolved Oxygen	% Saturation		139.70	84.5	67.3			92.62
Fecal Coliform	cfu/100mL							
Lead	mg/L	0.0025	0.0025	0.0025	0.0025			0.00
Nitrogen, Ammonia	mg/L	0.074	0.010	0.010	0.01			0.02
Nitrogen, nitrate + nitrite	mg/L	0.290	0.013	0.048	0.013			0.04
Nitrogen, Total	mg/L	1.49	0.90	1.45	1.51			1.31
Nitrogen, Total Kjeldahl	mg/L	1.2	0.89	1.4	1.5			1.22
pH	None	7.6	8.0	7.7	7.5			7.69
Phosphorus, orthophosphate	mg/L	0.0400	0.0290	0.0350	0.56			0.07
Phosphorus, Total	mg/L	0.092	0.110	0.095	0.74			0.16
Salinity	ppth							
Specific Conductivity	umho/cm	8.47	690	824	731			243.58
Temperature	deg C	19.3	23.4	27.1	30.5			24.71
Total Hardness	mg/L	235	213	194	233			218.10
Total Suspended Solids	mg/L	11.0	5.4	2.5	9			6.05
Turbidity	NTU	5.6	4.0	2.5	3.8			3.82
Zinc	mg/L	0.0050	0.0050	0.0050	0.0050			0.01

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Monitoring Data
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C-16 Watershed Monitoring Events								
SITE 27A	SAMPLE DATE	12/16/14	01/22/15	03/26/15	5/22/2015	07/23/15		Geometric Mean
PARAMETER	UNITS							
Alkalinity	mg/L							
Arsenic	mg/L	0.0025	0.0025	0.0025	0.0025	0.0025		0.00
Cadmium	mg/L	0.0003	0.0003	0.0003	0.0003	0.0003		0.00
Chlorophyll-a (corrected)	ug/L	12.0	6.1	6.7	11.1	6.1		8.03
Copper	mg/L	0.0013	0.0044	0.0013	0.0013	0.0013		0.00
Dissolved Oxygen	% Saturation		90.2	87.0	107.6	99.9		95.84
Fecal Coliform	cfu/100mL							
Lead	mg/L	0.0025	0.0025	0.0025	0.0025	0.0025		0.00
Nitrogen, Ammonia	mg/L	0.010	0.010	0.010	0.01	0.010		0.01
Nitrogen, nitrate + nitrite	mg/L	0.099	0.094	0.013	0.013	0.013		0.03
Nitrogen, Total	mg/L	0.97	0.73	1.00	0.73	0.64		0.80
Nitrogen, Total Kjeldahl	mg/L	0.87	0.64	0.99	0.72	0.63		0.76
pH	None	8.1	8.5	7.8	8.3	7.7		8.07
Phosphorus, orthophosphate	mg/L	0.0230	0.0250	0.0300	0.0073	0.0017		0.01
Phosphorus, Total	mg/L	0.052	0.056	0.073	0.042	0.037		0.05
Salinity	ppth							
Specific Conductivity	umho/cm	776	660	746	613	477.1		645.12
Temperature	deg C	19.57	21.1	26.4	29.9	31.2		25.21
Total Hardness	mg/L	204	190	198	168	157		182.50
Total Suspended Solids	mg/L	1.0	1.0	2.5	1.25	2.5		1.51
Turbidity	NTU	1.3	1.4	1.3	2.6	0.9		1.40
Zinc	mg/L	0.0050	0.0050	0.0050	0.0050	0.0050		0.01

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Monitoring Data
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C-16 Watershed Monitoring Events								
SITE C16S41	**SAMPLE DATE**	**12/16/14**	**01/22/15**	**03/26/15**	**05/22/15**	**07/23/15**		
PARAMETER	**UNITS**							
Alkalinity	mg/L							
Arsenic	mg/L	0.0025	0.0025	0.0025	0.0025	0.0025		
Cadmium	mg/L	0.00025	0.0003	0.0003	0.0003	0.0003		
Chlorophyll-a (corrected)	ug/L	6.18	3.4	7.6	24.4	10.1		
Copper	mg/L	0.00125	0.0036	0.0027	0.0013	0.0013		
Dissolved Oxygen	% Saturation		86.0	109.6	110.0	105.2		
Fecal Coliform	cfu/100mL							
Lead	mg/L	0.0025	0.0025	0.0025	0.0025	0.0025		
Nitrogen, Ammonia	mg/L	0.033	0.028	0.010	0.010	0.010		
Nitrogen, nitrate + nitrite	mg/L	0.210	0.034	0.013	0.013	13.000		
Nitrogen, Total	mg/L	1.00	0.70	0.84	0.81	13.71		
Nitrogen, Total Kjeldahl	mg/L	0.79	0.67	0.83	0.80	0.71		
pH	None	7.9	8.1	8.1	8.4	8.1		
Phosphorus, orthophosphate	mg/L	0.030	0.026	0.021	0.004	0.002		
Phosphorus, Total	mg/L	0.0500	0.0500	0.0590	0.0560	0.0360		
Salinity	ppth							
Specific Conductivity	umho/cm	751	669	658	588	491		
Temperature	deg C	19.4	20.6	26.1	29.0	31.9		
Total Hardness	mg/L	198	185	179	166	153		
Total Suspended Solids	mg/L	1.0	1.0	2.5	2.8	2.5		
Turbidity	NTU	1.1	1.5	1.2	3.1	1.4		
Zinc	mg/L	0.005	0.0050	0.0050	0.0050	0.0050		

SITE C16S41	**SAMPLE DATE**						Geometric Mean	
PARAMETER	**UNITS**							
Alkalinity	mg/L							
Arsenic	mg/L						0.00	
Cadmium	mg/L						0.00	
Chlorophyll-a (corrected)	ug/L						8.27	
Copper	mg/L						0.00	
Dissolved Oxygen	% Saturation						102.19	
Fecal Coliform	cfu/100mL							
Lead	mg/L						0.00	
Nitrogen, Ammonia	mg/L						0.02	
Nitrogen, nitrate + nitrite	mg/L						0.11	
Nitrogen, Total	mg/L						1.46	
Nitrogen, Total Kjeldahl	mg/L						0.76	
pH	None						8.13	
Phosphorus, orthophosphate	mg/L						0.01	
Phosphorus, Total	mg/L						0.05	
Salinity	ppth							
Specific Conductivity	umho/cm						625.10	
Temperature	deg C						24.94	
Total Hardness	mg/L						175.51	
Total Suspended Solids	mg/L						1.77	
Turbidity	NTU						1.54	
Zinc	mg/L						0.01	

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C-17 Watershed Monitoring Events								
SITE 12A	**SAMPLE DATE**	**12/10/14**	**01/21/15**	**03/25/15**	**5/20/2015**	**07/22/15**		Geometric Mean
PARAMETER	**UNITS**							
Alkalinity	mg/L							
Arsenic	mg/L	0.0025	0.0025	0.0025	0.0025	0.0025		0.00
Cadmium	mg/L	0.0003	0.0003	0.0003	0.0003	0.0003		0.00
Chlorophyll-a (corrected)	ug/L	12.6	8.9	6.8	17.9	26.6		12.94
Copper	mg/L	0.0030	0.0013	0.0013	0.0013	0.0013		0.00
Dissolved Oxygen	% Saturation		57.2	99.2	83.0	89.4		80.55
Fecal Coliform	cfu/100mL							
Lead	mg/L	0.0025	0.0025	0.0025	0.0025	0.0025		0.00
Nitrogen, Ammonia	mg/L	0.130	0.150	0.030	0.01	0.010		0.04
Nitrogen, nitrate + nitrite	mg/L	0.270	0.260	0.040	0.0125	0.013		0.05
Nitrogen, Total	mg/L	1.20	1.12	1.02	0.91	1.11		1.07
Nitrogen, Total Kjeldahl	mg/L	0.93	0.86	0.98	0.9	1.10		0.95
pH	None	8.5	8.1	8.0	8.6	7.9		8.18
Phosphorus, orthophosphate	mg/L	0.0130	0.004	0.002	0.002	0.002		0.00
Phosphorus, Total	mg/L	0.005	0.059	0.073	0.089	0.062		0.04
Salinity	ppth							
Specific Conductivity	umho/cm	551	512	831	486	464.9		555.65
Temperature	deg C	18.9	19.8	25.4	28.3	31.0		24.21
Total Hardness	mg/L	181	174	216	176	154		179.12
Total Suspended Solids	mg/L	3.0	4.6	2.5	4.3	5.5		3.82
Turbidity	NTU	4.5	3.8	3.4	3.6	3.6		3.76
Zinc	mg/L	0.0050	0.0050	0.0050	0.0050	0.0050		0.01

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Table 5-4
Monitoring Data
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C-17 Watershed Monitoring Events								
SITE C17S44	SAMPLE DATE	10/16/14	11/13/14	12/09/14	01/15/15	02/12/15	03/19/15	04/16/15
PARAMETER	UNITS							
Alkalinity	mg/L							
Arsenic	mg/L							
Cadmium	mg/L							
Chlorophyll-a (corrected)	ug/L							
Copper	mg/L							
Dissolved Oxygen	% Saturation							
Lead	mg/L							
Nitrogen, Ammonia	mg/L	0.100	0.150	0.083	0.065	0.019	0.029	0.025
Nitrogen, nitrate + nitrite	mg/L	0.074	0.187	0.204	0.133	0.008	0.013	0.009
Nitrogen, Total	mg/L	0.88	1.07	0.90	0.83	0.70	0.72	0.67
Nitrogen, Total Kjeldahl	mg/L							
pH	None	7.3	7.4	7.8	8.0	7.9	7.8	7.9
Phosphorus, orthophosphate	mg/L	0.015	0.012	0.009	0.005	0.001	0.007	0.005
Phosphorus, Total	mg/L	0.0580	0.0490	0.0320	0.0360	0.0320	0.0330	0.0250
Salinity	ppth							
Specific Conductivity	umho/cm	460	460	475	484	523	547	635
Temperature	deg C	27.1	22.9	22.0	22.0	19.1	26.1	28.3
Total Hardness	mg/L							
Total Suspended Solids	mg/L	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Turbidity	NTU	1.9	1.5	2.3	1.5	2.7	1.2	1.2
Zinc	mg/L							

SITE C17S44	SAMPLE DATE	05/14/15	06/11/15	07/09/15	08/06/15	09/03/15	Geometric Mean
PARAMETER	UNITS						
Alkalinity	mg/L						
Arsenic	mg/L						
Cadmium	mg/L						
Chlorophyll-a (corrected)	ug/L						
Copper	mg/L						
Dissolved Oxygen	% Saturation						
Fecal Coliform	cfu/100mL						
Lead	mg/L						
Nitrogen, Ammonia	mg/L	0.032	0.034	0.011	0.019	0.059	0.04
Nitrogen, nitrate + nitrite	mg/L	0.010	0.033	0.018	0.034	0.062	0.04
Nitrogen, Total	mg/L	0.76	0.71	0.64	0.79	0.68	0.77
Nitrogen, Total Kjeldahl	mg/L						
pH	None	7.5	7.5	7.6	8	7.7	7.70
Phosphorus, orthophosphate	mg/L	0.008	0.005	0.002	0.004	0.003	0.01
Phosphorus, Total	mg/L	0.0390	0.0340	0.0370	0.0480	0.0360	0.04
Salinity	ppth	-	-	-	-	-	
Specific Conductivity	umho/cm	436.8	395.5	516	420	401	475.22
Temperature	deg C	28.9	28.6	30.7	29.9	29.9	26.02
Total Hardness	mg/L						
Total Suspended Solids	mg/L	1.5	1.5	1.5	1.5	1.5	1.5
Turbidity	NTU	1.5	1.8	1.8	2.2	1.4	1.70
Zinc	mg/L						

Highlighted in "blue" are substituted values that were below the limits of detection. The value shown is the method detection limit provided with the data.

Highlighted in "yellow" are sample values that exceed either the State Water Quality Standards for a specific parameter or Florida'a Impaired Waters Rule criteria for chlorophyll-a.

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Monitoring Data
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C-18 Watershed Monitoring Events								
SITE 16	**SAMPLE DATE**	**12/10/14**	**01/21/15**	**03/25/15**	**5/20/2015**	**07/22/15**		Geometric Mean
PARAMETER	**UNITS**							
Alkalinity	mg/L							
Arsenic	mg/L	0.0025	0.0025	0.0025	0.0025	0.0025		0.00
Cadmium	mg/L	0.0003	0.0003	0.0003	0.0003	0.0003		0.00
Chlorophyll-a (corrected)	ug/L	1.2	1.6	1.3	2.34	17.2		2.54
Copper	mg/L	0.0013	0.0013	0.0013	0.0013	0.0013		0.00
Dissolved Oxygen	% Saturation		65.4	99.2	31.1	147.1		73.81
Fecal Coliform	cfu/100mL							
Lead	mg/L	0.0025	0.0025	0.0025	0.0025	0.0025		0.00
Nitrogen, Ammonia	mg/L	0.010	0.010	0.010	0.01	0.01		0.01
Nitrogen, nitrate + nitrite	mg/L	0.070	0.013	0.013	0.013	0.013		0.02
Nitrogen, Total	mg/L	0.72	0.54	0.86	0.90	0.87		0.77
Nitrogen, Total Kjeldahl	mg/L	0.65	0.53	0.85	0.89	0.86		0.74
pH	None	8.0	7.9	7.5	8.1	8.1		7.92
Phosphorus, orthophosphate	mg/L	0.0017	0.0017	0.0017	0.0017	0.002		0.00
Phosphorus, Total	mg/L	0.010	0.017	0.019	0.019	0.032		0.02
Salinity	ppth							
Specific Conductivity	umho/cm	380	438	424	621	526		470.48
Temperature	deg C	18.7	18.9	25.2	27.1	33.4		24.04
Total Hardness	mg/L	100	154	151	199	221		159.20
Total Suspended Solids	mg/L	1.0	1.0	2.5	2.6	7		2.15
Turbidity	NTU	0.8	0.6	1.2	4.2	2.9		1.50
Zinc	mg/L	0.0500	0.0500	0.0500	0.0500	0.0500		0.05

Highlighted in "blue" are substituted values that were below the limits of detection. The value shown is the method detection limit provided with the data.

Highlighted in "yellow" are sample values that exceed either the State Water Quality Standards for a specific parameter or Florida'a Impaired Waters Rule criteria for chlorophyll-a.

Table 5-4
Monitoring Data
Reporting Period October 2014 - September 2015

C-18 Watershed Monitoring Events								
SITE 15	**SAMPLE DATE**	**12/10/14**	**01/21/15**	**03/25/15**	**5/20/2015**	**07/22/15**		Geometric Mean
PARAMETER	**UNITS**							
Alkalinity	mg/L							
Arsenic	mg/L	0.0025	0.0025	0.0025	0.0025	0.0025		0.00
Cadmium	mg/L	0.0003	0.0003	0.0003	0.0003	0.0003		0.00
Chlorophyll-a (corrected)	ug/L	0.9	0.9	1.0	1.4	2.8		1.26
Copper	mg/L	0.0013	0.0013	0.0013	0.0013	0.0013		0.00
Dissolved Oxygen	% Saturation		46.8	40.1	53.2	32.6		42.47
Fecal Coliform	cfu/100mL							
Lead	mg/L	0.0025	0.0025	0.0025	0.0025	0.0025		0.00
Nitrogen, Ammonia	mg/L	0.010	0.010	0.010	0.010	0.010		0.01
Nitrogen, nitrate + nitrite	mg/L	0.01	0.01	0.01	0.01	0.01		0.01
Nitrogen, Total	mg/L	0.61	0.60	0.70	1.00	0.99		0.76
Nitrogen, Total Kjeldahl	mg/L	0.60	0.59	0.69	0.99	0.98		0.75
pH	None	7.9	8.1	8.1	8.4	7.3		7.96
Phosphorus, orthophosphate	mg/L	0.002	0.002	0.002	0.002	0.002		0.00
Phosphorus, Total	mg/L	0.010	0.008	0.014	0.012	0.015		0.01
Salinity	ppth							
Specific Conductivity	umho/cm	390	348	378	486	514		418.36
Temperature	deg C	16.8	18.5	24.1	27.6	30.9		22.96
Total Hardness	mg/L	85.4	63..9	89.2	90.1	125		96.24
Total Suspended Solids	mg/L	3.2	1.0	2.5	1.0	2.5		1.82
Turbidity	NTU	1.1	0.4	0.7	1.9	0.6		0.78
Zinc	mg/L	0.0050	0.0050	0.0050	0.005	0.0050		0.01

Highlighted in "blue" are substituted values that were below the limits of detection. The value shown is the method detection limit provided with the data.

Highlighted in "yellow" are sample values that exceed either the State Water Quality Standards for a specific parameter or Florida'a Impaired Waters Rule criteria for chlorophyll-a.

Table 5-4
Monitoring Data
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C-51 W Watershed Monitoring Events								
SITE 38B	**SAMPLE DATE**	**12/10/14**	**01/21/15**	**03/25/15**	**05/20/15**	**07/22/15**		Geometric Mean
PARAMETER	**UNITS**							
Alkalinity	mg/L							
Arsenic	mg/L	0.0025	0.0025	0.0025	0.0025	0.0025		0.00
Cadmium	mg/L	0.0003	0.0003	0.0003	0.0003	0.0003		0.00
Chlorophyll-a (corrected)	ug/L	2.1	3.3	3.2	7.7	32.5		5.64
Copper	mg/L	0.0013	0.0013	0.0013	0.0013	0.0013		0.00
Dissolved Oxygen	% Saturation		77.7	94.9	86.3	137.8		96.77
Fecal Coliform	cfu/100mL							
Lead	mg/L	0.0025	0.0025	0.0025	0.0025	0.0025		0.00
Nitrogen, Ammonia	mg/L	0.040	0.051	0.067	0.010	0.010		0.03
Nitrogen, nitrate + nitrite	mg/L	0.290	0.260	0.260	0.200	0.013		0.14
Nitrogen, Total	mg/L	0.84	1.36	1.46	1.10	1.31		1.19
Nitrogen, Total Kjeldahl	mg/L	0.55	1.10	1.2	0.9	1.3		0.97
pH	None	7.8	7.8	7.8	8.2	8.2		7.96
Phosphorus, orthophosphate	mg/L	0.130	0.047	0.035	0.047	0.100		0.06
Phosphorus, Total	mg/L	0.0260	0.1300	0.2200	0.1100	0.2000		0.11
Salinity	ppth							
Specific Conductivity	umho/cm	855	861	964	823	1050		906.83
Temperature	deg C	18.7	20.1	27.5	27.9	31.9		24.70
Total Hardness	mg/L	186	239	247	200	218		216.78
Total Suspended Solids	mg/L	22.2	34.4	21.5	13.4	12.0		19.25
Turbidity	NTU	34.5	33.6	33.5	16.4	10.9		23.35
Zinc	mg/L	0.0050	0.0050	0.0050	0.0050	0.0050		0.01

Highlighted in "blue" are substituted values that were below the limits of detection. The value shown is the method detection limit provided with the data.

Highlighted in "yellow" are sample values that exceed either the State Water Quality Standards for a specific parameter or Florida'a Impaired Waters Rule criteria for chlorophyll-a.

Table 5-4
Monitoring Data
Reporting Period October 2014 - September 2015
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C-51 E Watershed Monitoring Events								
SITE 37B	**SAMPLE DATE**	**12/10/14**	**01/21/15**	**03/25/15**	**05/20/15**	**07/23/15**		Geometric Mean
PARAMETER	**UNITS**							
Alkalinity	mg/L							
Arsenic	mg/L	0.0025	0.0025	0.0025	0.0025	0.0025		0.00
Cadmium	mg/L	0.0003	0.0003	0.0003	0.0003	0.0003		0.00
Chlorophyll-a (corrected)	ug/L	0.4	1.4	1.3	3.47	16.1		2.06
Copper	mg/L	0.0013	0.0013	0.0013	0.0013	0.0013		0.00
Dissolved Oxygen	% Saturation		97.1	89.2	83.1	70.3		84.34
Fecal Coliform	cfu/100mL							
Lead	mg/L	0.0025	0.0025	0.0025	0.0025	0.0025		0.00
Nitrogen, Ammonia	mg/L	0.130	0.064	0.096	0.045	0.050		0.07
Nitrogen, nitrate + nitrite	mg/L	0.410	0.360	0.320	0.15	0.095		0.23
Nitrogen, Total	mg/L	1.19	1.24	1.24	0.99	0.84		1.09
Nitrogen, Total Kjeldahl	mg/L	0.78	0.88	0.92	0.84	0.74		0.83
pH	None	7.64	7.3	7.8	8.0	7.5		7.65
Phosphorus, orthophosphate	mg/L	0.0680	0.043	0.055	0.049	0.027		0.05
Phosphorus, Total	mg/L	0.0270	0.0870	0.1400	0.099	0.0870		0.08
Salinity	ppth							
Specific Conductivity	umho/cm	836	163	831	785	611		558.45
Temperature	deg C	20.4	26.5	25.8	28.8	31.3		26.30
Total Hardness	mg/L	221	230	226	204	226		221.20
Total Suspended Solids	mg/L	1.0	4.4	10.5	5.2	2.5		3.60
Turbidity	NTU	4.2	12.0	17.5	6.9	1.6		6.28
Zinc	mg/L	0.0050	0.0050	0.0050	0.0050	0.0050		0.01

Highlighted in "blue" are substituted values that were below the limits of detection. The value shown is the method detection limit provided with the data.

Highlighted in "yellow" are sample values that exceed either the State Water Quality Standards for a specific parameter or Florida'a Impaired Waters Rule criteria for chlorophyll-a.

Table 5-4
Monitoring Data
Reporting Period October 2014 - September 2015

C-51 E Watershed Monitoring Events								
SITE C51S155	SAMPLE DATE	10/16/14	11/13/14	12/09/14	01/15/15	02/12/15	03/19/15	04/16/15
PARAMETER	UNITS							
Alkalinity	mg/L							
Arsenic	mg/L							
Cadmium	mg/L							
Chlorophyll-a (corrected)	ug/L							
Copper	mg/L							
Dissolved Oxygen	% Saturation							
Fecal Coliform	cfu/100mL							
Lead	mg/L							
Nitrogen, Ammonia	mg/L	0.085	0.099	0.023	0.052	0.089	0.060	0.006
Nitrogen, nitrate + nitrite	mg/L	0.193	0.314	0.317	0.348	0.504	0.303	0.006
Nitrogen, Total	mg/L	1.08	1.27	1.14	1.10	1.56	1.12	0.81
Nitrogen, Total Kjeldahl	mg/L							
pH	None	7.1	7.5	8.0	8.1	7.7	7.5	8.0
Phosphorus, orthophosphate	mg/L	0.032	0.033	0.022	0.045	0.055	0.052	0.051
Phosphorus, Total	mg/L	0.0660	0.0710	0.0570	0.0800	0.1090	0.0940	0.0980
Salinity	ppth							
Specific Conductivity	umho/cm	600	910	833	849	862	773	833
Temperature	deg C	27.8	23.0	22.5	21.9	19.1	25.4	27.2
Total Hardness	mg/L							
Total Suspended Solids	mg/L	5.0	1.5	1.5	1.5	3.0	1.5	3.0
Turbidity	NTU	5.2	5.2	3.3	5.0	12.9	7.3	3.4
Zinc	mg/L							

SITE C51S155	SAMPLE DATE	05/14/15	06/11/15	07/09/15	08/09/15	09/03/15	Geometric Mean
PARAMETER	UNITS						
Alkalinity	mg/L						
Arsenic	mg/L						
Cadmium	mg/L						
Chlorophyll-a (corrected)	ug/L						
Copper	mg/L						
Dissolved Oxygen	% Saturation						
Lead	mg/L						
Nitrogen, Ammonia	mg/L	0.094	0.041	0.016	0.003	0.009	0.03
Nitrogen, nitrate + nitrite	mg/L	0.242	0.008	0.009	0.003	0.003	0.05
Nitrogen, Total	mg/L	1.15	0.88	0.68	0.75	0.56	0.97
Nitrogen, Total Kjeldahl	mg/L						
pH	None	7.4	7.5	7.5	8.2	7.9	7.69
Phosphorus, orthophosphate	mg/L	0.057	0.072	0.040	0.003	0.001	0.03
Phosphorus, Total	mg/L	0.1070	0.1330	0.0790	0.0520	0.0530	0.08
Salinity	ppth	-	-	-	-	-	
Specific Conductivity	umho/cm	704	587	597	514	451	692.95
Temperature	deg C	28.2	28.9	29.4	29.7	31.0	25.91
Total Hardness	mg/L						
Total Suspended Solids	mg/L	7.0	5.0	3.0	4.0	4.0	2.92
Turbidity	NTU	9.1	6.8	3	2.6	3.2	4.96
Zinc	mg/L						

Highlighted in "blue" are substituted values that were below the limits of detection. The value shown is the method detection limit provided with the data.

Highlighted in "gray" are values taken from the first date where two events within the same month occurred on separate dates.

Highlighted in "yellow" are sample values that exceed either the State Water Quality Standards for a specific parameter or Florida'a Impaired Waters Rule criteria for chlorophyll-a.

Table 5-4
Monitoring Data
Reporting Period October 2014 - September 2015

Loxahatchee River Watershed Monitoring Events								
SITE 69 (Lox)	SAMPLE DATE	10/13/14	11/12/14	12/08/14	01/12/15	02/09/15	03/04/15	04/13/15
PARAMETER	UNITS							
Alkalinity	mg/L	82	131	153	147	139	112	134
Arsenic	mg/L							
Cadmium	mg/L							
Chlorophyll-a (corrected)	ug/L	3.8	2.5	1.6	1.9	1.2	4.9	1.0
Copper	mg/L							
Dissolved Oxygen	% Saturation	44.1	39.3	50.5	57.0	65.2	41.4	34.60
Fecal Coliform	cfu/100mL	8	22	3	9	6	108	13
Lead	mg/L							
Nitrogen, Ammonia	mg/L	0.180	0.090	0.090	0.090	0.030	0.080	0.030
Nitrogen, nitrate + nitrite	mg/L	0.039	0.125	0.122	0.059	0.039	0.054	0.034
Nitrogen, Total	mg/L	0.94	1.00	0.72	1.00	0.94	0.65	0.67
Nitrogen, Total Kjeldahl	mg/L	0.9	0.9	0.6	0.9	0.9	0.6	0.7
pH	None	7.1	7.3	7.4	7.2	7.5	7.1	6.5
Phosphorus, orthophosphate	mg/L	0.012	0.012	0.007	0.009	0.009	0.022	0.012
Phosphorus, Total	mg/L	0.038	0.032	0.026	0.028	0.033	0.054	0.024
Salinity	ppth	0.11	0.20	0.30	0.20	0.20	0.18	0.20
Specific Conductivity	umho/cm							
Temperature	deg C	27.8	21.6	21.7	22.0	19.6	23.9	27.5
Total Hardness	mg/L							
Total Suspended Solids	mg/L	3.0	1.0	3.8	1.2	0.5	1.9	0.8
Turbidity	NTU	1.8	1.1	1.4	1.2	1.0	2.2	1.1
Zinc	mg/L							

SITE 69 (Lox)	SAMPLE DATE	05/04/15	06/08/15	07/13/15	08/10/15	09/14/15	Geometric Mean
PARAMETER	UNITS						
Alkalinity	mg/L	162	151	158	185	181	141.65
Arsenic	mg/L						
Cadmium	mg/L						
Chlorophyll-a (corrected)	ug/L	1.2	1.3	1.3	1.2	6.1	1.92
Copper	mg/L						
Dissolved Oxygen	% Saturation	46.6	35.4	36.4	32.3	17.8	39.86
Fecal Coliform	cfu/100mL	3	3	18	12	24	10.53
Lead	mg/L						
Nitrogen, Ammonia	mg/L	0.030	0.060	0.080	0.090	0.160	0.07
Nitrogen, nitrate + nitrite	mg/L	0.044	0.047	0.054	0.094	0.096	0.06
Nitrogen, Total	mg/L	0.80	1.00	0.85	0.89	0.90	0.85
Nitrogen, Total Kjeldahl	mg/L	0.80	1.00	0.90	0.80	1.00	0.82
pH	None	6.3	7.2	7.5	7.19	6.4	7.03
Phosphorus, orthophosphate	mg/L	0.010	0.012	0.019	0.010	0.020	0.01
Phosphorus, Total	mg/L	0.023	0.027	0.031	0.032	0.059	0.03
Salinity	ppth	-	-	-	-	-	0.23
Specific Conductivity	umho/cm						
Temperature	deg C	25.2	28.0	30.9	29.8	29.3	25.35
Total Hardness	mg/L						
Total Suspended Solids	mg/L	0.7	1.0	0.8	0.9	2.5	1.24
Turbidity	NTU	1.1	0.9	1.1	1.0	2.1	1.27
Zinc	mg/L						

Highlighted in "blue" are substituted values that were below the limits of detection. The value shown is the method detection limit provided with the data.

Highlighted in "yellow" are sample values that exceed either the State Water Quality Standards for a specific parameter or Florida'a Impaired Waters Rule criteria for chlorophyll-a.

Table 5-4
Monitoring Data
Reporting Period October 2014 - September 2015

Loxahatchee River Watershed Monitoring Events (Marine)								
SITE 62 (Lox)	SAMPLE DATE	10/13/14	11/12/14	12/08/14	01/12/15	02/09/15	03/04/15	04/13/15
PARAMETER	UNITS							
Alkalinity	mg/L	98	130	132	157	136	78	143
Arsenic	mg/L							
Cadmium	mg/L							
Chlorophyll-a (corrected)	ug/L	8.6	7.2	3.4	5.9	5.8	3.7	11.3
Copper	mg/L							
Dissolved Oxygen	% Saturation	70.5	74.0	72.8	83.1	87.3	56.5	78.2
Fecal Coliform	cfu/100mL	54	59	24	114	40	152	76
Lead	mg/L							
Nitrogen, Ammonia	mg/L	0.130	0.030	0.030	0.130	0.030	0.050	0.030
Nitrogen, nitrate + nitrite	mg/L	0.064	0.086	0.035	0.075	0.012	0.119	0.005
Nitrogen, Total	mg/L	0.86	0.60	0.24	0.60	0.51	0.92	0.60
Nitrogen, Total Kjeldahl	mg/L	0.8	0.5	0.2	0.5	0.5	0.8	0.6
pH	None	7.3	7.5	7.6	7.5	7.7	7.2	7.5
Phosphorus, orthophosphate	mg/L	0.029	0.020	0.013	0.021	0.010	0.049	0.023
Phosphorus, Total	mg/L	0.060	0.037	0.027	0.039	0.027	0.094	0.053
Salinity	ppth	2.80	15.60	27.30	19.50	21.00	0.30	6.50
Specific Conductivity	umho/cm							
Temperature	deg C	27.4	24.4	22.9	22.5	20.9	24.6	28.1
Total Hardness	mg/L							
Total Suspended Solids	mg/L	3.2	2.7	4.2	3.3	3.5	7.5	4.1
Turbidity	NTU	2.4	1.5	2	2.1	2.3	5.7	3.4
Zinc	mg/L							

SITE 62 (Lox)	SAMPLE DATE	05/04/15	06/08/15	07/13/15	08/10/15	09/10/13		Geometric Mean
PARAMETER	UNITS							
Alkalinity	mg/L	148	143	164	162	148		133.94
Arsenic	mg/L							
Cadmium	mg/L							
Chlorophyll-a (corrected)	ug/L	8.3	5.2	6.5	3.7	6.2		5.94
Copper	mg/L							
Dissolved Oxygen	% Saturation	81.8	70.9	69.0	51.3	55.5		70.01
Fecal Coliform	cfu/100mL	44	22	22	63	64		51.47
Lead	mg/L							
Nitrogen, Ammonia	mg/L	0.030	0.110	0.030	0.040	0.062		0.05
Nitrogen, nitrate + nitrite	mg/L	0.005	0.011	0.005	0.020	0.125		0.03
Nitrogen, Total	mg/L	0.70	0.70	0.50	0.42	0.68		0.579
Nitrogen, Total Kjeldahl	mg/L	0.70	0.70	0.50	0.40	0.80		0.55
pH	None	7.48	7.33	7.55	7.26	7.29		7.43
Phosphorus, orthophosphate	mg/L	0.018	0.028	0.031	0.043	0.054		0.03
Phosphorus, Total	mg/L	0.040	0.055	0.056	0.063	0.072		0.05
Salinity	ppth	-	-	-	-	-	-	8.72
Specific Conductivity	umho/cm							
Temperature	deg C	25.9	29.3	32.8	30.9	30.1		26.41
Total Hardness	mg/L							
Total Suspended Solids	mg/L	4.2	6.3	3.6	3.3	2.6		3.85
Turbidity	NTU	3.1	4.4	2.7	2.3	2.2		2.66
Zinc	mg/L							

Highlighted in "blue" are substituted values that were below the limits of detection. The value shown is the method detection limit provided with the data.

Highlighted in "yellow" are sample values that exceed either the State Water Quality Standards for a specific parameter or Florida'a Impaired Waters Rule criteria for chlorophyll-a.

Table 5-4
Monitoring Data
Reporting Period October 2014 - September 2015

Loxahatchee River Watershed Monitoring Events (Marine)								
SITE 51	**SAMPLE DATE**	**11/20/14**	**01/20/15**	**03/10/15**	**05/12/15**	**07/21/15**	**09/22/15**	Geometric Mean
PARAMETER	**UNITS**							
Alkalinity	mg/L	123	125	119	125	123	70	111.96
Arsenic	mg/L							
Cadmium	mg/L							
Chlorophyll-a (corrected)	ug/L	2.2	4.0	5.8	3.5	3.0	8.5	4.07
Copper	mg/L							
Dissolved Oxygen	% Saturation	78.0	87.4	93.0	81.8	86.9	42.7	75.98
Fecal Coliform	cfu/100mL	24	10	18	2	4	101	12.32
Lead	mg/L							
Nitrogen, Ammonia	mg/L	0.030	0.030	0.050	0.030	0.030	0.120	0.04
Nitrogen, nitrate + nitrite	mg/L	0.012	0.005	0.022	0.005	0.005	0.014	0.01
Nitrogen, Total	mg/L	0.20	0.20	0.20	0.20	0.20	0.20	0.20
Nitrogen, Total Kjeldahl	mg/L	0.20	0.20	0.20	0.20	0.20	0.20	0.20
pH	None	7.8	7.9	7.8	7.8	7.9	7.1	7.72
Phosphorus, orthophosphate	mg/L	0.010	0.005	0.006	0.005	0.005	0.024	0.01
Phosphorus, Total	mg/L	0.020	0.018	0.025	0.020	0.018	0.043	0.02
Salinity	ppth	33.40	35.30	28.20	31.80	33.10	11.10	27.01
Specific Conductivity	umho/cm							
Temperature	deg C	21.1	21.9	24.4	28.8	30.4	28.6	25.61
Total Hardness	mg/L							
Total Suspended Solids	mg/L	3.8	5.9	5.1	4.6	4.5	2.6	4.28
Turbidity	NTU	1.8	3.3	3.3	3.5	1.9	2.2	2.57
Zinc	mg/L							

Highlighted in "blue" are substituted values that were below the limits of detection. The value shown is the method detection limit provided with the data.

Highlighted in "yellow" are sample values that exceed either the State Water Quality Standards for a specific parameter or Florida'a Impaired Waters Rule criteria for chlorophyll-a.

Table 5-4
Monitoring Data
Reporting Period October 2014 - September 2015

Loxahatchee River Watershed Monitoring Events (Marine)								
SITE 72	SAMPLE DATE	10/13/14	11/20/14	12/08/14	01/20/15	02/09/15	03/10/15	04/13/15
PARAMETER	UNITS							
Alkalinity	mg/L	104	129	125	130	125	120	136
Arsenic	mg/L							
Cadmium	mg/L							
Chlorophyll-a (corrected)	ug/L	18.6	2.3	7.4	17.7	10.5	11.5	25.5
Copper	mg/L							
Dissolved Oxygen	% Saturation	71.4	51.1	69.7	84.3	89.1	91.2	128.1
Fecal Coliform	cfu/100mL	50	122	44	48	66	76	96
Lead	mg/L							
Nitrogen, Ammonia	mg/L	0.100	0.200	0.240	0.150	0.030	0.050	0.030
Nitrogen, nitrate + nitrite	mg/L	0.031	0.039	0.051	0.012	0.016	0.042	0.005
Nitrogen, Total	mg/L	0.93	0.40	0.45	0.30	0.42	0.54	0.50
Nitrogen, Total Kjeldahl	mg/L	0.9	0.4	0.4	0.3	0.4	0.5	0.5
pH	None	7.6	7.5	7.7	7.9	7.7	7.7	8.0
Phosphorus, orthophosphate	mg/L	0.011	0.028	0.021	0.005	0.005	0.007	0.006
Phosphorus, Total	mg/L	0.046	0.041	0.035	0.028	0.027	0.038	0.046
Salinity	ppth	9.30	29.50	29.10	33.60	29.60	16.30	28.50
Specific Conductivity	umho/cm							
Temperature	deg C	27.7	22.2	23.1	21.3	20.3	23.9	29.8
Total Hardness	mg/L							
Total Suspended Solids	mg/L	3.3	3.5	2.3	4.4	5.3	3.8	18.8
Turbidity	NTU	2	1.6	1.4	2.9	3.5	2.8	5.2
Zinc	mg/L							

SITE 72	SAMPLE DATE	05/12/15	06/08/15	07/21/15	08/10/15	09/22/15	Geometric Mean
PARAMETER	UNITS						
Alkalinity	mg/L	134	125	116	141	141	126.74
Arsenic	mg/L						
Cadmium	mg/L						
Chlorophyll-a (corrected)	ug/L	9.5	9.7	15.8	21.2	4.9	10.83
Copper	mg/L						
Dissolved Oxygen	% Saturation	86.1	88.2	84.7	96.8	49.3	79.98
Fecal Coliform	cfu/100mL	64	12	16	107	104	55.47
Lead	mg/L						
Nitrogen, Ammonia	mg/L	0.050	0.060	0.140		0.320	0.09
Nitrogen, nitrate + nitrite	mg/L	0.019	0.016	0.013	0.012	0.062	0.02
Nitrogen, Total	mg/L	0.5	0.6	0.49	0.512	0.938	0.52
Nitrogen, Total Kjeldahl	mg/L	0.5	0.6	0.5	0.5	1	0.51
pH	None	7.7	7.6	7.9	7.7	7.2	7.68
Phosphorus, orthophosphate	mg/L	0.009	0.008	0.008	0.008	0.062	0.01
Phosphorus, Total	mg/L	0.035	0.022	0.031	0.039	0.085	0.04
Salinity	ppth	28.10	30.50	32.40	30.10	12.90	24.17
Specific Conductivity	umho/cm						
Temperature	deg C	29.5	29.5	30.8	32.5	29.9	26.39
Total Hardness	mg/L						
Total Suspended Solids	mg/L	4.4	5.6	4.4	4.4	1.2	4.14
Turbidity	NTU	3.4	3.1	2.9	3.2	1.4	2.59
Zinc	mg/L						

Highlighted in "blue" are substituted values that were below the limits of detection. The value shown is the method detection limit provided with the data.

Highlighted in "yellow" are sample values that exceed either the State Water Quality Standards for a specific parameter or Florida'a Impaired Waters Rule criteria for chlorophyll-a.

Table 5-4
Monitoring Data
Reporting Period October 2014 - September 2015

Loxahatchee River Watershed Monitoring Events (Marine)								
SITE 30	SAMPLE DATE	11/19/14	01/19/15	03/09/15	05/11/15	07/20/15	09/21/15	Geometric Mean
PARAMETER	UNITS							
Alkalinity	mg/L	123	125	119	125	120	102	118.72
Arsenic	mg/L							
Cadmium	mg/L							
Chlorophyll-a (corrected)	ug/L	2.4	4.9	6.1	2.8	2.9	7.2	4.02
Copper	mg/L							
Dissolved Oxygen	% Saturation	71.6	85.8	88.3	78.3	84.5	65.0	78.46
Fecal Coliform	cfu/100mL	3	4	63	3	11	49	10.34
Lead	mg/L							
Nitrogen, Ammonia	mg/L	0.030	0.030	0.050	0.030	0.030	0.091	0.04
Nitrogen, nitrate + nitrite	mg/L	0.043	0.005	0.005	0.005	0.006	0.056	0.01
Nitrogen, Total	mg/L	0.20	0.20	0.20	0.20	0.20	0.20	0.20
Nitrogen, Total Kjeldahl	mg/L	0.20	0.20	0.20	0.20	0.20	0.20	0.20
pH	None	7.6	7.8	7.8	7.7	7.8	7.6	7.71
Phosphorus, orthophosphate	mg/L	0.021	0.005	0.006	0.005	0.006	0.0300	0.01
Phosphorus, Total	mg/L	0.026	0.020	0.020	0.016	0.022	0.060	0.02
Salinity	ppth	32.20	33.20	29.80	33.10	30.40	19.50	29.24
Specific Conductivity	umho/cm	49084	50544	45808	50306	52070	31427	45903.26
Temperature	deg C	22.3	21.4	23.7	28.3	30.4	28.9	25.60
Total Hardness	mg/L							
Total Suspended Solids	mg/L	3.5	6.1	3.8	3.5	4.7	3.3	4.05
Turbidity	NTU	1.8	3.0	3.2	2.3	2.2	2.3	2.42
Zinc	mg/L							

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Highlighted in "yellow" are sample values that exceed either the State Water Quality Standards for a specific parameter or Florida'a Impaired Waters Rule criteria for chlorophyll-a.

Table 5-4
Monitoring Data
Reporting Period October 2014 - September 2015

Loxahatchee River Watershed Monitoring Events (Fresh)								
SITE C18G92	SAMPLE DATE	10/16/14	11/13/14	12/09/14	01/15/15	02/12/15	03/19/15	04/30/15
PARAMETER	UNITS							
Alkalinity	mg/L							
Arsenic	mg/L							
Cadmium	mg/L							
Chlorophyll-a (corrected)	ug/L							
Copper	mg/L							
Dissolved Oxygen	% Saturation							
Lead	mg/L							
Nitrogen, Ammonia	mg/L	0.059	0.050	0.025	0.022	0.016	0.008	0.005
Nitrogen, nitrate + nitrite	mg/L	0.030	0.028	0.011	0.005	0.006	0.003	0.003
Nitrogen, Total	mg/L	0.82	0.80	0.80	0.74	0.69	0.72	0.73
Nitrogen, Total Kjeldahl	mg/L							
pH	None	6.9	7.6	7.6	7.8	7.5	7.5	7.3
Phosphorus, orthophosphate	mg/L	0.005	0.001	0.002	0.001	0.001	0.001	0.001
Phosphorus, Total	mg/L	0.0260	0.0270	0.0220	0.0240	0.0130	0.0190	0.0200
Salinity	ppth							
Specific Conductivity	umho/cm	191	283	394	410	419	320	371.5
Temperature	deg C	27.3	25.3	21.8	22.3	20.1	26.6	27.2
Total Hardness	mg/L							
Total Suspended Solids	mg/L	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Turbidity	NTU	1.6	1.7	1.9	2.1	1.2	1.4	1.4
Zinc	mg/L							

SITE C18G92	SAMPLE DATE	05/14/15	06/11/15	07/23/15	08/06/15		Geometric Mean	
PARAMETER	UNITS							
Alkalinity	mg/L							
Arsenic	mg/L							
Cadmium	mg/L							
Chlorophyll-a (corrected)	ug/L							
Copper	mg/L							
Dissolved Oxygen	% Saturation							
Lead	mg/L							
Nitrogen, Ammonia	mg/L	0.010	0.031	0.008	0.010	0.030	0.02	
Nitrogen, nitrate + nitrite	mg/L	0.003	0.008	0.003	0.051	0.085	0.01	
Nitrogen, Total	mg/L	0.73	0.95	0.88	0.91	0.93	0.80	
Nitrogen, Total Kjeldahl	mg/L							
pH	None	7.6	7.2	7.6	7.8	7.5	7.49	
Phosphorus, orthophosphate	mg/L	0.001	0.001	0.002	0.001	0.001	0.00	
Phosphorus, Total	mg/L	0.0180	0.0210	0.0190	0.0180	0.0260	0.02	
Salinity	ppth	-	-	-	-	-		
Specific Conductivity	umho/cm	470	440.1	582.2	569	439	391.80	
Temperature	deg C	29.9	28.8	31.0	31.0	30.0	26.52	
Total Hardness	mg/L							
Total Suspended Solids	mg/L	1.5	1.5	1.5	1.5	1.5	1.50	
Turbidity	NTU	1.3	1.2	1.5	1.2	1.6	1.48	
Zinc	mg/L							

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Table 5-4
Monitoring Data
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Loxahatchee River Watershed Monitoring Events (Fresh)								
SITE C18S46	**SAMPLE DATE**	**10/16/14**	**11/13/14**	**12/09/14**	**01/15/15**	**02/12/15**	**03/19/15**	**04/16/15**
PARAMETER	**UNITS**							
Alkalinity	mg/L							
Arsenic	mg/L							
Cadmium	mg/L							
Chlorophyll-a (corrected)	ug/L							
Copper	mg/L							
Dissolved Oxygen	% Saturation							
Lead	mg/L							
Nitrogen, Ammonia	mg/L	0.042	0.140	0.065	0.061	0.013	0.049	0.012
Nitrogen, nitrate + nitrite	mg/L	0.024	0.037	0.115	0.019	0.003	0.007	0.003
Nitrogen, Total	mg/L	0.88	0.84	0.85	0.66	0.73	0.66	0.69
Nitrogen, Total Kjeldahl	mg/L							
pH	None	7.2	7.4	7.9	7.8	8.0	7.7	8.0
Phosphorus, orthophosphate	mg/L	0.001	0.005	0.001	0.003	0.001	0.003	0.001
Phosphorus, Total	mg/L	0.0290	0.0210	0.0150	0.0170	0.0170	0.0260	0.0160
Salinity	ppth							
Specific Conductivity	umho/cm	187	263	380	432	441	342	318
Temperature	deg C	27.6	22.6	21.9	21.8	19.4	25.7	28.3
Total Hardness	mg/L							
Total Suspended Solids	mg/L	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Turbidity	NTU	1.2	1.2	1.1	1.8	1.9	0.7	1.3
Zinc	mg/L							

SITE C18S46	**SAMPLE DATE**	**05/14/15**	**06/11/15**	**07/09/15**	**08/06/15**	**09/03/15**	Geometric Mean
PARAMETER	**UNITS**						
Alkalinity	mg/L						
Arsenic	mg/L						
Cadmium	mg/L						
Chlorophyll-a (corrected)	ug/L						
Copper	mg/L						
Dissolved Oxygen	% Saturation						
Lead	mg/L						
Nitrogen, Ammonia	mg/L	0.009	0.011	0.007	0.006	0.011	0.02
Nitrogen, nitrate + nitrite	mg/L	0.003	0.003	0.003	0.003	0.003	0.01
Nitrogen, Total	mg/L	0.70	0.77	0.70	0.82	0.68	0.74
Nitrogen, Total Kjeldahl	mg/L						
pH	None	7.7	7.8	7.7	8.0	7.8	7.75
Phosphorus, orthophosphate	mg/L	0.001	0.001	0.002	0.002	0.007	0.00
Phosphorus, Total	mg/L	0.0190	0.0210	0.0290	0.0200	0.0200	0.02
Salinity	ppth	-	-	-	-		
Specific Conductivity	umho/cm	433.7	474.9	570	543	552	393.12
Temperature	deg C	27.2	28.5	29.7	30.2	29.7	25.79
Total Hardness	mg/L						
Total Suspended Solids	mg/L	1.5	1.5	1.5	1.5	1.5	1.50
Turbidity	NTU	1.9	2.2	2.0	2.1	1.6	1.51
Zinc	mg/L						

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Table 5-4
Monitoring Data
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Lake Worth Lagoon North Watershed Monitoring Events (Marine)								
SITE LWL-1	**SAMPLE DATE**	**11/06/14**	**01/29/15**	**02/19/15**	**03/19/15**	**04/30/15**	**05/28/15**	**07/01/15**
PARAMETER	**UNITS**							
Alkalinity	mg/L							
Arsenic	mg/L							
Cadmium	mg/L							
Chlorophyll-a (corrected)	ug/L	3.51	4.7	3.7	4.0	5.2	3.5	7.6
Copper	mg/L							
Dissolved Oxygen	% Saturation							
Fecal Coliform	cfu/100mL							
Lead	mg/L							
Nitrogen, Ammonia	mg/L	0.065	0.003	0.003	0.013	0.011	0.010	0.016
Nitrogen, nitrate + nitrite	mg/L	0.022	0.003	0.016	0.012	0.010	0.003	0.007
Nitrogen, Total	mg/L	0.423	0.240	0.238	0.218	0.286	0.411	0.364
Nitrogen, Total Kjeldahl	mg/L							
pH	None	7.8	7.9	7.8	7.8	7.6	8	8
Phosphorus, orthophosphate	mg/L	0.023	0.002	0.002	0.006	0.001	0.004	0.007
Phosphorus, Total	mg/L	0.06	0.02	0.028	0.024	0.026	0.027	0.044
Salinity	ppth	29.50	33.60	32.00	30.80	32.00	32.90	33.60
Specific Conductivity	umho/cm	45445	51087	48866	47311	48970	50320	51465
Temperature	deg C	23.5	18	19.1	26	26.3	28.6	31.4
Total Hardness	mg/L							
Total Suspended Solids	mg/L	1.5	4.0	4.0	1.5	1.5	1.5	6.0
Turbidity	NTU	2.0	2.2	2.6	1.4	1.8	3.1	2.4
Zinc	mg/L							

SITE LWL-1	**SAMPLE DATE**	**07/29/15**	**08/12/15**				Geometric Mean
PARAMETER	**UNITS**						
Alkalinity	mg/L						
Arsenic	mg/L						
Cadmium	mg/L						
Chlorophyll-a (corrected)	ug/L	9.4	7.4				5.10
Copper	mg/L						
Dissolved Oxygen	% Saturation						
Fecal Coliform	cfu/100mL						
Lead	mg/L						
Nitrogen, Ammonia	mg/L	0.017	0.012				0.01
Nitrogen, nitrate + nitrite	mg/L	0.012	0.003				0.01
Nitrogen, Total	mg/L	0.363	0.443				0.32
Nitrogen, Total Kjeldahl	mg/L						
pH	None	8.0	8.0				7.88
Phosphorus, orthophosphate	mg/L	0.008	0.009				0.00
Phosphorus, Total	mg/L	0.053	0.034				0.03
Salinity	ppth	31.60	30.01				31.75
Specific Conductivity	umho/cm	48674	46733				48726.27
Temperature	deg C	30.9	32.2				25.73
Total Hardness	mg/L						
Total Suspended Solids	mg/L	1.5	1.5				2.18
Turbidity	NTU	1.6	2.1				2.08
Zinc	mg/L						

Table 5-4
Monitoring Data
Reporting Period October 2014 - September 2015

Lake Worth Lagoon North Watershed Monitoring Events (Marine)								
SITE 11	SAMPLE DATE	11/20/14	12/05/14	01/30/15	03/03/15	05/29/15	06/25/15	07/09/15
PARAMETER	UNITS							
Alkalinity	mg/L							
Arsenic	mg/L							
Cadmium	mg/L							
Chlorophyll-a (corrected)	ug/L	0.5	10.3	1.3	29.9	2.3	1.9	4.8
Copper	mg/L							
Dissolved Oxygen	% Saturation			111.0	102.6	98.6	73.0	106.1
Fecal Coliform	cfu/100mL							
Lead	mg/L							
Nitrogen, Ammonia	mg/L	0.057	0.010	0.010	0.010	0.010	0.010	0.010
Nitrogen, nitrate + nitrite	mg/L	0.100	0.013	0.013	0.073	0.013	0.026	0.013
Nitrogen, Total	mg/L	0.47	0.21	0.25	0.27	0.24	0.07	0.20
Nitrogen, Total Kjeldahl	mg/L	0.37	0.20	0.24	0.20	0.23	0.04	0.19
pH	None	7.6	7.7	7.7	7.6	7.5	8.0	8.0
Phosphorus, orthophosphate	mg/L	0.064	0.650	0.053	0.048	0.069	0.085	0.081
Phosphorus, Total	mg/L	0.044	0.050	0.074	0.032	0.082	0.089	0.090
Salinity	ppth	30.23	31.83	33.35	29.64	33.90	34.96	33.73
Specific Conductivity	umho/cm	46533	48698	50750	45722	51690	53240	51234
Temperature	deg C	22.02	22.7	18.3	23.7	27.8	30.7	29.7
Total Hardness	mg/L							
Total Suspended Solids	mg/L							
Turbidity	NTU	1.7	1.6	1.4	1.8	1.8	1.6	1.0
Zinc	mg/L							

SITE 11	SAMPLE DATE						Geometric Mean
PARAMETER	UNITS						
Alkalinity	mg/L						
Arsenic	mg/L						
Cadmium	mg/L						
Chlorophyll-a (corrected)	ug/L						3.28
Copper	mg/L						
Dissolved Oxygen	% Saturation						97.25
Fecal Coliform	cfu/100mL						
Lead	mg/L						
Nitrogen, Ammonia	mg/L						0.01
Nitrogen, nitrate + nitrite	mg/L						0.02
Nitrogen, Total	mg/L						0.22
Nitrogen, Total Kjeldahl	mg/L						0.18
pH	None						7.71
Phosphorus, orthophosphate	mg/L						0.09
Phosphorus, Total	mg/L						0.06
Salinity	ppth						32.47
Specific Conductivity	umho/cm						49627.17
Temperature	deg C						24.62
Total Hardness	mg/L						
Total Suspended Solids	mg/L						
Turbidity	NTU						1.53
Zinc	mg/L						

Highlighted in "blue" are substituted values that were below the limits of detection. The value shown is the method detection limit provided with the data.

Highlighted in "yellow" are sample values that exceed either the State Water Quality Standards for a specific parameter or Florida'a Impaired Waters Rule criteria for chlorophyll-a.

Table 5-4
Monitoring Data
Reporting Period October 2014 - September 2015

Lake Worth Lagoon North Watershed Monitoring Events (Marine)								
SITE 13	SAMPLE DATE	11/20/14	12/05/14	01/30/15	03/03/15	05/29/15	06/25/15	07/09/15
PARAMETER	UNITS							
Alkalinity	mg/L							
Arsenic	mg/L							
Cadmium	mg/L							
Chlorophyll-a (corrected)	ug/L	0.9	5.9	1.6	24.1	2.6	2.0	5.1
Copper	mg/L							
Dissolved Oxygen	% Saturation			109.5	94.0	100.5	70.5	98.1
Fecal Coliform	cfu/100mL							
Lead	mg/L							
Nitrogen, Ammonia	mg/L	0.120	0.028	0.010	0.043	0.010	0.010	0.010
Nitrogen, nitrate + nitrite	mg/L	0.110	0.089	0.013	0.050	0.013	0.013	0.013
Nitrogen, Total	mg/L	0.59	0.39	0.23	0.44	0.26	0.06	0.20
Nitrogen, Total Kjeldahl	mg/L	0.48	0.30	0.22	0.39	0.25	0.04	0.19
pH	None	7.7	7.6	7.6	7.6	7.4	7.9	7.8
Phosphorus, orthophosphate	mg/L	0.047	0.650	0.076	0.030	0.066	0.082	0.077
Phosphorus, Total	mg/L	0.048	0.035	0.074	0.040	0.081	0.083	0.088
Salinity	ppth	24.15	24.05	32.68	20.95	32.78	35.60	32.07
Specific Conductivity	umho/cm	38000	37869	49820	32951	50378	53940	49891
Temperature	deg C	22.5	23.0	18.7	23.9	27.9	30.5	29.7
Total Hardness	mg/L							
Total Suspended Solids	mg/L							
Turbidity	NTU	1.4	2.0	2.7	2.3	2.2	1.7	1.1
Zinc	mg/L							

SITE 13	SAMPLE DATE	01/00/00	01/00/00	01/00/00	01/00/00	01/00/00	Geometric Mean
PARAMETER	UNITS						
Alkalinity	mg/L						
Arsenic	mg/L						
Cadmium	mg/L						
Chlorophyll-a (corrected)	ug/L						3.41
Copper	mg/L						
Dissolved Oxygen	% Saturation						93.52
Fecal Coliform	cfu/100mL						
Lead	mg/L						
Nitrogen, Ammonia	mg/L						0.02
Nitrogen, nitrate + nitrite	mg/L						0.03
Nitrogen, Total	mg/L						0.25
Nitrogen, Total Kjeldahl	mg/L						0.22
pH	None						7.64
Phosphorus, orthophosphate	mg/L						0.08
Phosphorus, Total	mg/L						0.06
Salinity	ppth						28.39
Specific Conductivity	umho/cm						44019.47
Temperature	deg C						24.83
Total Hardness	mg/L						
Total Suspended Solids	mg/L						
Turbidity	NTU						1.84
Zinc	mg/L						

Highlighted in "blue" are substituted values that were below the limits of detection. The value shown is the method detection limit provided with the data.

Highlighted in "yellow" are sample values that exceed either the State Water Quality Standards for a specific parameter or Florida'a Impaired Waters Rule criteria for chlorophyll-a.

Table 5-4
Monitoring Data
Reporting Period October 2014 - September 2015

Lake Worth Lagoon North Watershed Monitoring Events (Marine)								
SITE LWL-4	**SAMPLE DATE**	**11/06/14**	**01/29/15**	**02/19/15**	**03/19/15**	**04/30/15**	**05/28/15**	**07/01/15**
PARAMETER	**UNITS**							
Alkalinity	mg/L							
Arsenic	mg/L							
Cadmium	mg/L							
Chlorophyll-a (corrected)	ug/L	1.61	1.06	1.34	1.77	2.35	1.28	5.19
Copper	mg/L							
Dissolved Oxygen	% Saturation							
Fecal Coliform	cfu/100mL							
Lead	mg/L							
Nitrogen, Ammonia	mg/L	0.013	0.008	0.003	0.005	0.009	0.013	0.01
Nitrogen, nitrate + nitrite	mg/L	0.003	0.003	0.014	0.013	0.012	0.007	0.011
Nitrogen, Total	mg/L	0.112	0.126	0.221	0.131	0.284	0.246	0.35
Nitrogen, Total Kjeldahl	mg/L							
pH	None	7.9	7.9	7.9	7.8	7.5	8	8.1
Phosphorus, orthophosphate	mg/L	0.005	0.001	0.002	0.001	0.001	0.002	0.001
Phosphorus, Total	mg/L	0.021	0.011	0.032	0.014	0.024	0.012	0.032
Salinity	ppth	33	34.8	33.5	34.5	32.8	35.3	34.1
Specific Conductivity	umho/cm	50360	52710	50931	52397	50116	53530	52088
Temperature	deg C	23.9	17.3	16.8	25.3	24.8	27	28.9
Total Hardness	mg/L							
Total Suspended Solids	mg/L	5	1.5	12	5	4	8	13
Turbidity	NTU	4.2	1.6	6.7	2.8	3.6	2.6	7.8
Zinc	mg/L							

SITE LWL-4	**SAMPLE DATE**	**07/29/15**	**08/12/15**			Geometric Mean
PARAMETER	**UNITS**					
Alkalinity	mg/L					
Arsenic	mg/L					
Cadmium	mg/L					
Chlorophyll-a (corrected)	ug/L	1.9	1.7			1.81
Copper	mg/L					
Dissolved Oxygen	% Saturation					
Fecal Coliform	cfu/100mL					
Lead	mg/L					
Nitrogen, Ammonia	mg/L	0.008	0.019			0.01
Nitrogen, nitrate + nitrite	mg/L	0.013	0.003			0.01
Nitrogen, Total	mg/L	0.245	0.341			0.21
Nitrogen, Total Kjeldahl	mg/L					
pH	None	8.1	8.1			7.92
Phosphorus, orthophosphate	mg/L	0.001	0.002			0.00
Phosphorus, Total	mg/L	0.012	0.013			0.02
Salinity	ppth	33.50	32.90			33.81
Specific Conductivity	umho/cm	51257	50424			51522.46
Temperature	deg C	29.7	31.5			24.50
Total Hardness	mg/L					
Total Suspended Solids	mg/L	1.5	1.5			4.22
Turbidity	NTU	1.6	1.0			2.90
Zinc	mg/L					

Table 5-4
Monitoring Data
Reporting Period October 2014 - September 2015
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Lake Worth Lagoon Central Watershed Monitoring Events (Marine)								
SITE LWL-8	**SAMPLE DATE**	**11/5/2014**	**12/18/2014**	**1/28/2015**	**2/18/2015**	**3/18/2015**	**4/29/2015**	**5/27/2015**
PARAMETER	**UNITS**							
Alkalinity	mg/L							
Arsenic	mg/L							
Cadmium	mg/L							
Chlorophyll-a (corrected)	ug/L	7.87	4.09	2.54	3.5	6.81	23.5	8.06
Copper	mg/L							
Dissolved Oxygen	% Saturation							
Fecal Coliform	cfu/100mL							
Lead	mg/L							
Nitrogen, Ammonia	mg/L	0.024	0.006	0.014	0.016	0.017	0.013	0.016
Nitrogen, nitrate + nitrite	mg/L	0.003	0.007	0.042	0.132	0.007	0.013	0.007
Nitrogen, Total	mg/L	0.18	0.237	0.375	0.482	0.408	0.665	0.515
Nitrogen, Total Kjeldahl	mg/L							
pH	None	8	8	7.8	7.9	7.9	7.8	7.9
Phosphorus, orthophosphate	mg/L	0.005	0.011	0.012	0.013	0.003	0.002	0.003
Phosphorus, Total	mg/L	0.043	0.028	0.031	0.036	0.053	0.059	0.051
Salinity	ppth	27.7	32.5	25.4	24.3	26.1	19.2	28.9
Specific Conductivity	umho/cm	43020	49533	39678	38170	40784	30953	44820
Temperature	deg C	21.6	19.8	17.4	20	26.3	26.7	28.6
Total Hardness	mg/L							
Total Suspended Solids	mg/L	14	7	4	5	12	10	11
Turbidity	NTU	9.6	4.3	2.3	3.3	8.9	7	5.9
Zinc	mg/L							

SITE LWL-8	**SAMPLE DATE**	**6/30/2015**	**7/28/2015**	**8/11/2015**		Geometric Mean
PARAMETER	**UNITS**					
Alkalinity	mg/L					
Arsenic	mg/L					
Cadmium	mg/L					
Chlorophyll-a (corrected)	ug/L	9.8	8.9	5.4		6.67
Copper	mg/L					
Dissolved Oxygen	% Saturation					
Fecal Coliform	cfu/100mL					
Lead	mg/L					
Nitrogen, Ammonia	mg/L	0.024	0.037	0.018		0.02
Nitrogen, nitrate + nitrite	mg/L	0.034	0.049	0.02		0.02
Nitrogen, Total	mg/L	0.559	0.322	0.43		0.39
Nitrogen, Total Kjeldahl	mg/L					
pH	None	7.8	7.8	7.9		7.88
Phosphorus, orthophosphate	mg/L		0.012	0.013		0.01
Phosphorus, Total	mg/L	0.063	0.051	0.037		0.04
Salinity	ppth	32.40	32.50	32.40		27.79
Specific Conductivity	umho/cm	49705	49868	49818		43182.82
Temperature	deg C	30.5	30.4	32.4		24.85
Total Hardness	mg/L					
Total Suspended Solids	mg/L	11.0	11.0	6.0		8.46
Turbidity	NTU	7.8	8.4	4.9		5.71
Zinc	mg/L					

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Highlighted in "yellow" are sample values that exceed either the State Water Quality Standards for a specific parameter or Florida'a Impaired Waters Rule criteria for chlorophyll-a.

Table 5-4
Monitoring Data
Reporting Period October 2014 - September 2015

Lake Worth Lagoon Central Watershed Monitoring Events (Marine)								
SITE 18C	SAMPLE DATE	11/20/14	12/05/14	01/30/15	03/03/15	05/29/15	06/25/15	07/31/15
PARAMETER	UNITS							
Alkalinity	mg/L							
Arsenic	mg/L							
Cadmium	mg/L							
Chlorophyll-a (corrected)	ug/L	1.0	15.2	2.1	26.1	5.1	5.3	7.4
Copper	mg/L							
Dissolved Oxygen	% Saturation			99.2	112.2	93.1	62.4	79.1
Fecal Coliform	cfu/100mL							
Lead	mg/L							
Nitrogen, Ammonia	mg/L	0.098	0.010	0.010	0.048	0.082	0.010	0.063
Nitrogen, nitrate + nitrite	mg/L	0.170	0.140	0.150	0.480	0.013	0.027	0.057
Nitrogen, Total	mg/L	0.96	0.59	0.60	1.13	0.66	0.27	0.51
Nitrogen, Total Kjeldahl	mg/L	0.79	0.45	0.45	0.65	0.65	0.24	0.45
pH	None	7.7	7.7	7.9	8.0	7.5	7.9	7.8
Phosphorus, orthophosphate	mg/L	0.039	0.041	0.030	0.053	0.060	0.088	0.076
Phosphorus, Total	mg/L	0.082	0.053	0.049	0.110	0.094	0.078	0.087
Salinity	ppth	18.49	20.65	17.18	10.85	30.77	34.14	32.90
Specific Conductivity	umho/cm	29838	32810	27850	17662	47475	52034	50448
Temperature	deg C	32.3	20.7	26.7	26.2	29.6	31.1	30.7
Total Hardness	mg/L							
Total Suspended Solids	mg/L							
Turbidity	NTU	13.0	7.9	6.1	13.3	21.0	9.1	14.4
Zinc	mg/L							

SITE 18C	SAMPLE DATE	01/00/00	01/00/00			Geometric Mean
PARAMETER	UNITS					
Alkalinity	mg/L					
Arsenic	mg/L					
Cadmium	mg/L					
Chlorophyll-a (corrected)	ug/L					5.57
Copper	mg/L					
Dissolved Oxygen	% Saturation					87.45
Fecal Coliform	cfu/100mL					
Lead	mg/L					
Nitrogen, Ammonia	mg/L					0.03
Nitrogen, nitrate + nitrite	mg/L					0.09
Nitrogen, Total	mg/L					0.62
Nitrogen, Total Kjeldahl	mg/L					0.50
pH	None					7.77
Phosphorus, orthophosphate	mg/L					0.05
Phosphorus, Total	mg/L					0.08
Salinity	ppth					21.96
Specific Conductivity	umho/cm					34653.58
Temperature	deg C					27.90
Total Hardness	mg/L					
Total Suspended Solids	mg/L					
Turbidity	NTU					11.26
Zinc	mg/L					

Highlighted in "blue" are substituted values that were below the limits of detection. The value shown is the method detection limit provided with the data.

Highlighted in "yellow" are sample values that exceed either the State Water Quality Standards for a specific parameter or Florida'a Impaired Waters Rule criteria for chlorophyll-a.

Table 5-4
Monitoring Data
Reporting Period October 2014 - September 2015

Lake Worth Lagoon Central Watershed Monitoring Events (Marine)								
SITE 18D	**SAMPLE DATE**	**11/20/14**	**12/05/14**	**01/30/15**	**03/03/15**	**05/29/15**	**06/25/15**	**07/31/15**
PARAMETER	**UNITS**							
Alkalinity	mg/L							
Arsenic	mg/L							
Cadmium	mg/L							
Chlorophyll-a (corrected)	ug/L	2.0	7.4	3.6	13.3	7.2	7.6	7.2
Copper	mg/L							
Dissolved Oxygen	% Saturation			114.7	132.8	115.9	77.3	82.3
Fecal Coliform	cfu/100mL							
Lead	mg/L							
Nitrogen, Ammonia	mg/L	0.086	0.010	0.010	0.010	0.010	0.010	0.063
Nitrogen, nitrate + nitrite	mg/L							
Nitrogen, Total	mg/L	0.64	0.04	0.42	0.47	0.38	0.24	0.49
Nitrogen, Total Kjeldahl	mg/L	0.64	0.04	0.42	0.47	0.38	0.24	0.49
pH	None	7.7	7.7	7.9	7.9	7.6	8.0	7.8
Phosphorus, orthophosphate	mg/L	0.048	0.068	0.034	0.023	0.058	0.086	0.077
Phosphorus, Total	mg/L	0.060	0.073	0.050	0.050	0.072	0.080	0.086
Salinity	ppth	22.47	352.20	22.98	15.12	31.05	34.38	33.15
Specific Conductivity	umho/cm	35587	49178	36328	24813	47811	52500	50760
Temperature	deg C	21.6	21.0	18.8	25.8	28.3	31.5	30.3
Total Hardness	mg/L							
Total Suspended Solids	mg/L							
Turbidity	NTU	7.8	6.3	3.6	7.6	8.8	8.5	11.3
Zinc	mg/L							

SITE 18D	**SAMPLE DATE**	**01/00/00**	**01/00/00**	**01/00/00**	**01/00/00**	Geometric Mean
PARAMETER	**UNITS**					
Alkalinity	mg/L	-	-	-	-	
Arsenic	mg/L					
Cadmium	mg/L					
Chlorophyll-a (corrected)	ug/L					5.99
Copper	mg/L					
Dissolved Oxygen	% Saturation					102.35
Fecal Coliform	cfu/100mL					
Lead	mg/L					
Nitrogen, Ammonia	mg/L					0.02
Nitrogen, nitrate + nitrite	mg/L					
Nitrogen, Total	mg/L					0.30
Nitrogen, Total Kjeldahl	mg/L					0.30
pH	None					7.78
Phosphorus, orthophosphate	mg/L					0.05
Phosphorus, Total	mg/L					0.07
Salinity	ppth					37.13
Specific Conductivity	umho/cm					41185.25
Temperature	deg C					24.91
Total Hardness	mg/L					
Total Suspended Solids	mg/L					
Turbidity	NTU					7.33
Zinc	mg/L					

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Table 5-4
Monitoring Data
Reporting Period October 2014 - September 2015

Lake Worth Lagoon Central Watershed Monitoring Events (Marine)								
SITE LWL-11	SAMPLE DATE	11/5/2014	12/18/2014	1/28/2015	2/18/2015	3/18/2015	4/29/2015	5/27/2015
PARAMETER	UNITS							
Alkalinity	mg/L							
Arsenic	mg/L							
Cadmium	mg/L							
Chlorophyll-a (corrected)	ug/L	13.30	3.82	2.84	4.18	6.59	14.60	5.67
Copper	mg/L							
Dissolved Oxygen	% Saturation							
Fecal Coliform	cfu/100mL							
Lead	mg/L							
Nitrogen, Ammonia	mg/L	0.012	0.006	0.017	0.010	0.011	0.013	0.013
Nitrogen, nitrate + nitrite	mg/L	0.028	0.015	0.069	0.076	0.014	0.012	0.007
Nitrogen, Total	mg/L	0.29	0.28	0.48	0.43	0.34	0.56	0.49
Nitrogen, Total Kjeldahl	mg/L							
pH	None	8.0	7.9	7.9	7.9	7.8	7.9	7.9
Phosphorus, orthophosphate	mg/L	0.006	0.009	0.015	0.008	0.003	0.001	0.001
Phosphorus, Total	mg/L	0.049	0.033	0.034	0.027	0.035	0.054	0.060
Salinity	ppth	24.70	32.90	24.20	26.80	24.90	25.00	33.20
Specific Conductivity	umho/cm	38763	50131	38020	41755	44711	39239	50800
Temperature	deg C	21.5	20.4	17.7	20.5	26.7	26.3	28.4
Total Hardness	mg/L							
Total Suspended Solids	mg/L	19.0	6.0	1.0	3.0	6.0	10.0	19.0
Turbidity	NTU	8.8	5.4	2.6	2.7	4.8	6.8	9.6
Zinc	mg/L							

SITE LWL-11	SAMPLE DATE	06/30/15	07/28/15	08/11/15		Geometric Mean
PARAMETER	UNITS					
Alkalinity	mg/L					
Arsenic	mg/L					
Cadmium	mg/L					
Chlorophyll-a (corrected)	ug/L	7.5	8.8	8.3		6.69
Copper	mg/L					
Dissolved Oxygen	% Saturation					
Fecal Coliform	cfu/100mL					
Lead	mg/L					
Nitrogen, Ammonia	mg/L	0.011	0.05	0.011		0.01
Nitrogen, nitrate + nitrite	mg/L	0.013	0.028	0.003		0.02
Nitrogen, Total	mg/L	0.46	0.29	0.4		0.39
Nitrogen, Total Kjeldahl	mg/L					
pH	None	8.0	7.9	8		7.92
Phosphorus, orthophosphate	mg/L	0.004	0.007	0.002		0.00
Phosphorus, Total	mg/L	0.036	0.047	0.037		0.04
Salinity	ppth	34.10	34.20	32.70		28.96
Specific Conductivity	umho/cm	52000	52122	50180		45423.39
Temperature	deg C	30	30.1	32.1		24.91
Total Hardness	mg/L					
Total Suspended Solids	mg/L	12.0	12.0	13.0		7.70
Turbidity	NTU	7.3	10.5	8.9		6.10
Zinc	mg/L					

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Highlighted in "yellow" are sample values that exceed either the State Water Quality Standards for a specific parameter or Florida'a Impaired Waters Rule criteria for chlorophyll-a.

Table 5-4
Monitoring Data
Reporting Period October 2014 - September 2015

Lake Worth Lagoon Central Watershed Monitoring Events (Marine)								
SITE LWL-13	**SAMPLE DATE**	**11/04/14**	**12/17/14**	**01/28/15**	**02/17/15**	**03/16/15**	**04/28/15**	**05/26/15**
PARAMETER	**UNITS**							
Alkalinity	mg/L							
Arsenic	mg/L							
Cadmium	mg/L							
Chlorophyll-a (corrected)	ug/L	9.55	1.95	4.03	3.42	3.99	7.4	2.39
Copper	mg/L							
Dissolved Oxygen	% Saturation							
Fecal Coliform	cfu/100mL							
Lead	mg/L							
Nitrogen, Ammonia	mg/L	0.016	0.014	0.011	0.008	0.018	0.018	0.02
Nitrogen, nitrate + nitrite	mg/L	0.044	0.006	0.033	0.026	0.003	0.01	0.006
Nitrogen, Total	mg/L	0.476	0.182	0.338	0.235	0.247	0.545	0.288
Nitrogen, Total Kjeldahl	mg/L							
pH	None	8	7.8	7.9	7.8	7.8	7.8	7.8
Phosphorus, orthophosphate	mg/L	0.007	0.006		0.003	0.001	0.001	0.001
Phosphorus, Total	mg/L	0.032	0.023	0.026	0.02	0.022	0.038	0.02
Salinity	ppth	25.2	34.1	27.4	29.4	31.4	27.1	35.3
Specific Conductivity	umho/cm	39397	51688	42600	45302	48233	42250	53525
Temperature	deg C	21.3	20.6	17.7	20.7	25.7	27.3	28.4
Total Hardness	mg/L							
Total Suspended Solids	mg/L	6	4	1	4	4	6	9
Turbidity	NTU	5.8	3.6	1.4	1.8	3.1	3.9	3.2
Zinc	mg/L							

SITE LWL-13	**SAMPLE DATE**	**6/29/2015**	**7/28/2015**	**8/10/2015**		Geometric Mean
PARAMETER	**UNITS**					
Alkalinity	mg/L					
Arsenic	mg/L					
Cadmium	mg/L					
Chlorophyll-a (corrected)	mg/m3	2.8	7.0	3.7		4.08
Copper	mg/L					
Dissolved Oxygen	mg/L					
Fecal Coliform	cfu/100mL					
Lead	mg/L					
Nitrogen, Ammonia	mg/L	0.011	0.003	0.003		0.01
Nitrogen, nitrate + nitrite	mg/L	0.011	0.01	0.007		0.01
Nitrogen, Total	mg/L	0.327	0.23	0.275		0.30
Nitrogen, Total Kjeldahl	mg/L					
pH	None	8	8	8.0		7.89
Phosphorus, orthophosphate	mg/L	0.002	0.001	0.001		0.00
Phosphorus, Total	mg/L	0.017	0.025	0.013		0.02
Salinity	ppth	35.20	33.60	32.40		30.91
Specific Conductivity	umho/cm	53501	51397	49788		47517.46
Temperature	deg C	29.7	30.4	31.2		24.86
Total Hardness	mg/L					
Total Suspended Solids	mg/L	3.0	6.0	1.0		3.61
Turbidity	NTU	2.1	5.9	2		2.95
Zinc	mg/L					

Highlighted in "blue" are substituted values that were below the limits of detection. The value shown is the method detection limit provided with the data.

Highlighted in "yellow" are sample values that exceed either the State Water Quality Standards for a specific parameter or Florida'a Impaired Waters Rule criteria for chlorophyll-a.

Table 5-4
Monitoring Data
Reporting Period October 2014 - September 2015

Lake Worth Lagoon South Watershed Monitoring Events (Marine)								
SITE LWL-18	**SAMPLE DATE**	**11/04/14**	**12/17/14**	**01/28/15**	**02/17/15**	**03/16/15**	**04/28/15**	**05/26/15**
PARAMETER	**UNITS**							
Alkalinity	mg/L							
Arsenic	mg/L							
Cadmium	mg/L							
Chlorophyll-a (corrected)	ug/L	10.4	3.0	2.8	2.2	4.6	14.2	4.2
Copper	mg/L							
Dissolved Oxygen	% Saturation							
Fecal Coliform	cfu/100mL							
Lead	mg/L							
Nitrogen, Ammonia	mg/L	0.018	0.029	0.013	0.033	0.034	0.013	0.015
Nitrogen, nitrate + nitrite	mg/L	0.027	0.038	0.007	0.048	0.031	0.012	0.011
Nitrogen, Total	mg/L	0.576	0.309	0.239	0.361	0.360	0.411	0.366
Nitrogen, Total Kjeldahl	mg/L							
pH	None	8	7.8	8	7.8	7.8	7.8	7.7
Phosphorus, orthophosphate	mg/L	0.010	0.015	0.001	0.014	0.011	0.004	0.001
Phosphorus, Total	mg/L	0.042	0.040	0.017	0.041	0.034	0.041	0.029
Salinity	ppth	17	32.7	33.2	28.9	30.3	31.8	32.3
Specific Conductivity	umho/cm	27544	49820	50585	44050	46736	48907	49600
Temperature	deg C	21.9	21.8	19.2	20.8	26.0	28.0	30.6
Total Hardness	mg/L							
Total Suspended Solids	mg/L	6.0	6.0	1.0	22.0	4.0	6.0	11.0
Turbidity	NTU	5.6	3.4	1.9	5.1	2.5	4.4	3.4
Zinc	mg/L							

SITE LWL-18	**SAMPLE DATE**	**6/29/2015**	**7/28/2015**	**8/10/2015**			Geometric Mean	
PARAMETER	**UNITS**							
Alkalinity	mg/L							
Arsenic	mg/L							
Cadmium	mg/L							
Chlorophyll-a (corrected)	ug/L	4.4	8.3	6.4			5.11	
Copper	mg/L							
Dissolved Oxygen	% Saturation							
Fecal Coliform	cfu/100mL							
Lead	mg/L							
Nitrogen, Ammonia	mg/L	0.057	0.075	0.024			0.03	
Nitrogen, nitrate + nitrite	mg/L	0.050	0.096	0.030			0.03	
Nitrogen, Total	mg/L	0.04	0.39	0.42			0.30	
Nitrogen, Total Kjeldahl	mg/L							
pH	None	7.8	7.7	7.9			7.83	
Phosphorus, orthophosphate	mg/L	0.018	0.022	0.011			0.01	
Phosphorus, Total	mg/L	0.0030	0.0470	0.0350			0.03	
Salinity	ppth	33.40	32.40	32.80			29.99	
Specific Conductivity	umho/cm	51130	49719	50430			46214.58	
Temperature	deg C	31	30.7	32			25.77	
Total Hardness	mg/L							
Total Suspended Solids	mg/L	3	4	5			5.13	
Turbidity	NTU	3.4	3.5	3.5			3.51	
Zinc	mg/L							

Highlighted in "blue" are substituted values that were below the limits of detection. The value shown is the method detection limit provided with the data.

Highlighted in "yellow" are sample values that exceed either the State Water Quality Standards for a specific parameter or Florida'a Impaired Waters Rule criteria for chlorophyll-a.

TABLE 5-5
Summary of Exceedences per Site by Parameter
October 1, 2014 - September 30, 2015

Watershed	Site	Dissolved Oxygen	Copper	Turbidity	Fecal Coliform	pH	Total Nitrogen (Annual Geometric Mean)	Total Phosphorus (Annual Geometric Mean)	Chlorophyll-a* (Annual Geometric Mean)
C-15	31E								
	31C								
	C15S40								
Watershed % Exceedence									
C-16	22								
	24								
	27B								
	27A								
	C16S41								
Watershed % Exceedence									
C-17	12A					1/5			
	C17S44								
Watershed % Exceedence						*5.88%*			
C-18	16								
	15								
Watershed % Exceedence									
C-51 W	38B			3/5					
Watershed % Exceedence				60.0%					
C-51 E	37B								
	C51S155								
Watershed % Exceedence									
Loxahatchee River	69								
	62							0.05	5.9
	51								4.1
	72				10/12				10.8
	30								
	C18G92								
	C18S46								
Watershed % Exceedence					*23.8%*			*20.0%*	*60.0%*
Lake Worth Lagoon North	LWL-1								5.1
	11							0.06	3.3
	13							0.06	3.4
	LWL-4								
Watershed % Exceedence								*50.00%*	*75.0%*
Lake Worth Lagoon Central	LWL-8								
	18C							0.08	
	18D							0.07	
	LWL-11								
	LWL-13								
Watershed % Exceedence								*40.0%*	
Lake Worth Lagoon South Watershed	LWL-18								
Watershed % Exceedence									

Table 5-6

Monitoring Data Summary - C-15 Watershed
January 1999 - September 2015

SITE 31E		03/24/99 - 07/23/15			Samples 78		
		Count	Geometric Mean	Median	Max	Min	Standard Deviation
Alkalinity	mg/L	22	165	163	210	123	23
Arsenic	mg/L	61	0.0024	0.0025	0.0069	0.0005	0.0011
Cadmium	mg/L	75	0.0006	0.0005	0.0050	0.0002	0.0018
Chlorophyll-a (corrected)	ug/L	66	23.7	24.8	120.0	2.5	24.1
Copper	mg/L	74	0.0051	0.0050	0.0200	0.0013	0.0035
Dissolved Oxygen	% Saturation	75	6.5	6.5	77.7	1.7	14.3
Fecal Coliform	cfu/100mL	33	67	50	5000	1	875
Lead	mg/L	64	0.0020	0.0024	0.0050	0.0005	0.0015
Nitrogen, Ammonia	mg/L	73	0.051	0.049	0.820	0.007	0.132
Nitrogen, nitrate + nitrite	mg/L	68	0.048	0.050	0.785	0.001	0.184
Nitrogen, Total	mg/L	68	1.61	1.58	3.87	0.83	0.65
Nitrogen, Total Kjeldahl	mg/L	71	1.51	1.53	3.84	0.65	0.65
pH	None	75	7.5	7.6	8.3	6.3	0.4
Phosphorus, orthophosphate	mg/L	71	0.125	0.130	1.330	0.003	0.225
Phosphorus, Total	mg/L	69	0.251	0.240	1.490	0.060	0.267
Salinity	ppth	0	None	None	None	None	None
Specific Conductivity	umho/cm	76	548	557	833	227	113
Temperature	deg C	76	25.3	25.9	32.0	16.7	3.9
Total Hardness	mg/L	73	200	197	390	118	37
Total Suspended Solids	mg/L	73	6.5	7.1	18.0	1.0	3.6
Turbidity	NTU	74	4.5	4.8	15.9	0.2	2.8
Zinc	mg/L	75	0.0057	0.0050	0.0140	0.0025	0.0029

SITE 31C		01/28/99 - 07/23/15			Samples 79		
		Count	Geometric Mean	Median	Max	Min	Standard Deviation
Alkalinity	mg/L	19	148	150	169	123	13
Arsenic	mg/L	59	0.0026	0.0025	0.0250	0.0005	0.0032
Cadmium	mg/L	76	0.0006	0.0005	0.0050	0.0002	0.0018
Chlorophyll-a (corrected)	ug/L	65	17.0	19.0	93.0	0.1	18.1
Copper	mg/L	76	0.0045	0.0048	0.0140	0.0013	0.0033
Dissolved Oxygen	% Saturation	76	7.5	7.5	105.1	3.1	17.1
Fecal Coliform	cfu/100mL	33	69	70	5000	3	886
Lead	mg/L	64	0.0021	0.0024	0.0070	0.0005	0.0016
Nitrogen, Ammonia	mg/L	73	0.041	0.040	0.456	0.001	0.080
Nitrogen, nitrate + nitrite	mg/L	66	0.071	0.067	1.300	0.006	0.200
Nitrogen, Total	mg/L	66	1.28	1.26	3.09	0.62	0.59
Nitrogen, Total Kjeldahl	mg/L	76	1.12	1.09	3.07	0.11	0.55
pH	None	77	7.5	7.5	8.1	6.3	0.4
Phosphorus, orthophosphate	mg/L	74	0.041	0.046	0.440	0.003	0.083
Phosphorus, Total	mg/L	69	0.123	0.119	0.560	0.020	0.101
Salinity	ppth	0	None	None	None	None	None
Specific Conductivity	umho/cm	78	541	508	11188	391	1211
Temperature	deg C	76	25.9	25.8	31.4	19.2	3.3
Total Hardness	mg/L	76	180	186	260	16	27
Total Suspended Solids	mg/L	72	4.1	4.3	15.7	1.0	3.4
Turbidity	NTU	74	2.7	2.8	13.3	0.1	2.1
Zinc	mg/L	76	0.0056	0.0050	0.0297	0.0025	0.0039

Table 5-6
Monitoring Data Summary - C-15 Watershed
January 1999 - September 2015

SITE C15S40		06/15/00 - 07/23/15			Samples 115		
		Count	Geometric Mean	Median	Max	Min	StanDHrd Deviation
Alkalinity	mg/L	90	148	152	207	32	19
Arsenic	mg/L	26	0.0021	0.0025	0.0046	0.0005	0.0009
Cadmium	mg/L	38	0.0007	0.0007	0.0050	0.0002	0.0020
Chlorophyll-a (corrected)	ug/L	32	12.5	18.0	50.9	1.7	13.6
Copper	mg/L	38	0.0050	0.0051	0.0200	0.0013	0.0039
Dissolved Oxygen	% Saturation	106	7.1	7.0	133.1	2.0	19.4
Fecal Coliform	DHu/100mL	25	85	110	420	1	100
Lead	mg/L	38	0.0020	0.0025	0.0260	0.0003	0.0042
Nitrogen, Ammonia	mg/L	104	0.018	0.014	0.305	0.003	0.054
Nitrogen, nitrate + nitrite	mg/L	110	0.019	0.013	0.470	0.001	0.105
Nitrogen, Total	mg/L	109	1.02	1.00	4.23	0.57	0.41
Nitrogen, Total KjelDHhl	mg/L	113	0.95	0.93	4.18	0.56	0.38
pH	None	113	7.7	7.8	8.6	6.7	0.4
Phosphorus, orthophosphate	mg/L	113	0.052	0.072	0.344	0.001	0.071
Phosphorus, Total	mg/L	100	0.110	0.109	0.702	0.039	0.093
Salinity	ppth	0	None	None	None	None	None
Specific Conductivity	umho/cm	115	491	495	787	392	48
Temperature	deg C	115	25.0	26.0	32.5	15.0	4.1
Total Hardness	mg/L	46	177	178	230	138	18
Total Suspended Solids	mg/L	111	2.8	2.8	43.7	1.0	4.7
Turbidity	NTU	115	2.4	2.6	17.8	0.1	2.3
Zinc	mg/L	38	0.0065	0.0051	0.0492	0.0038	0.0073

Samples = Total number of times samples were taken at a Site (may differ from the number of times a particular parameter was sampled)

Count = Number of times a particular parameter was sampled

Exceedances = Number of times a sample of a particular parameter exceeded the State of Florida Surface Water Quality Standards or Impaired Waters Rule

Table 5-6
Monitoring Data Summary - C-16 Watershed
January 1999 - September 2015

SITE 22		01/29/04 - 07/23/15			Samples 61		
		Count	Geometric Mean	Median	Max	Min	Standard Deviation
Alkalinity	mg/L	22	143	141	185	110	16
Arsenic	mg/L	60	0.0024	0.0025	0.0300	0.0005	0.0036
Cadmium	mg/L	60	0.0004	0.0003	0.0026	0.0002	0.0006
Chlorophyll-a (corrected)	ug/L	59	11.9	15.0	62.7	0.8	13.4
Copper	mg/L	60	0.0033	0.0035	0.0180	0.0010	0.0040
Dissolved Oxygen	% Saturation	58	9.5	8.5	133.7	4.4	26.1
Fecal Coliform	cfu/100mL	16	42	39	600	2	210
Lead	mg/L	48	0.0015	0.0015	0.0029	0.0005	0.0007
Nitrogen, Ammonia	mg/L	58	0.025	0.030	1.010	0.002	0.131
Nitrogen, nitrate + nitrite	mg/L	54	0.060	0.050	1.990	0.006	0.302
Nitrogen, Total	mg/L	53	1.05	1.00	3.07	0.53	0.43
Nitrogen, Total Kjeldahl	mg/L	60	0.88	0.87	2.19	0.27	0.30
pH	None	58	7.9	8.0	8.7	6.5	0.4
Phosphorus, orthophosphate	mg/L	59	0.013	0.022	0.086	0.001	0.021
Phosphorus, Total	mg/L	60	0.060	0.059	0.840	0.010	0.112
Salinity	ppth	0	None	None	None	None	None
Specific Conductivity	umho/cm	58	503	510	1008	7	146
Temperature	deg C	59	25.1	24.9	36.3	17.1	4.4
Total Hardness	mg/L	60	183	185	239	147	22
Total Suspended Solids	mg/L	59	3.8	4.2	33.8	1.0	4.5
Turbidity	NTU	58	2.3	2.5	5.7	0.3	1.2
Zinc	mg/L	60	0.0049	0.0050	0.0600	0.0013	0.0079

SITE 24		01/25/99 - 07/23/15			Samples 77		
		Count	Geometric Mean	Median	Max	Min	Standard Deviation
Alkalinity	mg/L	16	113	150	177	3	39
Arsenic	mg/L	55	0.0025	0.0025	0.0063	0.0005	0.0010
Cadmium	mg/L	70	0.0005	0.0004	0.0050	0.0002	0.0018
Chlorophyll-a (corrected)	ug/L	65	13.1	14.2	43.0	2.0	10.3
Copper	mg/L	70	0.0036	0.0039	0.0113	0.0007	0.0031
Dissolved Oxygen	% Saturation	74	9.6	8.7	141.7	4.7	26.1
Fecal Coliform	cfu/100mL	30	67	95	2300	1	491
Lead	mg/L	63	0.0021	0.0025	0.0050	0.0007	0.0014
Nitrogen, Ammonia	mg/L	71	0.025	0.030	0.096	0.007	0.020
Nitrogen, nitrate + nitrite	mg/L	67	0.041	0.040	0.940	0.001	0.153
Nitrogen, Total	mg/L	67	1.00	1.00	2.67	0.11	0.44
Nitrogen, Total Kjeldahl	mg/L	68	0.90	0.92	2.61	0.09	0.43
pH	None	74	7.9	8.0	8.8	7.1	0.4
Phosphorus, orthophosphate	mg/L	70	0.012	0.017	0.230	0.001	0.034
Phosphorus, Total	mg/L	72	0.064	0.057	3.053	0.020	0.355
Salinity	ppth	0	None	None	None	None	None
Specific Conductivity	umho/cm	75	533	497	4220	348	444
Temperature	deg C	74	24.6	25.1	32.7	2.8	4.9
Total Hardness	mg/L	68	180	180	233	140	23
Total Suspended Solids	mg/L	72	4.4	4.8	16.5	1.0	3.3
Turbidity	NTU	74	3.2	3.2	11.4	0.6	1.9
Zinc	mg/L	70	0.0058	0.0050	0.0360	0.0013	0.0054

Table 5-6
Monitoring Data Summary - C-16 Watershed
January 1999 - September 2015

SITE 27B		01/28/99 - 07/26/15			Samples 70		
		Count	Geometric Mean	Median	Max	Min	Standard Deviation
Alkalinity	mg/L	19	174	170	222	121	28
Arsenic	mg/L	51	0.0025	0.0025	0.0120	0.0005	0.0017
Cadmium	mg/L	68	0.0006	0.0005	0.0050	0.0002	0.0019
Chlorophyll-a (corrected)	ug/L	56	15.7	19.1	76.4	2.8	15.8
Copper	mg/L	68	0.0045	0.0044	0.0214	0.0007	0.0040
Dissolved Oxygen	% Saturation	68	5.9	6.1	139.7	1.4	20.2
Fecal Coliform	cfu/100mL	29	139	100	6000	7	1526
Lead	mg/L	62	0.0022	0.0025	0.0067	0.0005	0.0016
Nitrogen, Ammonia	mg/L	66	0.048	0.047	0.740	0.007	0.096
Nitrogen, nitrate + nitrite	mg/L	61	0.075	0.064	0.785	0.006	0.166
Nitrogen, Total	mg/L	60	1.52	1.56	3.42	0.75	0.51
Nitrogen, Total Kjeldahl	mg/L	66	1.36	1.40	3.37	0.68	0.52
pH	None	68	7.5	7.5	8.4	6.7	0.3
Phosphorus, orthophosphate	mg/L	64	0.063	0.063	0.680	0.001	0.158
Phosphorus, Total	mg/L	66	0.162	0.158	0.770	0.030	0.179
Salinity	ppth	0	None	None	None	None	None
Specific Conductivity	umho/cm	69	551	553	10481	8	1204
Temperature	deg C	69	25.3	26.6	32.4	16.5	3.9
Total Hardness	mg/L	68	196	200	288	113	36
Total Suspended Solids	mg/L	66	5.5	6.3	20.0	1.0	4.0
Turbidity	NTU	68	3.2	3.2	11.4	0.6	2.0
Zinc	mg/L	67	0.0059	0.0050	0.0360	0.0013	0.0056

SITE 27A		01/28/99 - 07/23/15			Samples 78		
		Count	Geometric Mean	Median	Max	Min	Standard Deviation
Alkalinity	mg/L	21	151	150	180	128	12
Arsenic	mg/L	59	0.0024	0.0025	0.0060	0.0005	0.0011
Cadmium	mg/L	76	0.0006	0.0005	0.0050	0.0002	0.0018
Chlorophyll-a (corrected)	ug/L	63	15.6	17.8	66.0	1.9	15.6
Copper	mg/L	76	0.0049	0.0050	0.0200	0.0013	0.0032
Dissolved Oxygen	% Saturation	74	8.2	7.3	107.6	2.6	20.4
Fecal Coliform	cfu/100mL	32	52	54	1200	4	255
Lead	mg/L	70	0.0022	0.0025	0.0150	0.0005	0.0022
Nitrogen, Ammonia	mg/L	73	0.035	0.040	2.060	0.002	0.241
Nitrogen, nitrate + nitrite	mg/L	69	0.048	0.050	0.750	0.006	0.141
Nitrogen, Total	mg/L	69	1.21	1.21	4.32	0.15	0.59
Nitrogen, Total Kjeldahl	mg/L	75	1.12	1.20	3.96	0.08	0.54
pH	None	75	7.8	7.8	8.6	6.5	0.4
Phosphorus, orthophosphate	mg/L	67	0.035	0.039	0.440	0.001	0.099
Phosphorus, Total	mg/L	72	0.130	0.126	1.580	0.037	0.218
Salinity	ppth	0	None	None	None	None	None
Specific Conductivity	umho/cm	76	522	513	939	219	121
Temperature	deg C	74	25.4	25.3	32.6	18.5	3.9
Total Hardness	mg/L	76	183	185	258	117	25
Total Suspended Solids	mg/L	67	4.1	5.1	38.0	1.0	5.2
TurBWdity	NTU	75	3.3	3.5	71.5	0.1	8.5
Zinc	mg/L	74	0.0059	0.0050	0.0690	0.0013	0.0096

Table 5-6
Monitoring Data Summary - C-16 Watershed
January 1999 - September 2015

(Page 5 of 19)

SITE C16S41		01/28/99 - 07/23/15			Samples 120		
		Count	Geometric Mean	Median	Max	Min	Standard Deviation
Alkalinity	mg/L	90	147	147	210	119	15
Arsenic	mg/L	26	0.0020	0.0025	0.0036	0.0005	0.0007
Cadmium	mg/L	43	0.0009	0.0008	0.0050	0.0002	0.0022
Chlorophyll-a (corrected)	ug/L	32	8.2	8.5	50.0	2.0	10.4
Copper	mg/L	43	0.0040	0.0039	0.0200	0.0007	None
Dissolved Oxygen	% Saturation	112	7.1	6.9	110.0	2.7	18.1
Fecal Coliform	cfu/100mL	28	104	92	2600	10	663
Lead	mg/L	43	0.0022	0.0025	0.0261	0.0003	0.0040
Nitrogen, Ammonia	mg/L	113	0.025	0.033	2.760	0.001	0.259
Nitrogen, nitrate + nitrite	mg/L	115	0.038	0.050	13.000	0.001	1.210
Nitrogen, Total	mg/L	114	1.06	1.01	13.71	0.53	1.30
Nitrogen, Total Kjeldahl	mg/L	118	0.93	0.88	5.81	0.40	0.51
pH	None	118	7.7	7.8	8.5	6.2	0.4
Phosphorus, orthophosphate	mg/L	118	0.020	0.030	0.209	0.001	0.047
Phosphorus, Total	mg/L	106	0.073	0.065	0.318	0.025	0.056
Salinity	ppth	0	None	None	None	None	None
Specific Conductivity	umho/cm	120	446	477	946	5	126
Temperature	deg C	120	25.1	25.9	56.8	13.1	5.0
Total Hardness	mg/L	50	177	179	224	137	20
Total Suspended Solids	mg/L	115	3.0	3.0	24.9	1.0	3.5
Turbidity	NTU	120	2.4	2.5	10.7	0.1	1.7
Zinc	mg/L	43	0.0065	0.0050	0.1180	0.0032	0.0172

Table 5-6
Monitoring Data Summary - C-17 Watershed
January 1999 - September 2015

SITE 12A		01/19/99 - 07/22/15			Samples 82		
		Count	Geometric Mean	Median	Max	Min	Standard Deviation
Alkalinity	mg/L	25	145	146	185	87	20
Arsenic	mg/L	64	0.0027	0.0025	0.0068	0.0005	0.0014
Cadmium	mg/L	81	0.0006	0.0005	0.0050	0.0002	0.0018
Chlorophyll-a (corrected)	ug/L	68	13.8	16.0	74.8	1.2	11.7
Copper	mg/L	81	0.0039	0.0037	0.0500	0.0013	0.0060
Dissolved Oxygen	% Saturation	77	7.0	6.3	641.0	0.8	74.0
Fecal Coliform	cfu/100mL	35	138	110	4000	23	660
Lead	mg/L	75	0.0019	0.0025	0.0076	0.0004	0.0016
Nitrogen, Ammonia	mg/L	80	0.067	0.055	2.260	0.008	0.265
Nitrogen, nitrate + nitrite	mg/L	73	0.085	0.110	1.590	0.006	0.200
Nitrogen, Total	mg/L	74	1.56	1.20	9.08	0.43	2.45
Nitrogen, Total Kjeldahl	mg/L	80	1.09	1.10	3.10	0.38	0.44
pH	None	80	7.5	7.6	8.6	6.2	0.5
Phosphorus, orthophosphate	mg/L	70	0.009	0.013	0.058	0.001	0.013
Phosphorus, Total	mg/L	76	0.051	0.065	0.340	0.003	0.044
Salinity	ppth	0	None	None	None	None	None
Specific Conductivity	umho/cm	80	449	467	831	231	79
Temperature	deg C	80	24.9	25.4	31.7	16.3	3.7
Total Hardness	mg/L	76	163	172	216	86	27
Total Suspended Solids	mg/L	78	4.5	4.9	15.5	1.0	3.1
Turbidity	NTU	78	3.4	3.8	6.3	0.3	1.3
Zinc	mg/L	81	0.0066	0.0055	0.0614	0.0013	0.0078

SITE C17S44		01/19/99 - 09/03/15			Samples 147		
		Count	Geometric Mean	Median	Max	Min	Standard Deviation
Alkalinity	mg/L	78	158	163	192	112	19
Arsenic	mg/L	14	0.0017	0.0019	0.0049	0.0005	0.0011
Cadmium	mg/L	31	0.0014	0.0008	0.0050	0.0002	0.0022
Chlorophyll-a (corrected)	ug/L	23	9.2	9.1	40.0	1.7	9.7
Copper	mg/L	31	0.0042	0.0050	0.0500	0.0007	0.0089
Dissolved Oxygen	% Saturation	129	6.2	6.4	12.9	0.7	1.9
Fecal Coliform	cfu/100mL	31	96	100	730	5	215
Lead	mg/L	31	0.0021	0.0019	0.0250	0.0003	0.0045
Nitrogen, Ammonia	mg/L	143	0.035	0.040	1.500	0.003	0.136
Nitrogen, nitrate + nitrite	mg/L	144	0.037	0.050	0.374	0.001	0.095
Nitrogen, Total	mg/L	140	0.83	0.93	1.51	0.02	0.26
Nitrogen, Total Kjeldahl	mg/L	126	0.86	0.87	1.33	0.20	0.16
pH	None	145	7.6	7.7	8.3	6.6	0.3
Phosphorus, orthophosphate	mg/L	143	0.006	0.006	0.095	0.001	0.018
Phosphorus, Total	mg/L	136	0.041	0.047	0.126	0.002	0.021
Salinity	ppth	0	None	None	None	None	None
Specific ConEGctivity	umho/cm	147	459	462	728	313	55
Temperature	deg C	147	25.5	26.1	90.0	15.7	6.6
Total Hardness	mg/L	40	174	185	233	90	30
Total Suspended Solids	mg/L	143	2.8	3.0	26.0	0.1	3.3
Turbidity	NTU	146	2.7	2.8	18.1	1.1	1.7
Zinc	mg/L	31	0.0080	0.0100	0.0954	0.0032	0.0161

Samples = Total number of times samples were taken at a Site (may differ from the number of times a particular parameter was sampled)

Count = Number of times a particular parameter was sampled

Exceedances = Number of times a sample of a particular parameter exceeded the State of Florida Surface Water Quality Standards or Impaired Waters Rule

Table 5-6
Monitoring Data Summary - C-18 Watershed
January 1999 - September 2015

SITE 16		01/19/99 - 07/22/15			Samples 80		
		Count	Geometric Mean	Median	Max	Min	Standard Deviation
Alkalinity	mg/L	26	121	139	216	31	53
Arsenic	mg/L	62	0.0020	0.0025	0.0050	0.0005	0.0009
Cadmium	mg/L	79	0.0006	0.0005	0.0050	0.0002	0.0018
Chlorophyll-a (corrected)	ug/L	65	3.9	3.7	43.0	0.6	7.4
Copper	mg/L	77	0.0023	0.0018	0.0100	0.0005	0.0034
Dissolved Oxygen	% Saturation	69	4.1	4.2	147.1	0.3	21.9
Fecal Coliform	cfu/100mL	34	33	20	1400	2	249
Lead	mg/L	77	0.0021	0.0025	0.0125	0.0005	0.0019
Nitrogen, Ammonia	mg/L	76	0.039	0.040	0.264	0.008	0.055
Nitrogen, nitrate + nitrite	mg/L	71	0.041	0.050	1.210	0.006	0.176
Nitrogen, Total	mg/L	71	1.00	1.01	2.35	0.21	0.45
Nitrogen, Total Kjeldahl	mg/L	78	0.93	0.94	2.30	0.16	0.44
pH	None	72	7.3	7.3	9.7	6.0	0.5
Phosphorus, orthophosphate	mg/L	72	0.008	0.009	0.560	0.001	0.066
Phosphorus, Total	mg/L	73	0.035	0.036	0.283	0.001	0.048
Salinity	ppth	0	None	None	None	None	None
Specific Conductivity	umho/cm	72	351	392	737	105	136
Temperature	deg C	72	24.3	24.5	33.4	15.8	3.8
Total Hardness	mg/L	70	129	150	270	30	57
Total Suspended Solids	mg/L	75	2.2	2.0	29.7	1.0	4.2
Turbidity	NTU	76	1.7	1.7	10.2	0.5	1.4
Zinc	mg/L	78	0.0060	0.0050	0.0500	0.0012	0.0113

SITE 15		01/19/99 - 07/22/15			Samples 80		
		Count	Geometric Mean	Median	Max	Min	Standard Deviation
Alkalinity	mg/L	25	111	99	244	41	66
Arsenic	mg/L	62	0.0020	0.0025	0.0068	0.0005	0.0011
Cadmium	mg/L	79	0.0006	0.0005	0.0050	0.0002	0.0018
Chlorophyll-a (corrected)	ug/L	66	2.3	2.3	19.0	0.1	2.6
Copper	mg/L	78	0.0023	0.0018	0.0110	0.0005	0.0035
Dissolved Oxygen	% Saturation	69	3.0	3.5	53.2	0.5	9.8
Fecal Coliform	cfu/100mL	34	48	35	1100	1	230
Lead	mg/L	79	0.0020	0.0025	0.0060	0.0005	0.0014
Nitrogen, Ammonia	mg/L	76	0.045	0.041	8.167	0.007	0.932
Nitrogen, nitrate + nitrite	mg/L	71	0.027	0.025	0.480	0.006	0.093
Nitrogen, Total	mg/L	70	0.96	0.94	4.51	0.34	0.57
Nitrogen, Total Kjeldahl	mg/L	72	0.91	0.91	4.50	0.29	0.56
pH	None	72	7.2	7.3	8.4	2.8	0.7
Phosphorus, orthophosphate	mg/L	71	0.006	0.003	0.071	0.001	0.015
Phosphorus, Total	mg/L	72	0.019	0.020	0.337	0.001	0.050
Salinity	ppth	0	None	None	None	None	None
Specific Conductivity	umho/cm	72	317	356	632	91	131
Temperature	deg C	72	23.4	23.6	30.9	15.8	3.9
Total Hardness	mg/L	66	107	104	260	38	58
Total Suspended Solids	mg/L	75	1.7	1.8	15.0	0.5	2.2
Turbidity	NTU	76	0.8	0.7	18.3	0.1	2.1
Zinc	mg/L	79	0.0055	0.0050	0.0300	0.0013	0.0043

Table 5-6

Monitoring Data Summary - C-51 W and C-51 E Watershed
January 1999 - September 2015

SITE 38B		01/21/99 - 07/22/15			Samples 82		
		Count	Geometric Mean	Median	Max	Min	Standard Deviation
Alkalinity	mg/L	24	136	130	291	62	59
Arsenic	mg/L	64	0.0024	0.0025	0.0160	0.0005	0.0026
Cadmium	mg/L	81	0.0006	0.0005	0.0050	0.0002	0.0018
Chlorophyll-a (corrected)	ug/L	69	6.6	7.3	70.7	1.0	11.0
Copper	mg/L	79	0.0029	0.0025	0.0100	0.0005	0.0032
Dissolved Oxygen	% Saturation	77	6.8	6.9	137.8	0.4	21.5
Fecal Coliform	cfu/100mL	34	66	80	1090	2	211
Lead	mg/L	81	0.0020	0.0025	0.0152	0.0003	0.0020
Nitrogen, Ammonia	mg/L	80	0.066	0.070	0.830	0.008	0.169
Nitrogen, nitrate + nitrite	mg/L	72	0.175	0.210	0.907	0.006	0.232
Nitrogen, Total	mg/L	72	1.70	1.67	4.05	0.72	0.77
Nitrogen, Total Kjeldahl	mg/L	80	1.44	1.39	4.00	0.53	0.77
pH	None	80	7.6	7.6	14.0	6.6	0.8
Phosphorus, orthophosphate	mg/L	75	0.035	0.047	0.184	0.002	0.041
Phosphorus, Total	mg/L	70	0.099	0.100	0.880	0.021	0.118
Salinity	ppth	0	None	None	None	None	None
Specific Conductivity	umho/cm	80	703	733	1834	2	412
Temperature	deg C	80	24.7	25.2	33.4	16.7	4.2
Total Hardness	mg/L	77	211	209	412	70	86
Total Suspended Solids	mg/L	78	9.1	10.0	53.4	1.0	10.8
Turbidity	NTU	78	9.4	10.4	69.9	0.6	13.3
Zinc	mg/L	79	0.0060	0.0050	0.0372	0.0013	0.0062

SITE 37B		01/21/99 - 07/23/15			Samples 80		
		Count	Geometric Mean	Median	Max	Min	Standard Deviation
Alkalinity	mg/L	26	156	163	238	103	37
Arsenic	mg/L	63	0.0022	0.0025	0.0070	0.0002	0.0011
Cadmium	mg/L	79	0.0005	0.0005	0.0050	0.0002	0.0017
Chlorophyll-a (corrected)	ug/L	67	4.2	4.3	22.3	0.4	4.7
Copper	mg/L	79	0.0028	0.0025	0.0100	0.0005	0.0031
Dissolved Oxygen	% Saturation	75	6.1	5.8	97.1	1.9	18.2
Fecal Coliform	cfu/100mL	32	48	44	300	10	88
Lead	mg/L	79	0.0021	0.0025	0.0155	0.0005	0.0020
Nitrogen, Ammonia	mg/L	79	0.065	0.067	0.332	0.008	0.060
Nitrogen, nitrate + nitrite	mg/L	72	0.176	0.199	1.320	0.010	0.224
Nitrogen, Total	mg/L	72	1.27	1.24	6.89	0.20	0.88
Nitrogen, Total Kjeldahl	mg/L	78	1.07	1.00	6.70	0.13	0.82
pH	None	78	7.4	7.5	8.0	2.8	0.6
Phosphorus, orthophosphate	mg/L	75	0.026	0.035	0.175	0.001	0.033
Phosphorus, Total	mg/L	68	0.074	0.080	1.540	0.016	0.203
Salinity	ppth	0	None	None	None	None	None
Specific Conductivity	umho/cm	78	671	691	1198	163	175
Temperature	deg C	78	25.2	26.1	32.2	16.8	3.8
Total Hardness	mg/L	76	214	218	305	124	40
Total Suspended Solids	mg/L	78	4.7	5.4	43.3	1.0	7.7
Turbidity	NTU	77	5.1	5.5	52.7	0.4	11.2
Zinc	mg/L	78	0.0059	0.0050	0.1100	0.0013	0.0127

Table 5-6

Monitoring Data Summary - C-51 W and C-51 E Watershed
January 1999 - September 2015

SITE C51S155		01/21/99 - 09/03/15			Samples 143		
		Count	Geometric Mean	Median	Max	Min	Standard Deviation
Alkalinity	mg/L	86	161	163	216	100	24
Arsenic	mg/L	14	0.0014	0.0016	0.0029	0.0005	0.0008
Cadmium	mg/L	30	0.0015	0.0008	0.0050	0.0002	0.0022
Chlorophyll-a (corrected)	ug/L	31	1.7	3.3	45.0	0.0	8.6
Copper	mg/L	29	0.0051	0.0064	0.0230	0.0017	0.0047
Dissolved Oxygen	% Saturation	122	5.6	6.0	14.0	2.1	1.8
Fecal Coliform	cfu/100mL	29	148	150	2000	2	388
Lead	mg/L	30	0.0022	0.0039	0.0152	0.0005	0.0030
Nitrogen, Ammonia	mg/L	138	0.045	0.058	0.520	0.003	0.069
Nitrogen, nitrate + nitrite	mg/L	136	0.105	0.186	20.900	0.003	1.784
Nitrogen, Total	mg/L	137	1.13	1.13	21.79	0.15	1.82
Nitrogen, Total Kjeldahl	mg/L	127	0.96	0.94	3.87	0.41	0.37
pH	None	140	7.6	7.6	8.5	6.2	0.3
Phosphorus, orthophosphate	mg/L	141	0.023	0.032	0.279	0.001	0.043
Phosphorus, Total	mg/L	130	0.064	0.066	0.200	0.003	0.035
Salinity	ppth	1	0.3300	0.3300	0.3300	0.3300	None
Specific Conductivity	umho/cm	142	570	597	1681	6	183
Temperature	ECg C	142	25.2	25.9	56.3	15.3	4.7
Total Hardness	mg/L	40	172	199	337	1	53
Total SuspenECd Solids	mg/L	139	3.6	4.0	47.0	1.0	6.5
Turbidity	NTU	143	4.9	4.4	59.4	1.1	9.0
Zinc	mg/L	30	0.0079	0.0100	0.0310	0.0032	0.0056

Table 5-6
Monitoring Data Summary - Loxahatchee River Watershed
January 1999 - September 2015

SITE 69 (Lox)		11/20/03 - 09/14/15			Samples 115		
		Count	Geometric Mean	Median	Max	Min	Standard Deviation
Alkalinity	mg/L	105	151	151	245	74	38
Arsenic	mg/L	0	None	None	None	None	None
Cadmium	mg/L	0	None	None	None	None	None
Chlorophyll-a (corrected)	ug/L	103	3.0	3.3	19.5	0.1	4.1
Copper	mg/L	0	None	None	None	None	None
Dissolved Oxygen	% Saturation	110	6.7	5.0	65.2	1.9	16.5
Fecal Coliform	cfu/100mL	105	31	27	13800	3	1347
Lead	mg/L	0	None	None	None	None	None
Nitrogen, Ammonia	mg/L	101	0.087	0.090	0.471	0.025	0.062
Nitrogen, nitrate + nitrite	mg/L	105	0.058	0.059	0.216	0.007	0.044
Nitrogen, Total	mg/L	105	1.02	0.97	38.00	0.58	3.62
Nitrogen, Total Kjeldahl	mg/L	93	0.89	0.90	2.52	0.54	0.31
pH	None	111	7.3	7.4	8.1	6.3	0.3
Phosphorus, orthophosphate	mg/L	105	0.009	0.010	0.062	0.001	0.010
Phosphorus, Total	mg/L	105	0.036	0.034	0.147	0.003	0.023
Salinity	ppth	77	0.33	0.30	11.40	0.10	2.04
Specific Conductivity	umho/cm	75	654	491	19200	218	3536
Temperature	deg C	111	24.7	24.2	31.2	17.0	3.6
Total Hardness	mg/L	0	None	None	None	None	None
Total Suspended Solids	mg/L	105	2.3	2.7	10.0	0.5	1.6
Turbidity	NTU	74	3.1	3.2	7.2	1.5	1.2
Zinc	mg/L	8	0.0080	0.0100	0.0100	0.0050	0.0024

SITE 30		05/10/00 - 09/21/15			Samples 75		
		Count	Geometric Mean	Median	Max	Min	Standard Deviation
Alkalinity	mg/L	67	122	124	137	79	10
Arsenic	mg/L	0	None	None	None	None	None
Cadmium	mg/L	8	0.0027	0.0050	0.0080	0.0008	0.0027
Chlorophyll-a (corrected)	ug/L	63	4.1	4.8	36.3	0.5	4.9
Copper	mg/L	7	0.0116	0.0100	0.0900	0.0017	0.0319
Dissolved Oxygen	% Saturation	75	8.6	6.0	91.3	1.9	28.4
Fecal Coliform	cfu/100mL	73	14	15	616	1	103
Lead	mg/L	7	0.0040	0.0050	0.1020	0.0011	0.0375
Nitrogen, Ammonia	mg/L	53	0.051	0.040	0.300	0.010	0.091
Nitrogen, nitrate + nitrite	mg/L	75	0.011	0.010	0.146	0.003	0.029
Nitrogen, Total	mg/L	74	0.29	0.38	2.04	0.02	0.44
Nitrogen, Total Kjeldahl	mg/L	66	0.36	0.36	2.02	0.10	0.42
pH	None	75	7.8	7.8	8.3	7.1	0.2
Phosphorus, orthophosphate	mg/L	67	0.005	0.005	0.035	0.001	0.008
Phosphorus, Total	mg/L	75	0.027	0.025	0.130	0.010	0.018
Salinity	ppth	52	29.52	31.65	37.90	15.60	5.37
Specific Conductivity	umho/cm	63	33341	47900	56789	281	13270
Temperature	deg C	75	25.5	26.1	31.1	17.7	3.6
Total Hardness	mg/L	0	None	None	None	None	None
Total Suspended Solids	mg/L	75	5.1	5.0	14.0	2.0	3.0
Turbidity	NTU	75	2.8	2.7	7.6	1.1	1.4
Zinc	mg/L	8	0.0182	0.0100	0.1210	0.0016	0.0470

Table 5-6
Monitoring Data Summary - Loxahatchee River Watershed
January 1999 - September 2015

SITE 51		05/11/00 - 09/22/15			Samples 75		
		Count	Geometric Mean	Median	Max	Min	Standard Deviation
Alkalinity	mg/L	66	120	123	163	70	15
Arsenic	mg/L	0	None	None	None	None	None
Cadmium	mg/L	8	0.0033	0.0050	0.0440	0.0008	0.0146
Chlorophyll-a (corrected)	ug/L	64	4.2	4.3	62.0	0.5	8.1
Copper	mg/L	7	0.0088	0.0050	0.0700	0.0014	0.0296
Dissolved Oxygen	% Saturation	75	9.3	6.6	97.0	3.9	29.0
Fecal Coliform	cfu/100mL	73	15	16	420	1	66
Lead	mg/L	7	0.0034	0.0050	0.0340	0.0011	0.0119
Nitrogen, Ammonia	mg/L	42	0.028	0.030	0.140	0.002	0.031
Nitrogen, nitrate + nitrite	mg/L	74	0.008	0.007	0.068	0.002	0.017
Nitrogen, Total	mg/L	71	0.36	0.35	2.29	0.10	0.48
Nitrogen, Total Kjeldahl	mg/L	65	0.37	0.41	2.23	0.10	0.48
pH	None	75	7.8	7.9	8.4	6.7	0.2
Phosphorus, orthophosphate	mg/L	71	0.006	0.006	0.177	0.001	0.022
Phosphorus, Total	mg/L	74	0.026	0.025	0.222	0.006	0.027
Salinity	ppth	56	23.29	30.50	37.50	0.60	9.39
Specific Conductivity	umho/cm	57	36575	47153	56271	1118	13580
Temperature	deg C	75	24.5	24.6	31.1	15.9	3.8
Total Hardness	mg/L	0	None	None	None	None	None
Total Suspended Solids	mg/L	74	5.3	5.3	43.5	0.8	6.9
Turbidity	NTU	74	3.1	3.2	7.2	1.5	1.2
Zinc	mg/L	8	0.0080	0.0100	0.0100	0.0050	0.0024

SITE 62 (Lox)		05/31/00 - 09/14/15			Samples 116		
		Count	Geometric Mean	Median	Max	Min	Standard Deviation
Alkalinity	mg/L	108	134	136	226	64	27
Arsenic	mg/L	0	None	None	None	None	None
Cadmium	mg/L	8	0.0027	0.0050	0.0080	0.0008	0.0027
Chlorophyll-a (corrected)	ug/L	99	5.5	5.9	61.9	0.5	6.7
Copper	mg/L	7	0.0071	0.0100	0.0500	0.0017	0.0184
Dissolved Oxygen	% Saturation	115	12.1	6.6	91.5	1.6	30.2
Fecal Coliform	cfu/100mL	116	58	64	2300	1	258
Lead	mg/L	7	0.0030	0.0050	0.0130	0.0011	0.0042
Nitrogen, Ammonia	mg/L	106	0.056	0.050	0.650	0.010	0.090
Nitrogen, nitrate + nitrite	mg/L	116	0.031	0.044	0.156	0.003	0.039
Nitrogen, Total	mg/L	116	0.83	0.78	3.93	0.24	0.63
Nitrogen, Total Kjeldahl	mg/L	110	0.76	0.71	3.93	0.20	0.64
pH	None	116	7.7	7.6	73.8	7.0	6.2
Phosphorus, orthophosphate	mg/L	114	0.019	0.023	0.121	0.002	0.016
Phosphorus, Total	mg/L	116	0.046	0.047	0.480	0.006	0.047
Salinity	ppth	101	6.85	9.50	35.70	0.20	10.03
Specific Conductivity	umho/cm	86	13554	18800	53860	439	16340
Temperature	deg C	116	24.6	24.6	32.8	16.1	3.9
Total Hardness	mg/L	0	None	None	None	None	None
Total Suspended Solids	mg/L	104	4.1	4.0	23.2	1.0	3.5
Turbidity	NTU	116	2.8	2.6	22.0	1.2	2.3
Zinc	mg/L	8	0.0124	0.0100	0.0480	0.0050	0.0185

Table 5-6
Monitoring Data Summary - Loxahatchee River Watershed
January 1999 - September 2015

SITE 72		05/11/00 - 09/22/15			Samples 123		
		Count	Geometric Mean	Median	Max	Min	Standard Deviation
Alkalinity	mg/L	114	124	129	178	28	20
Arsenic	mg/L	0	None	None	None	None	None
Cadmium	mg/L	8	0.0035	0.0050	0.0720	0.0008	0.0244
Chlorophyll-a (corrected)	ug/L	117	9.0	9.5	97.9	0.5	12.9
Copper	mg/L	7	0.0076	0.0100	0.0600	0.0010	0.0246
Dissolved Oxygen	% Saturation	123	9.9	6.4	128.1	2.3	29.5
Fecal Coliform	cfu/100mL	121	71	72	1280	1	203
Lead	mg/L	7	0.0044	0.0050	0.0640	0.0011	0.0229
Nitrogen, Ammonia	mg/L	111	0.084	0.090	3.000	0.015	0.287
Nitrogen, nitrate + nitrite	mg/L	122	0.017	0.022	0.172	0.000	0.030
Nitrogen, Total	mg/L	122	0.58	0.62	2.88	0.10	0.42
Nitrogen, Total Kjeldahl	mg/L	110	0.55	0.60	2.85	0.10	0.42
pH	None	123	7.8	7.8	8.2	7.2	0.2
Phosphorus, orthophosphate	mg/L	120	0.008	0.008	0.062	0.001	0.010
Phosphorus, Total	mg/L	122	0.036	0.036	0.097	0.006	0.016
Salinity	ppth	102	18.51	28.15	37.10	0.04	10.04
Specific Conductivity	umho/cm	87	27542	41966	55828	500	15760
Temperature	deg C	123	25.7	27.1	32.5	16.0	3.7
Total Hardness	mg/L	0	None	None	None	None	None
Total Suspended Solids	mg/L	121	4.8	4.5	22.4	0.5	4.2
Turbidity	NTU	122	2.9	3.1	8.7	0.3	1.3
Zinc	mg/L	8	0.0164	0.0100	0.2780	0.0050	0.0941

SITE C18G92		01/19/99 - 09/03/15			Samples 144		
		Count	Geometric Mean	Median	Max	Min	Standard Deviation
Alkalinity	mg/L	88	139	141	268	61	52
Arsenic	mg/L	16	0.0011	0.0009	0.0024	0.0005	0.0007
Cadmium	mg/L	33	0.0013	0.0008	0.0050	0.0002	0.0022
Chlorophyll-a (corrected)	ug/L	23	3.3	3.2	15.3	1.0	3.0
Copper	mg/L	33	0.0033	0.0027	0.0100	0.0003	0.0042
Dissolved Oxygen	% Saturation	125	5.9	6.0	10.0	2.7	1.7
Fecal Coliform	cfu/100mL	31	14	10	730	1	162
Lead	mg/L	32	0.0020	0.0013	0.0236	0.0003	0.0042
Nitrogen, Ammonia	mg/L	140	0.027	0.032	1.500	0.003	0.128
Nitrogen, nitrate + nitrite	mg/L	139	0.021	0.030	0.520	0.001	0.055
Nitrogen, Total	mg/L	142	0.80	0.89	1.65	0.00	0.21
Nitrogen, Total Kjeldahl	mg/L	129	0.86	0.87	1.33	0.22	0.16
pH	None	142	7.5	7.5	8.2	6.2	0.3
Phosphorus, orthophosphate	mg/L	143	0.003	0.002	0.500	0.001	0.043
Phosphorus, Total	mg/L	131	0.022	0.022	23.000	0.002	2.007
Salinity	ppth	0	None	None	None	None	None
Specific Conductivity	umho/cm	144	407	412	905	148	164
Temperature	deg C	144	26.5	26.6	3001.0	15.8	248.0
Total Hardness	mg/L	40	158	172	298	60	61
Total Suspended Solids	mg/L	140	1.2	1.5	153.0	0.0	12.8
Turbidity	NTU	143	1.6	1.6	4.9	0.4	0.8
Zinc	mg/L	33	0.0075	0.0100	0.1580	0.0027	0.0270

Table 5-6
Monitoring Data Summary - Loxahatchee River Watershed
January 1999 - September 2015

SITE C18S46		01/19/99 - 09/03/15			Samples 144		
		Count	Geometric Mean	Median	Max	Min	Standard Deviation
Alkalinity	mg/L	87	137	142	247	59	46
Arsenic	mg/L	16	0.0012	0.0011	0.0024	0.0005	0.0007
Cadmium	mg/L	33	0.0013	0.0008	0.0050	0.0002	0.0022
Chlorophyll-a (correEDed)	ug/L	22	3.6	4.0	10.9	1.0	2.8
Copper	mg/L	33	0.0033	0.0033	0.0100	0.0003	0.0042
Dissolved Oxygen	% Saturation	125	5.9	6.5	10.7	2.3	1.9
Fecal Coliform	cfu/100mL	32	94	100	1600	5	397
Lead	mg/L	33	0.0020	0.0013	0.0236	0.0003	0.0042
Nitrogen, Ammonia	mg/L	138	0.024	0.030	0.140	0.003	0.027
Nitrogen, nitrate + nitrite	mg/L	141	0.017	0.022	0.244	0.002	0.039
Nitrogen, Total	mg/L	142	0.76	0.84	1.27	0.00	0.19
Nitrogen, Total Kjeldahl	mg/L	128	0.81	0.82	1.22	0.26	0.15
pH	None	130	7.6	7.7	8.3	6.5	0.4
Phosphorus, orthophosphate	mg/L	141	0.003	0.002	0.082	0.001	0.013
Phosphorus, Total	mg/L	130	0.021	0.021	0.210	0.002	0.023
Salinity	ppth	0	None	None	None	None	None
Specific Conductivity	umho/cm	144	403	408	1588	151	226
Temperature	deg C	144	25.2	26.1	33.2	15.8	3.9
Total Hardness	mg/L	42	156	173	311	60	60
Total Suspended Solids	mg/L	127	1.6	1.5	6.0	1.0	0.9
Turbidity	NTU	47	1.3	1.2	8.7	0.3	1.4
Zinc	mg/L	33	0.0070	0.0080	0.0429	0.0018	0.0075

Samples = Total number of times samples were taken at a Site (may differ from the number of times a particular parameter was sampled)

Count = Number of times a particular parameter was sampled

Exceedances = Number of times a sample of a particular parameter exceeded the State of Florida Surface Water Quality Standards or Impaired Waters Rule

Table 5-6
Monitoring Data Summary - Lake Worth Lagoon North Watershed
January 1999 - September 2015

LWL-1		01/26/99 - 08/12/15			Samples 112		
		Count	Geometric Mean	Median	Max	Min	Standard Deviation
Alkalinity	mg/L	0	None	None	None	None	None
Arsenic	mg/L	7	0.0039	0.0025	0.0089	0.0023	0.0029
Cadmium	mg/L	7	0.0009	0.0006	0.0025	0.0002	0
DAlorophyll-a (corrected)	ug/L	85	5.3	5.0	19.7	1.8	3.6
Copper	mg/L	31	0.0029	0.0030	0.0048	0.0017	0.0008
Dissolved Oxygen	mg/L	99	6.9	6.8	10.1	4.1	1.1
Fecal Coliform	cfu/100mL	2	14	26	47	4	30
Lead	mg/L	7	0.0031	0.0025	0.0246	0.0013	0.0085
Nitrogen, Ammonia	mg/L	103	0.011	0.010	0.260	0.001	0.032
Nitrogen, nitrate + nitrite	mg/L	83	0.006	0.004	0.093	0.003	0.017
Nitrogen, Total	mg/L	80	0.36	0.37	0.96	0.00	0.18
Nitrogen, Total Kjeldahl	mg/L	96	0.36	0.35	0.92	0.09	0.17
pH	None	111	7.9	7.9	8.9	7.2	0.2
Phosphorus, orthophosphate	mg/L	96	0.007	0.008	0.066	0.001	0.010
Phosphorus, Total	mg/L	94	0.034	0.033	0.120	0.004	0.017
Salinity	ppth	76	30.62	31.55	36.10	21.10	3.26
Specific Conductivity	umho/cm	111	45299	47800	67154	4184	7145
Temperature	deg C	111	25.5	25.4	32.8	14.6	4.4
Total Hardness	mg/L	0	None	None	None	None	None
Total Suspended Solids	mg/L	78	4.1	4.0	33.0	1.5	6.4
Turbidity	NTU	109	1.9	2.0	6.0	0.5	0.8
Zinc	mg/L	6	0.0041	0.0042	0.0050	0.0034	0.0009

SITE 11		01/26/99 - 07/09/15			Samples 135		
		Count	Geometric Mean	Median	Max	Min	Standard Deviation
Alkalinity	mg/L	1	130	130	130	130	None
Arsenic	mg/L	11	0.0281	0.0071	2.5000	0.0028	1.1648
Cadmium	mg/L	24	0.0025	0.0029	0.2500	0.0001	0.0835
Chlorophyll-a (corrected)	ug/L	118	3.2	3.1	29.9	0.1	4.3
Copper	mg/L	22	0.0162	0.0099	6.2500	0.0017	1.5079
Dissolved Oxygen	mg/L	130	6.9	6.4	111.0	3.4	18.0
Fecal Coliform	DZu/100mL	39	16	15	170	2	38
Lead	mg/L	23	0.0090	0.0050	2.5000	0.0002	0.8568
Nitrogen, Ammonia	mg/L	129	0.045	0.042	0.250	0.009	0.044
Nitrogen, nitrate + nitrite	mg/L	108	0.054	0.050	1.200	0.007	0.180
Nitrogen, Total	mg/L	106	0.49	0.55	1.87	0.06	0.33
Nitrogen, Total Kjeldahl	mg/L	126	0.41	0.42	1.86	0.04	0.30
pH	None	133	7.8	7.9	8.2	6.6	0.3
Phosphorus, orthophosphate	mg/L	123	0.013	0.023	0.650	0.001	0.062
Phosphorus, Total	mg/L	129	0.037	0.040	1.110	0.003	0.105
Salinity	ppth	117	30.35	31.38	35.92	9.54	4.21
Specific Conductivity	umho/cm	133	42244	48763	54441	425	9050
Temperature	deg C	121	25.5	25.6	31.8	16.5	3.7
Total Hardness	mg/L	0	None	None	None	None	None
Total Suspended Solids	mg/L	15	16.7	25.0	59.0	1.0	16.3
Turbidity	NTU	130	1.6	1.9	12.4	0.1	1.5
Zinc	mg/L	19	0.0319	0.0100	5.0000	0.0034	1.8660

Table 5-6
Monitoring Data Summary - Lake Worth Lagoon North Watershed
January 1999 - September 2015

SITE 13		05/11/00 - 07/09/15			Samples 129		
		Count	Geometric Mean	Median	Max	Min	Standard Deviation
Alkalinity	mg/L	1	140	140	140	140	None
Arsenic	mg/L	13	0.0174	0.0034	2.5000	0.0026	1.0943
Cadmium	mg/L	20	0.0020	0.0008	0.2500	0.0001	0.0909
Chlorophyll-a (corrected)	ug/L	118	4.0	3.8	24.1	0.1	4.6
Copper	mg/L	18	0.0154	0.0056	12.9000	0.0017	3.1986
Dissolved Oxygen	mg/L	125	6.8	6.2	109.5	3.1	17.6
Fecal Coliform	cfu/100mL	36	53	51	3200	6	533
Lead	mg/L	19	0.0080	0.0050	2.5000	0.0002	0.9351
Nitrogen, Ammonia	mg/L	124	0.053	0.053	13.000	0.009	1.162
Nitrogen, nitrate + nitrite	mg/L	112	0.059	0.052	1.517	0.003	0.235
Nitrogen, Total	mg/L	113	0.55	0.59	2.14	0.06	0.38
Nitrogen, Total Kjeldahl	mg/L	126	0.48	0.51	1.83	0.04	0.32
pH	None	127	7.7	7.8	8.3	6.4	0.2
Phosphorus, orthophosphate	mg/L	120	0.016	0.023	0.650	0.001	0.064
Phosphorus, Total	mg/L	121	0.043	0.042	1.400	0.003	0.143
Salinity	ppth	116	24.82	29.72	38.30	0.63	7.66
Specific Conductivity	umho/cm	125	35497	46665	59740	531	12315
Temperature	deg C	125	25.6	26.2	31.9	16.0	3.7
Total Hardness	mg/L	0	None	None	None	None	None
Total Suspended Solids	mg/L	11	24.9	32.0	56.0	4.0	17.1
Turbidity	NTU	122	1.9	2.2	13.0	0.1	1.4
Zinc	mg/L	14	0.0478	0.0109	5.0000	0.0034	2.1186

LWL-4		04/05/04 - 08/12/15			Samples 109		
		Count	Geometric Mean	Median	Max	Min	Standard Deviation
Alkalinity	mg/L	0	None	None	None	None	None
Arsenic	mg/L	7	0.0041	0.0025	0.0090	0.0023	0.0033
Cadmium	mg/L	7	0.0004	0.0003	0.0017	0.0003	0
Chlorophyll-a (corrected)	ug/L	86	2.4	2.1	14.7	0.1	2.8
Copper	mg/L	30	0.0019	0.0018	0.0031	0.0009	0.0006
Dissolved Oxygen	mg/L	97	6.8	7.0	9.1	4.7	0.9
Fecal Coliform	cfu/100mL	0	None	None	None	None	None
Lead	mg/L	7	0.0025	0.0025	0.0157	0.0005	0.0052
Nitrogen, Ammonia	mg/L	101	0.009	0.009	0.390	0.003	0.040
Nitrogen, nitrate + nitrite	mg/L	90	0.004	0.003	0.050	0.003	0.008
Nitrogen, Total	mg/L	89	0.28	0.27	0.74	0.00	0.16
Nitrogen, Total Kjeldahl	mg/L	94	0.29	0.27	0.73	0.13	0.15
pH	None	108	8.0	8.0	8.9	7.5	0.2
Phosphorus, orthophosphate	mg/L	91	0.004	0.004	0.028	0.001	0.006
Phosphorus, Total	mg/L	89	0.023	0.021	0.064	0.011	0.011
Salinity	ppth	77	32.55	33.30	36.40	24.70	2.83
Specific Conductivity	umho/cm	108	48296	50467	68870	4594	6644
Temperature	deg C	108	25.1	25.1	32.2	15.2	4.3
Total Hardness	mg/L	0	None	None	None	None	None
Total Suspended Solids	mg/L	78	6.3	6.0	52.0	1.5	8.5
Turbidity	NTU	107	2.6	2.6	8.9	0.9	1.6
Zinc	mg/L	6	0.0051	0.0042	0.0197	0.0034	0.0065

Samples = Total number of times samples were taken at a Site (may differ from the number of times a particular parameter was sampled)

Count = Number of times a particular parameter was sampled

Exceedances = Number of times a sample of a particular parameter exceeded the State of Florida Surface Water Quality Standards or Impaired Waters Rule

Table 5-6

Monitoring Data Summary - Lake Worth Lagoon Central Watershed
January 1999 - September 2015

LWL-8		01/26/99 - 08/11/15			Samples 125		
		Count	Geometric Mean	Median	Max	Min	Standard Deviation
Alkalinity	mg/L	0	None	None	None	None	None
Arsenic	mg/L	6	0.0043	0.0045	0.0098	0.0023	0.0032
Cadmium	mg/L	18	0.0016	0.0035	0.0060	0.0003	0.0023
Chlorophyll-a (corrected)	ug/L	92	4.8	4.6	41.2	0.5	7.3
Copper	mg/L	38	0.0029	0.0017	0.0500	0.0012	0.0110
Dissolved Oxygen	mg/L	111	6.6	6.8	15.6	2.7	1.7
Fecal Coliform	cfu/100mL	12	21	16	700	2	196
Lead	mg/L	17	0.0041	0.0050	0.0530	0.0011	0.0121
Nitrogen, Ammonia	mg/L	112	0.026	0.028	3.046	0.001	0.301
Nitrogen, nitrate + nitrite	mg/L	104	0.026	0.042	0.430	0.003	0.062
Nitrogen, Total	mg/L	93	0.50	0.48	1.67	0.02	0.34
Nitrogen, Total Kjeldahl	mg/L	102	0.45	0.47	1.50	0.13	0.31
pH	None	123	7.7	7.9	8.3	1.9	0.6
Phosphorus, orthophosphate	mg/L	106	0.015	0.017	0.130	0.001	0.018
Phosphorus, Total	mg/L	104	0.047	0.045	0.270	0.012	0.035
Salinity	ppth	81	25.73	28.90	36.40	9.32	7.27
Specific Conductivity	umho/cm	125	36982	43835	63187	2762	11503
Temperature	deg C	124	24.9	24.9	34.1	12.1	4.4
Total Hardness	mg/L	0	None	None	None	None	None
Total Suspended Solids	mg/L	93	8.1	8.0	82.0	1.0	13.4
Turbidity	NTU	124	4.8	5.1	14.0	1.2	2.6
Zinc	mg/L	18	0.0088	0.0100	0.1200	0.0034	0.0271

SITE 18C		01/30/04 - 07/31/15			Samples 115		
		Count	Geometric Mean	Median	Max	Min	Standard Deviation
Alkalinity	mg/L	1	140	140	140	140	None
Arsenic	mg/L	12	0.0183	0.0032	2.5000	0.0023	1.1288
Cadmium	mg/L	11	0.0020	0.0006	0.2500	0.0001	0.1166
Chlorophyll-a (corrected)	ug/L	107	5.7	5.9	32.0	0.1	5.9
Copper	mg/L	11	0.0167	0.0031	4.8000	0.0017	1.5902
Dissolved Oxygen	mg/L	101	7.6	7.0	112.2	2.5	18.4
Fecal Coliform	cfu/100mL	25	26	20	300	2	75
Lead	mg/L	11	0.0179	0.0026	2.5000	0.0009	1.1655
Nitrogen, Ammonia	mg/L	101	0.059	0.065	0.310	0.009	0.057
Nitrogen, nitrate + nitrite	mg/L	100	0.104	0.101	1.677	0.006	0.253
Nitrogen, Total	mg/L	101	0.87	0.93	20.80	0.10	2.05
Nitrogen, Total Kjeldahl	mg/L	104	0.70	0.73	20.70	0.04	2.02
pH	None	104	7.8	7.8	8.4	7.1	0.2
Phosphorus, orthophosphate	mg/L	105	0.024	0.037	0.156	0.001	0.026
Phosphorus, Total	mg/L	100	0.065	0.072	1.280	0.001	0.133
Salinity	ppth	83	22.34	27.77	3388.00	4.74	369.42
Specific Conductivity	umho/cm	91	32251	44100	55098	537	14919
Temperature	deg C	102	26.5	27.9	33.9	14.1	4.5
Total Hardness	mg/L	0	None	None	None	None	None
Total Suspended Solids	mg/L	2	42.0	42.0	42.0	42.0	0.0
Turbidity	NTU	109	8.7	11.3	222.0	0.1	21.6
Zinc	mg/L	7	0.1302	0.0190	5.0000	0.0034	2.6672

Table 5-6

Monitoring Data Summary - Lake Worth Lagoon Central Watershed
January 1999 - September 2015

SITE 18D		07/28/05 - 07/31/15			Samples 101		
		Count	Geometric Mean	Median	Max	Min	Standard Deviation
Alkalinity	mg/L	0	None	None	None	None	None
Arsenic	mg/L	11	0.0210	0.0048	2.5000	0.0023	1.1660
Cadmium	mg/L	11	0.0025	0.0006	0.2500	0.0001	0.1165
Chlorophyll-a (corrected)	ug/L	94	5.5	5.8	41.1	0.1	8.9
Copper	mg/L	11	0.0147	0.0021	3.0000	0.0017	0.9669
Dissolved Oxygen	mg/L	87	8.6	7.6	132.8	4.9	23.3
Fecal Coliform	CRu/100mL	15	18	20	400	1	101
Lead	mg/L	11	0.0159	0.0026	2.5000	0.0002	1.1656
Nitrogen, Ammonia	mg/L	95	0.052	0.063	0.400	0.009	0.063
Nitrogen, nitrate + nitrite	mg/L	81	0.077	0.064	1.477	0.006	0.269
Nitrogen, Total	mg/L	78	0.67	0.75	3.87	0.04	0.52
Nitrogen, Total Kjeldahl	mg/L	92	0.52	0.56	3.86	0.04	0.46
pH	None	78	7.9	7.9	8.3	7.3	0.2
Phosphorus, orthophosphate	mg/L	91	0.014	0.025	0.168	0.001	0.032
Phosphorus, Total	mg/L	95	0.065	0.063	1.620	0.016	0.193
Salinity	ppth	76	26.35	30.37	352.20	9.36	38.13
SpeCRfic Conductivity	umho/cm	75	39070	46500	54782	3311	11787
Temperature	deg C	90	26.8	26.8	263.7	16.6	25.3
Total Hardness	mg/L	0	None	None	None	None	None
Total Suspended Solids	mg/L	0	None	None	None	None	None
Turbidity	NTU	98	4.5	6.5	72.2	0.1	7.6
Zinc	mg/L	6	0.1472	2.5036	5.0000	0.0034	2.7361

LWL-11		01/26/99 - 08/11/15			Samples 112		
		Count	Geometric Mean	Median	Max	Min	Standard Deviation
Alkalinity	mg/L	0	None	None	None	None	None
Arsenic	mg/L	6	0.0040	0.0025	0.0173	0.0023	0.0060
Cadmium	mg/L	6	0.0004	0.0004	0.0006	0.0003	0
Chlorophyll-a (corrected)	ug/L	88	6.0	5.6	59.2	1.0	7.8
Copper	mg/L	29	0.0019	0.0017	0.0160	0.0008	0.0035
Dissolved Oxygen	mg/L	98	6.8	7.0	13.2	2.0	1.7
Fecal Coliform	cfu/100mL	3	12	20	63	1	32
Lead	mg/L	6	0.0035	0.0025	0.0198	0.0024	0.0071
Nitrogen, Ammonia	mg/L	102	0.019	0.014	0.410	0.001	0.055
Nitrogen, nitrate + nitrite	mg/L	92	0.016	0.016	0.190	0.003	0.046
Nitrogen, Total	mg/L	86	0.46	0.50	1.54	0.00	0.30
Nitrogen, Total Kjeldahl	mg/L	92	0.47	0.49	1.40	0.05	0.27
pH	None	111	7.8	7.9	8.8	1.8	0.6
Phosphorus, orthophosphate	mg/L	96	0.010	0.012	0.086	0.001	0.014
Phosphorus, Total	mg/L	92	0.047	0.047	0.180	0.018	0.024
Salinity	ppth	78	27.69	29.95	36.40	12.50	5.96
Specific Conductivity	umho/cm	112	38955	44752	65170	3117	10514
Temperature	deg C	112	25.4	24.8	233.0	13.0	20.1
Total Hardness	mg/L	0	None	None	None	None	None
Total Suspended Solids	mg/L	78	8.3	8.5	37.0	1.0	7.0
Turbidity	NTU	112	5.0	5.0	16.0	0.8	3.0
Zinc	mg/L	6	0.0041	0.0042	0.0050	0.0034	0.0009

Table 5-6

Monitoring Data Summary - Lake Worth Lagoon Central Watershed
January 1999 - September 2015

LWL-13		04/05/04 - 08/10/15			Samples 112		
		Count	Geometric Mean	Median	Max	Min	Standard Deviation
Alkalinity	mg/L	0	None	None	None	None	None
Arsenic	mg/L	7	0.0041	0.0025	0.0095	0.0023	0.0033
Cadmium	mg/L	7	0.0004	0.0003	0.0006	0.0003	0
Chlorophyll-a (corrected)	ug/L	90	4.8	4.2	39.5	1.6	5.8
Copper	mg/L	31	0.0017	0.0017	0.0039	0.0009	0.0007
Dissolved Oxygen	mg/L	100	7.0	7.0	17.0	4.0	1.9
Fecal Coliform	CZu/100mL	3	100	100	100	100	0
Lead	mg/L	7	0.0028	0.0025	0.0229	0.0005	0.0078
Nitrogen, Ammonia	mg/L	107	0.014	0.012	0.500	0.002	0.064
Nitrogen, nitrate + nitrite	mg/L	96	0.011	0.008	0.200	0.003	0.046
Nitrogen, Total	mg/L	88	0.38	0.39	1.42	0.00	0.29
Nitrogen, Total Kjeldahl	mg/L	95	0.39	0.35	1.40	0.16	0.26
pH	None	111	8.0	8.0	8.6	7.0	0.2
Phosphorus, orthophosphate	mg/L	102	0.007	0.008	0.067	0.001	0.013
Phosphorus, Total	mg/L	94	0.035	0.032	0.170	0.013	0.023
Salinity	ppth	80	29.26	31.80	37.20	14.40	5.68
Specific Conductivity	umho/cm	112	43585	47217	385822	3532	33663
Temperature	deg C	112	25.1	25.7	33.3	11.7	4.4
Total Hardness	mg/L	0	None	None	None	None	None
Total Suspended Solids	mg/L	79	5.8	6.0	28.0	1.0	5.9
Turbidity	NTU	102	3.0	3.0	12.0	0.7	1.9
Zinc	mg/L	6	0.0041	0.0042	0.0050	0.0034	0.0009

Start =
End =
Samples = Total number of times samples were taken at a Site (may differ from the number of times a particular parameter was sampled)
Count =
Exceedances =

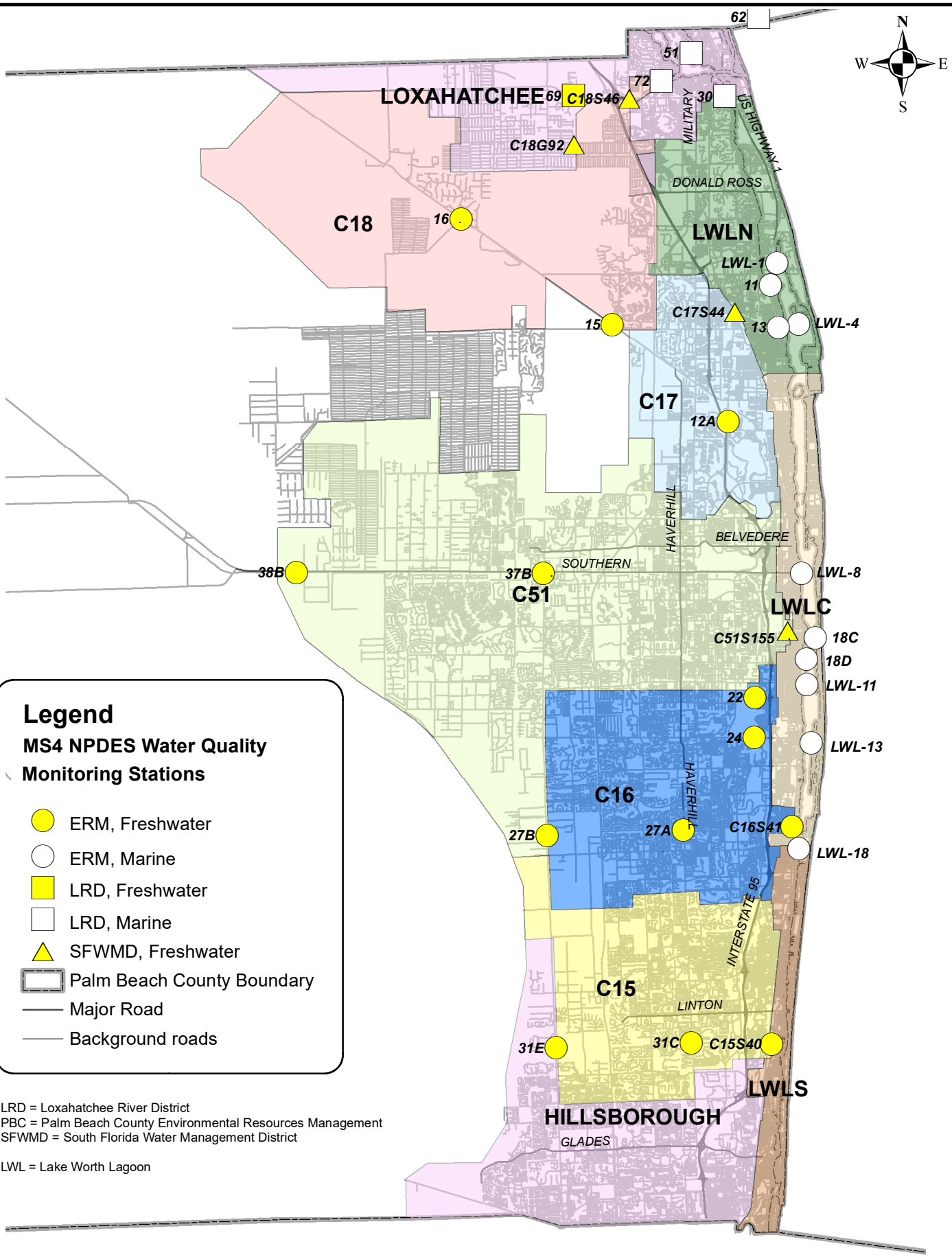
Table 5-6

Monitoring Data Summary - Lake Worth Lagoon South Watershed
January 1999 - September 2015

LWL-18		05/11/00 - 08/10/15			Samples 119		
		Count	Geometric Mean	Median	Max	Min	Standard Deviation
Alkalinity	mg/L	0	None	None	None	None	None
Arsenic	mg/L	7	0.0033	0.0025	0.0087	0.0023	0.0024
Cadmium	mg/L	15	0.0020	0.0008	0.0050	0.0002	0.0022
Chlorophyll-a (corrected)	ug/L	92	8.0	4.6	58.1	1.8	9.2
Copper	mg/L	37	0.0053	0.0033	0.0500	0.0017	0.0080
Dissolved Oxygen	mg/L	107	6.6	6.4	15.4	0.8	1.9
Fecal Coliform	cfu/100mL	8	40	17	180	4	59
Lead	mg/L	14	0.0056	0.0025	0.0250	0.0008	0.0070
Nitrogen, Ammonia	mg/L	111	0.038	0.024	0.410	0.003	0.050
Nitrogen, nitrate + nitrite	mg/L	103	0.038	0.022	0.210	-0.005	0.044
Nitrogen, Total	mg/L	94	0.53	0.44	1.51	0.00	0.29
Nitrogen, Total Kjeldahl	mg/L	101	0.88	0.44	39.00	0.07	3.84
pH	None	118	7.8	7.8	8.5	6.5	0.2
Phosphorus, orthophosphate	mg/L	109	0.025	0.015	0.160	0.001	0.027
Phosphorus, Total	mg/L	103	0.052	0.042	0.230	0.003	0.036
Salinity	ppth	80	28.57	30.85	36.70	9.37	6.74
Specific Conductivity	umho/cm	119	43024	46270	64472	3790	10538
Temperature	deg C	118	26.2	25.9	33.6	16.3	4.1
Total Hardness	mg/L	0	None	None	None	None	None
Total Suspended Solids	mg/L	87	11.1	8.0	56.0	1.0	9.6
Turbidity	NTU	108	4.1	3.8	17.0	0.7	2.2
Zinc	mg/L	14	0.0204	0.0100	0.1160	0.0019	0.0297

TABLE 5-7
Summary of Geometric Mean Values
January 1999 - September 2015

Watershed	Site	Total Nitrogen mg/L	Total Phosphorus mg/L	Chlorophyll-a ug/L
C-15	31E	1.61	0.251	23.65
	31C	1.28	0.123	16.97
	C15S40	1.02	0.110	12.52
C-16	22	1.05	0.060	11.90
	24	1.00	0.064	13.15
	27B	1.52	0.162	15.69
	27A	1.21	0.130	15.56
	C16S41	1.06	0.073	8.20
C-17	12A	1.56	0.051	13.84
	C17S44	0.83	0.041	9.16
C-18	16	1.00	0.035	3.95
	15	0.96	0.019	2.27
C-51 W	38B	1.70	0.099	6.55
C-51 E	37B	1.27	0.074	4.24
	C51S155	1.13	0.064	1.67
Loxahatchee River	69	1.02	0.036	3.03
	62	0.83	0.046	5.52
	51	0.36	0.026	4.21
	72	0.58	0.036	9.02
	30	0.29	0.027	4.13
	C18G92	0.80	0.022	3.25
	C18S46	0.76	0.021	3.63
Lake Worth Lagoon North	LWL-1	0.36	0.034	5.34
	11	0.49	0.037	3.17
	13	0.55	0.043	4.02
	LWL-4	0.28	0.023	2.39
Lake Worth Lagoon Central Watershed	LWL-8	0.50	0.047	4.81
	18C	0.87	0.065	5.69
	18D	0.67	0.065	5.49
	LWL-11	0.46	0.047	5.97
	LWL-13	0.38	0.035	4.85
Lagoon South	LWL-18	0.53	0.052	7.99



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P.A. No.: B4050.90

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Palm Beach County Watershed Boundaries and Water Quality Monitoring Stations

Figure 5-1

Figure 5-2
Total Nitrogen
C-15 Watershed

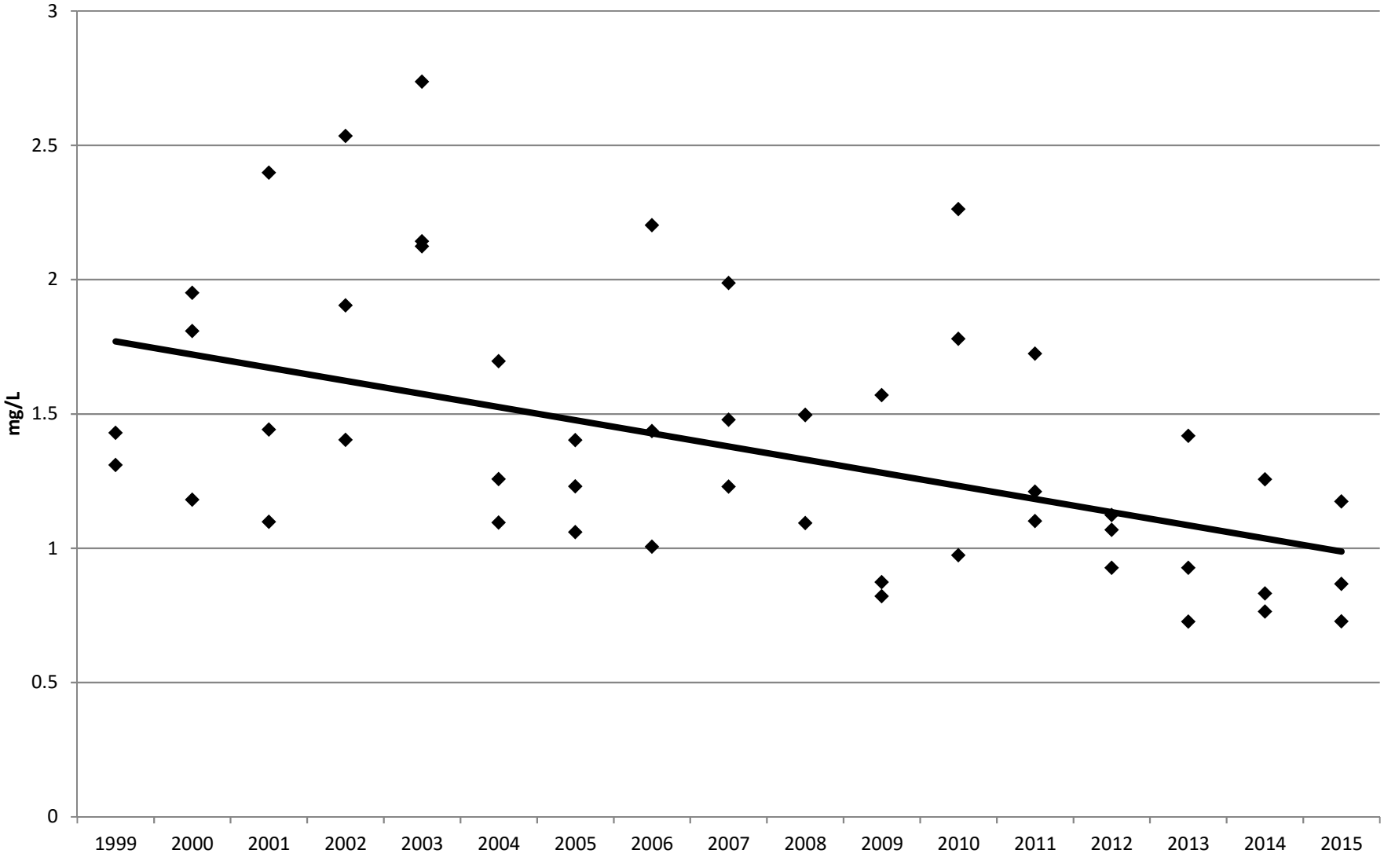

Figure 5-2
Total Nitrogen
C-16 Watershed

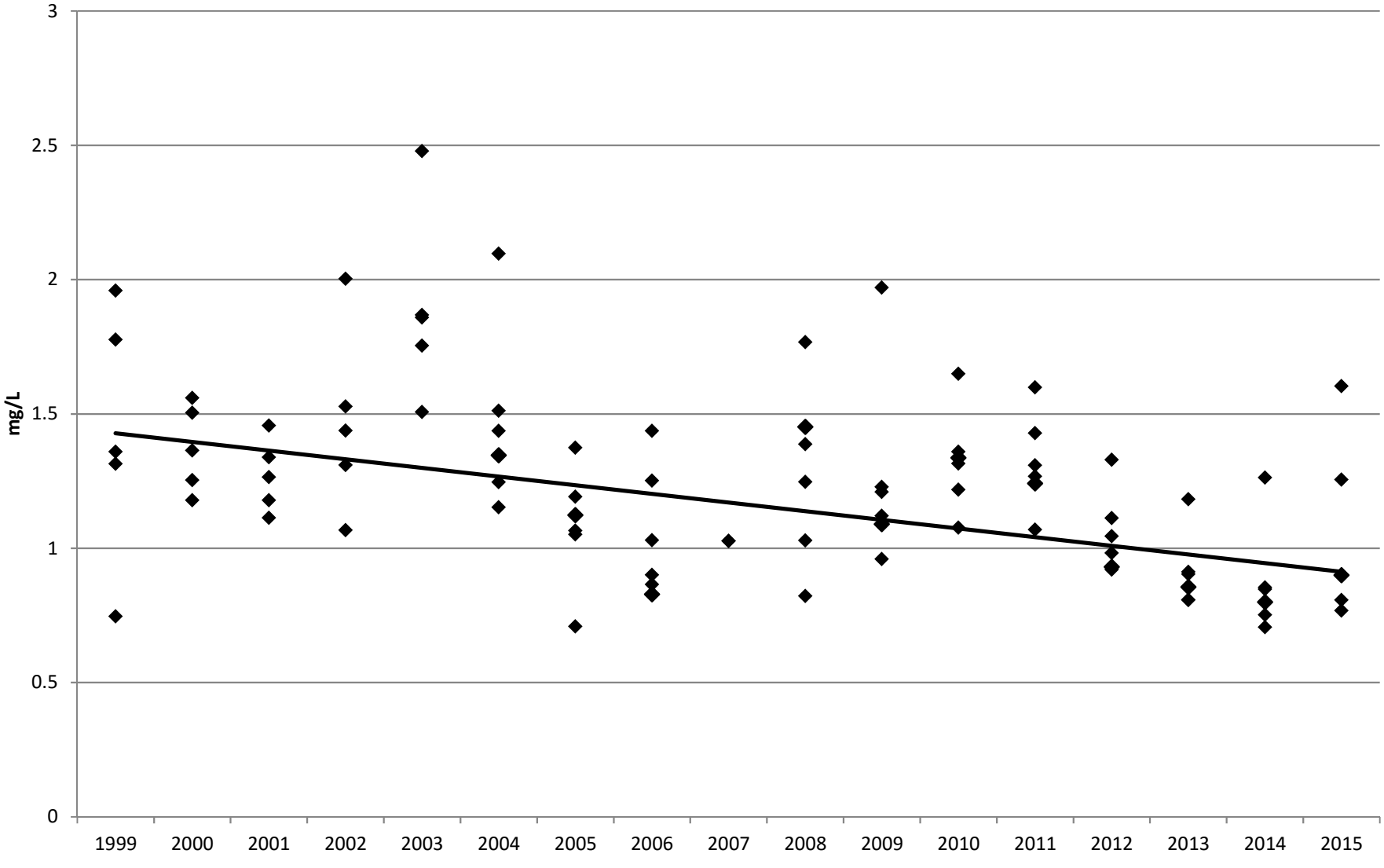

Figure 5-2
Total Nitrogen
C-17 Watershed

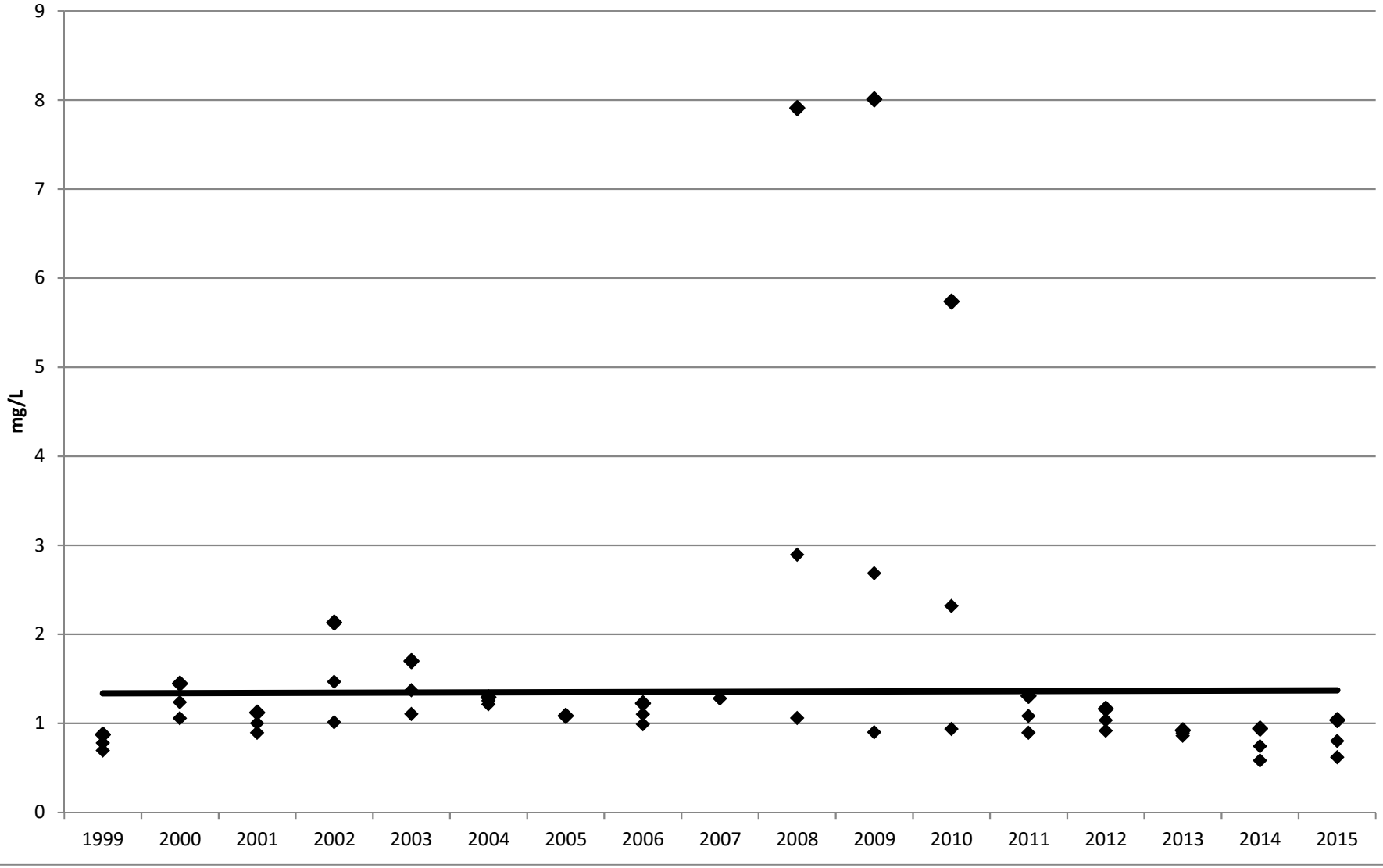

Figure 5-2
Total Nitrogen
C-18 Watershed

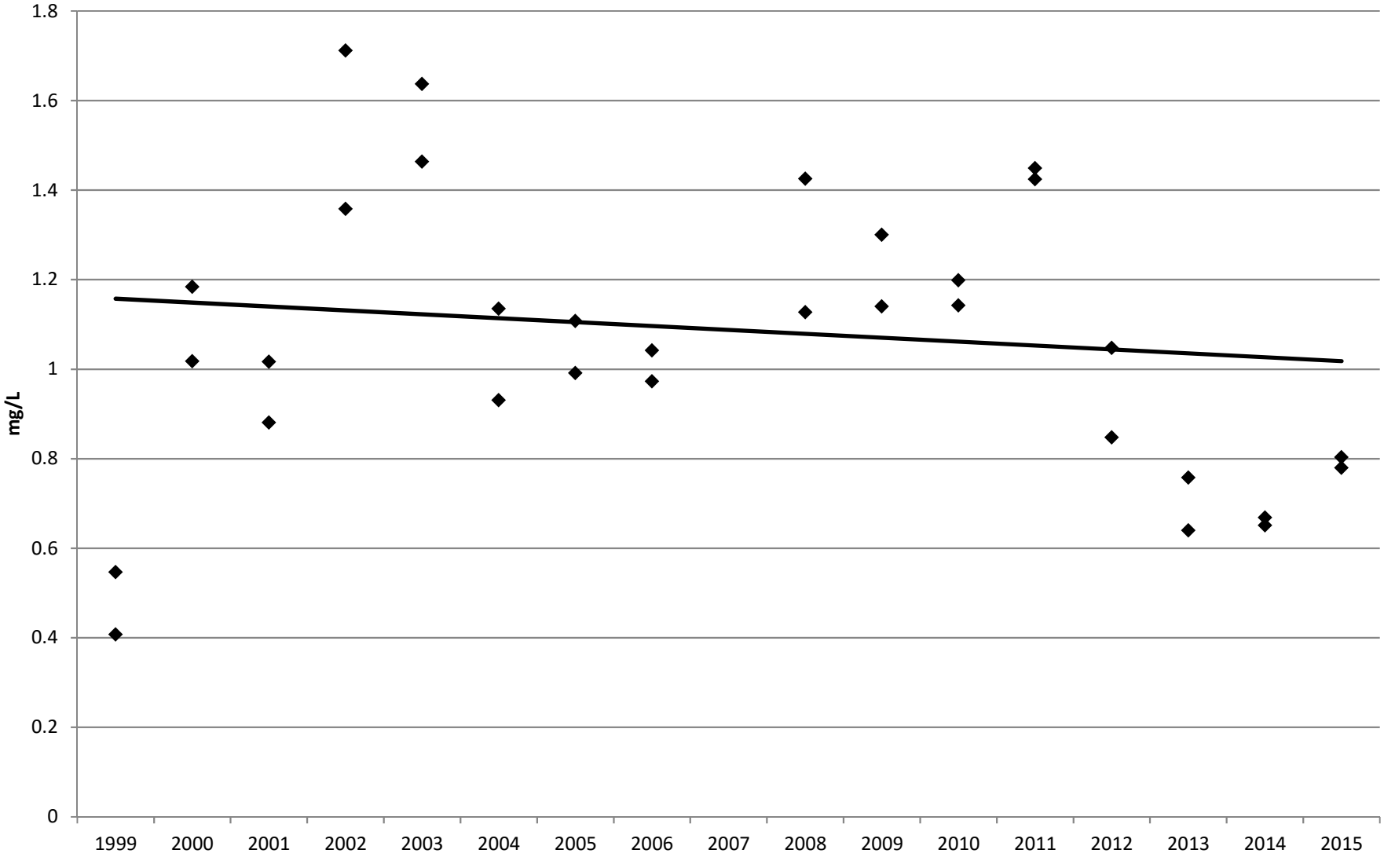

Figure 5-2
Total Nitrogen
C-51 E Watershed

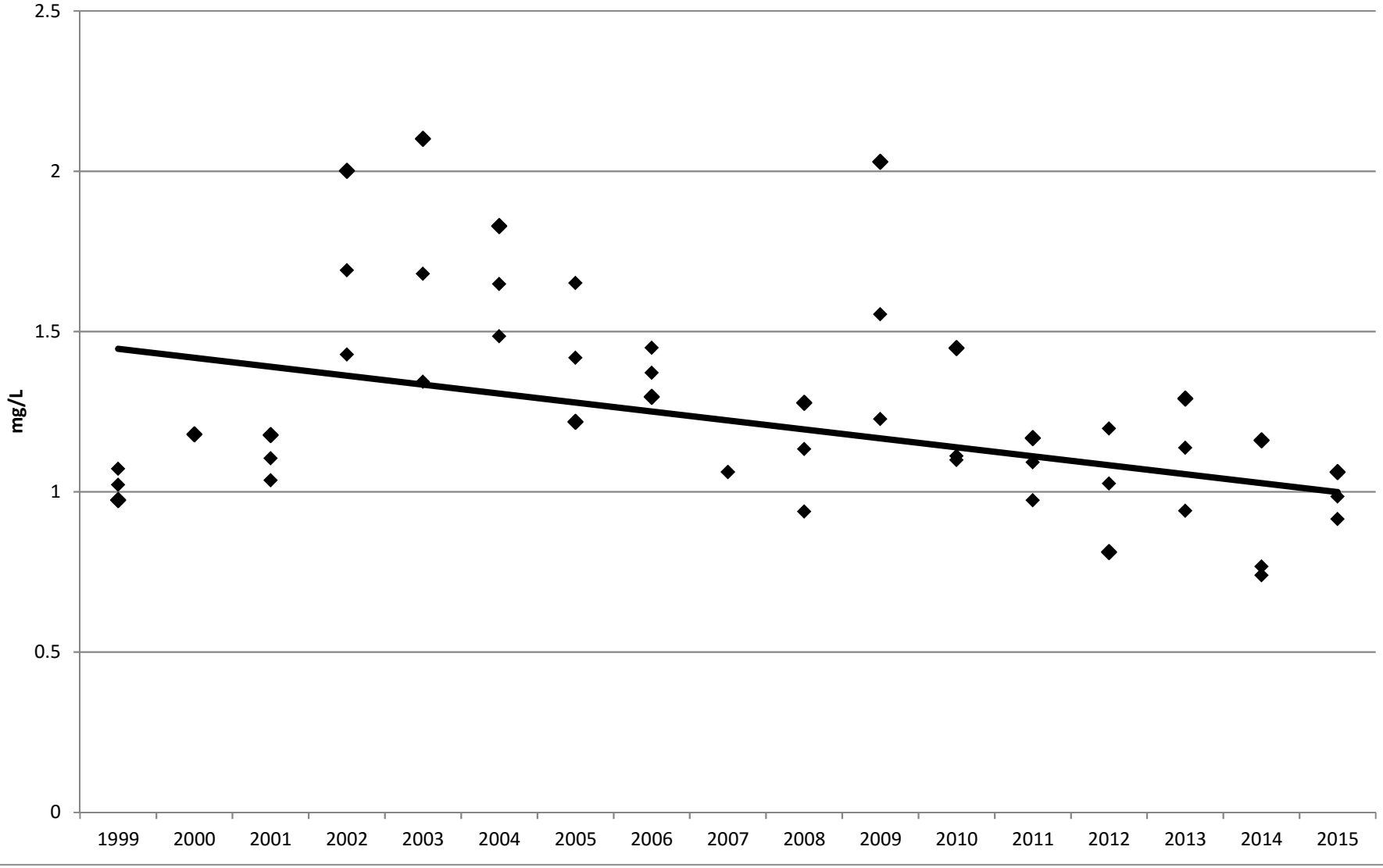

Figure 5-2
Total Nitrogen
C-51 W Watershed

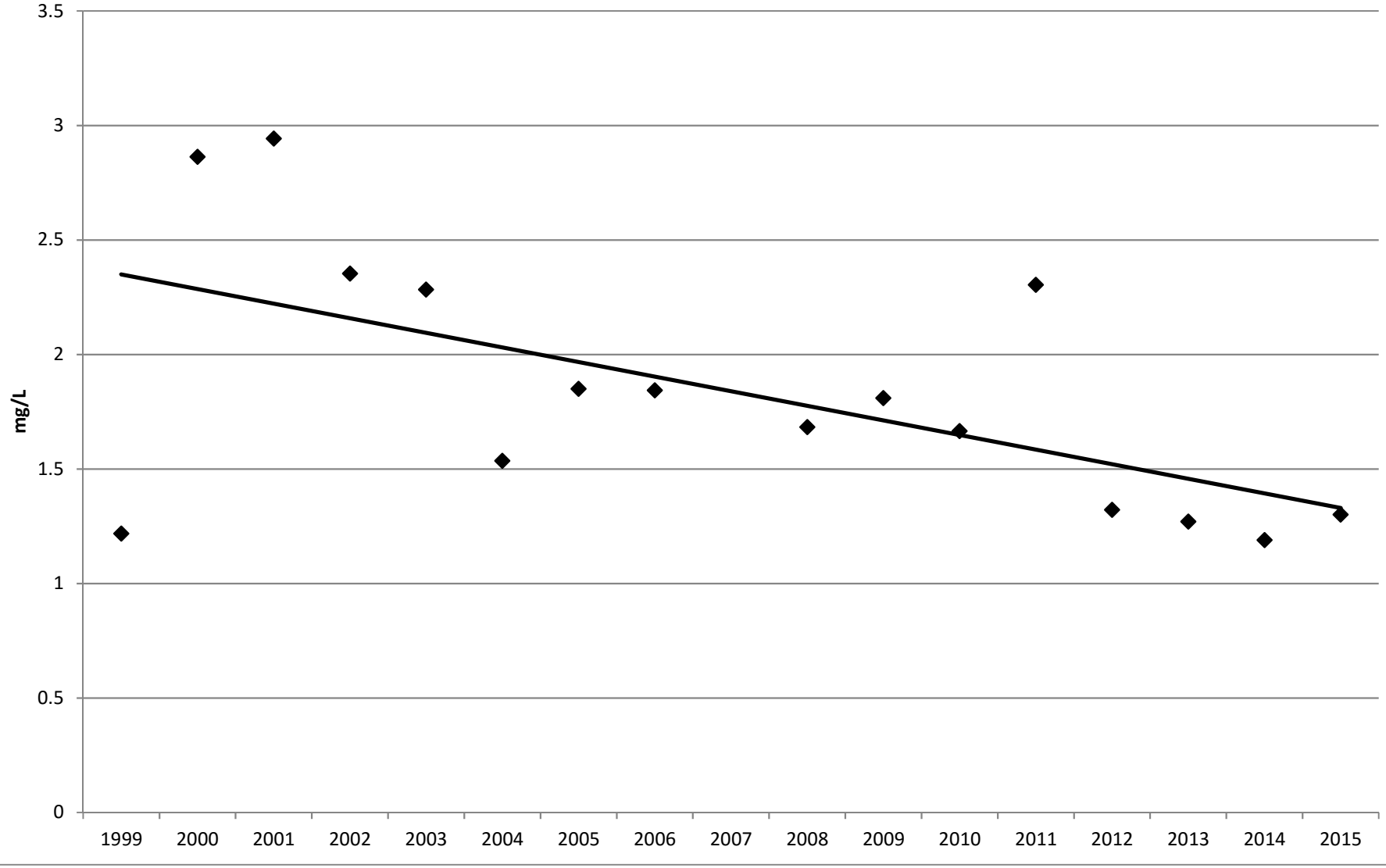

Figure 5-2
Total Nitrogen
Loxahatchee

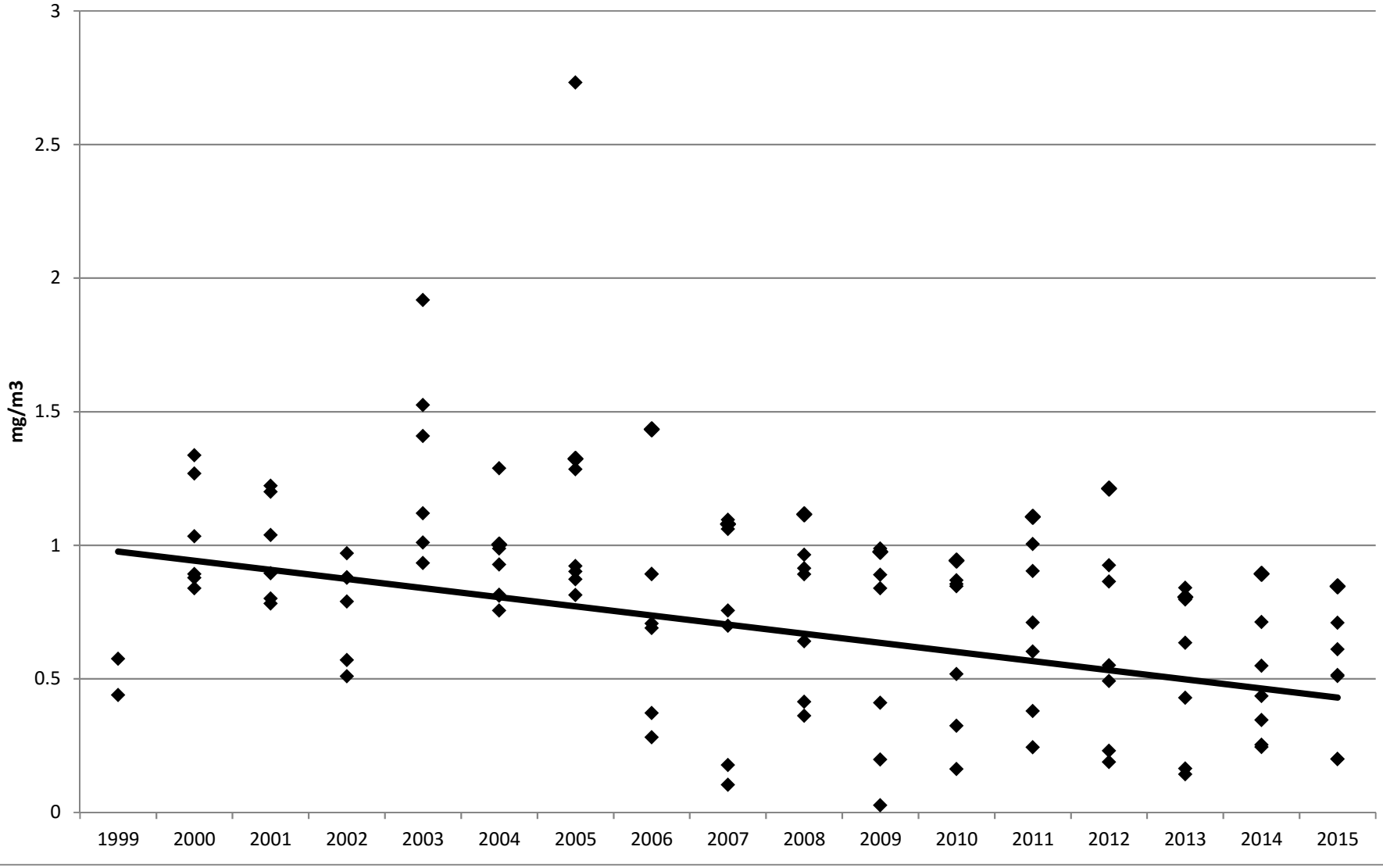

Figure 5-2
Total Nitrogen
Lake Worth Lagoon-N

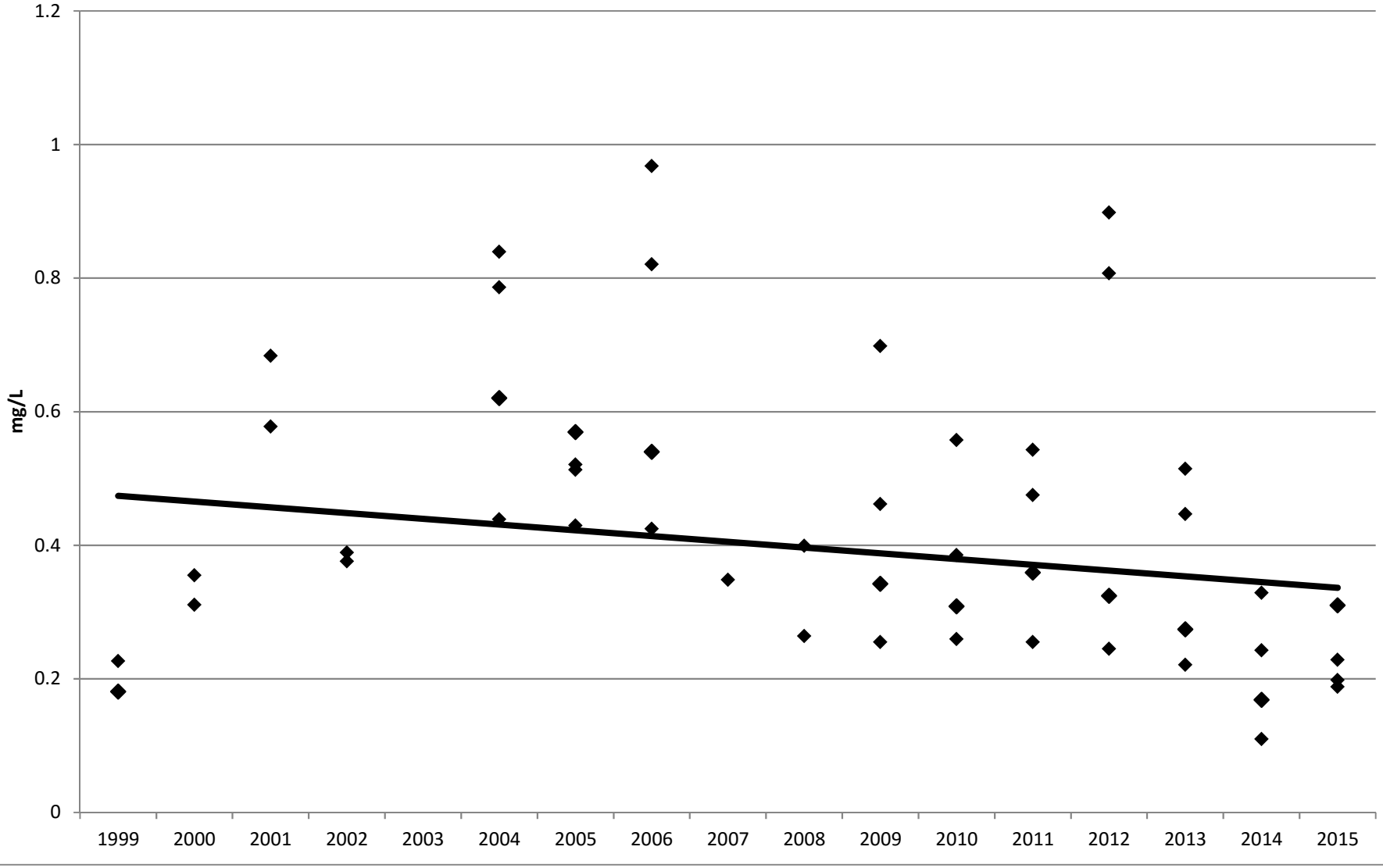

Figure 5-2
Total Nitrogen
Lake Worth Lagoon-C

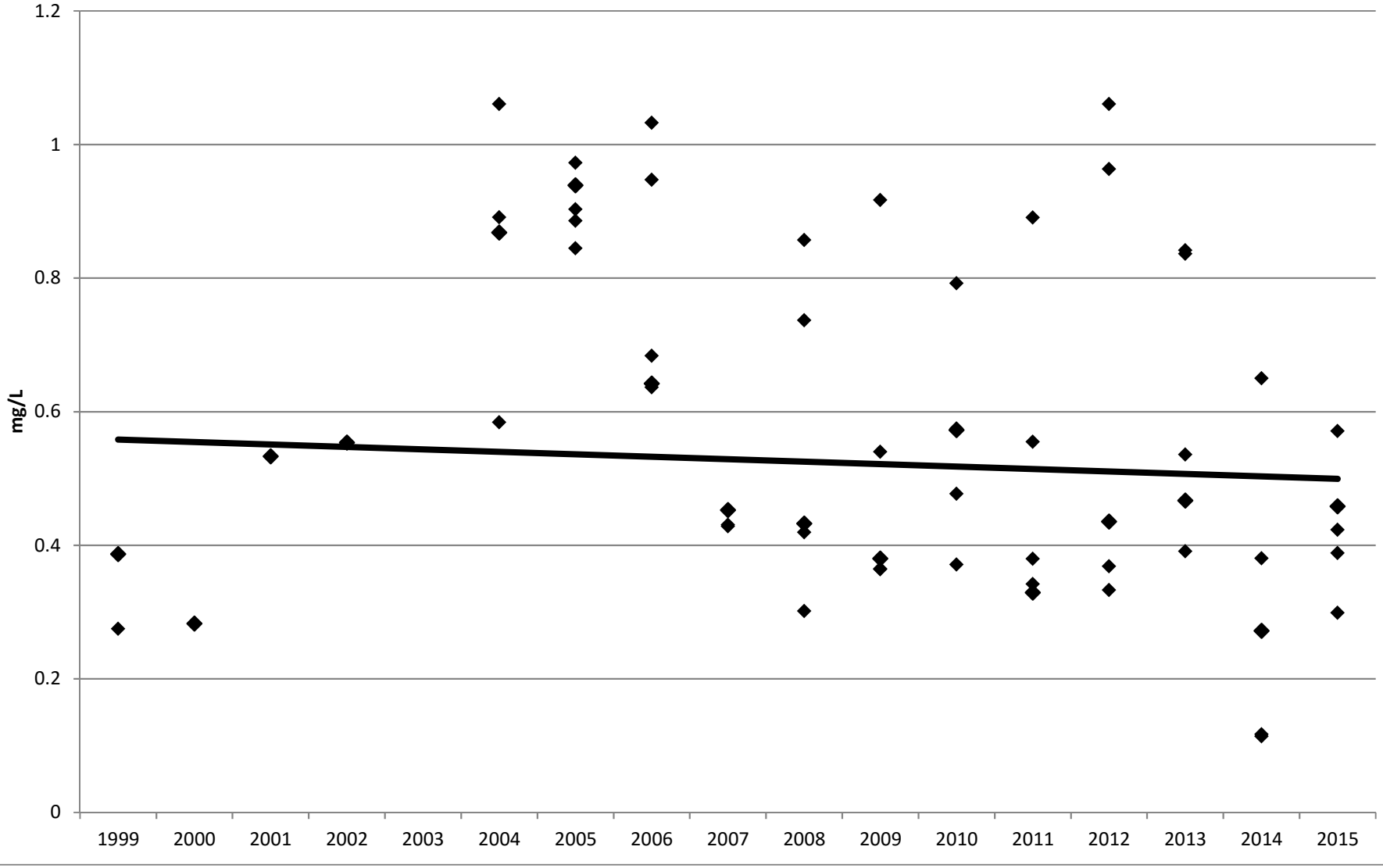

Figure 5-2
Total Nitrogen
Lake Worth Lagoon-S

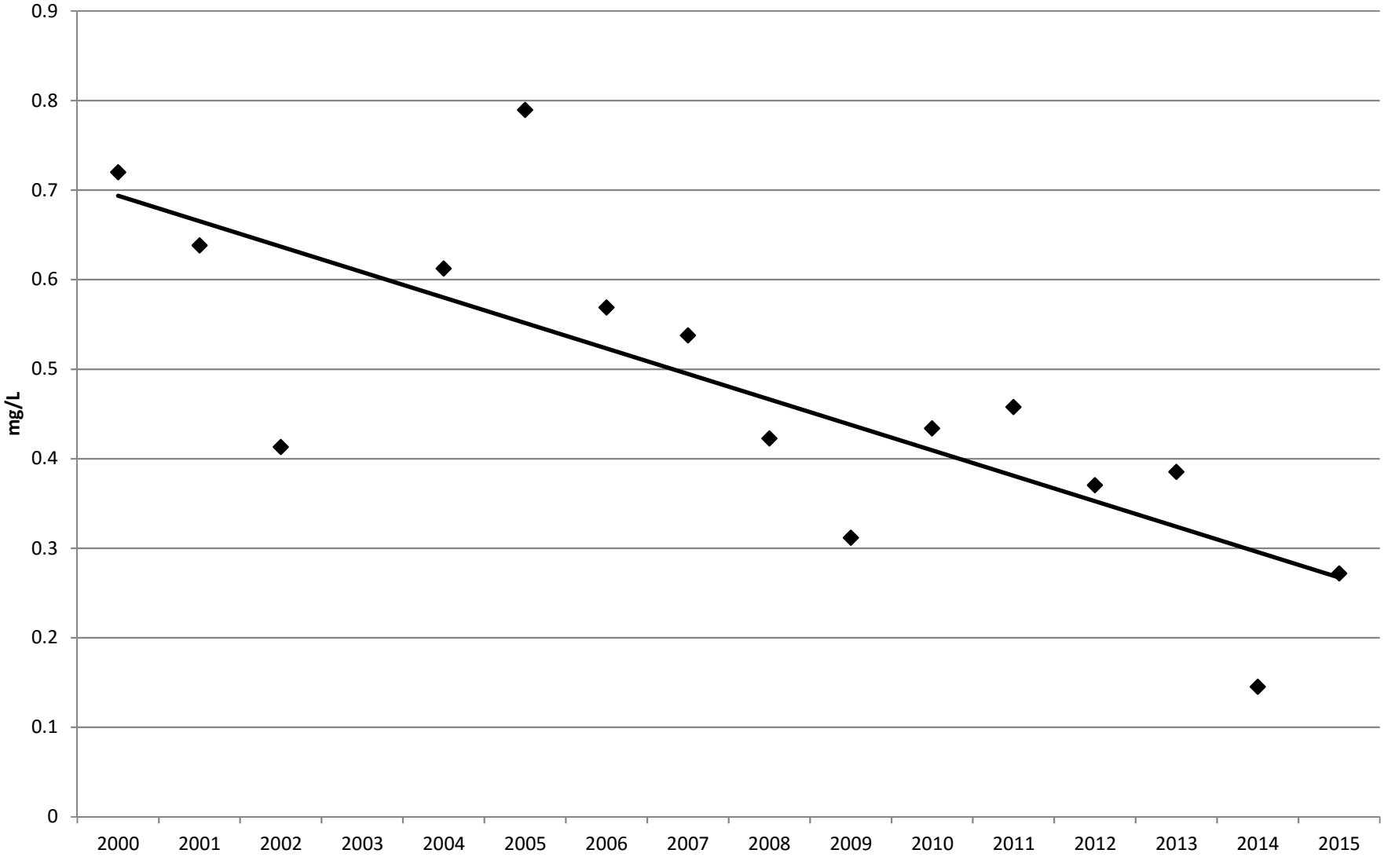

Figure 5-3
Total Phosphorus
C-15 Watershed

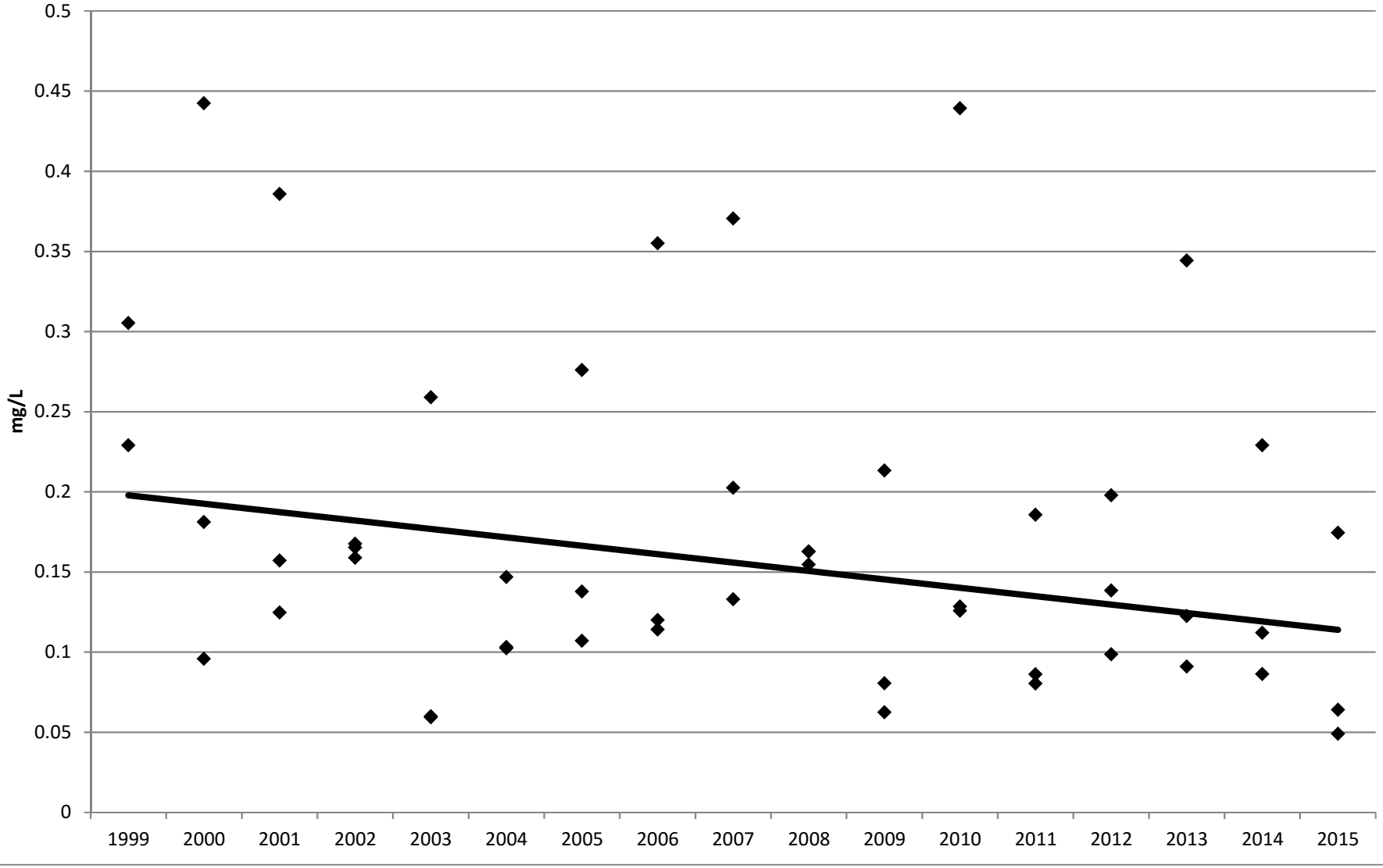

Figure 5-3
Total Phosphorous
C-16 Watershed

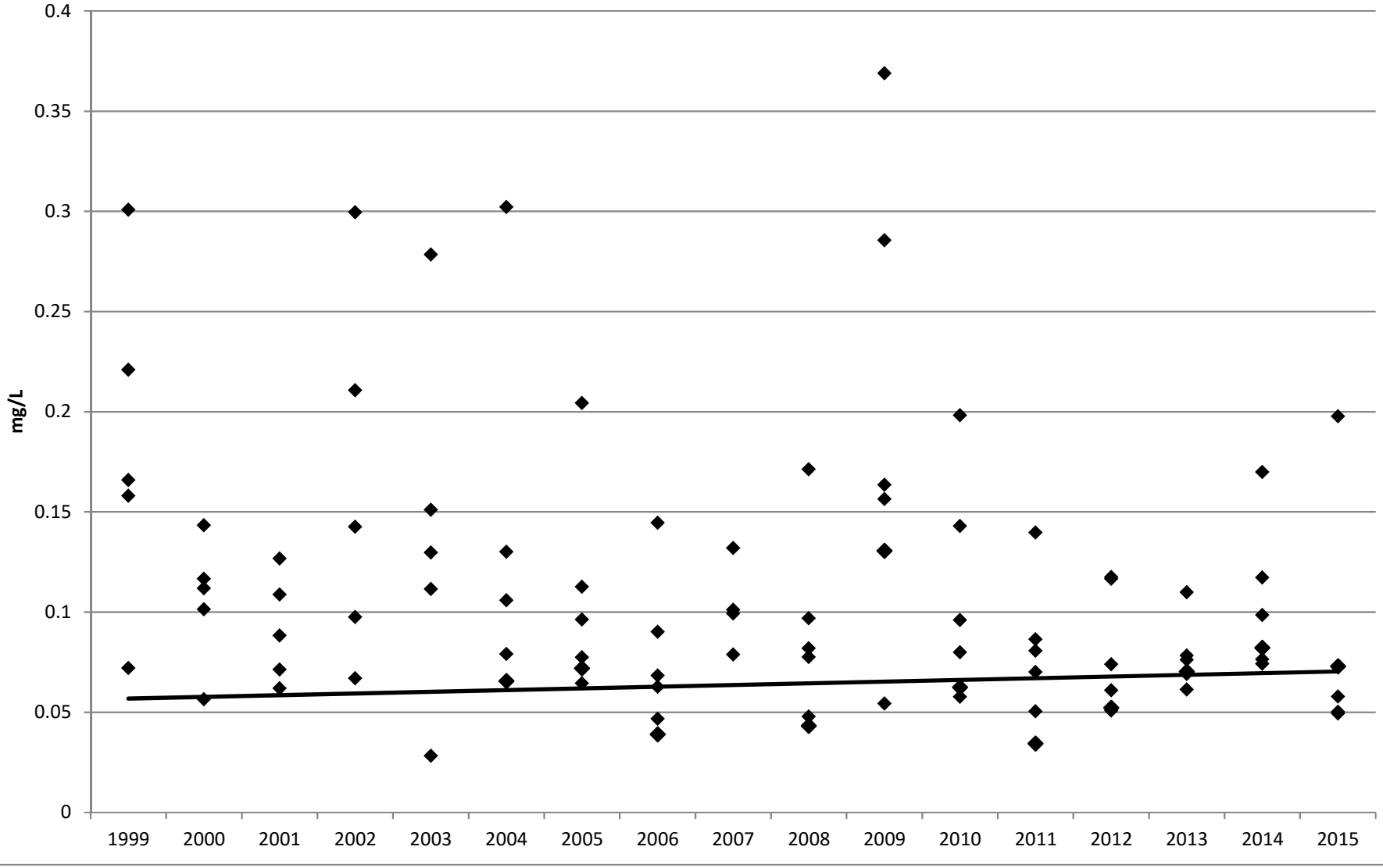

Figure 5-3
Total Phosphorus
C-17 Watershed

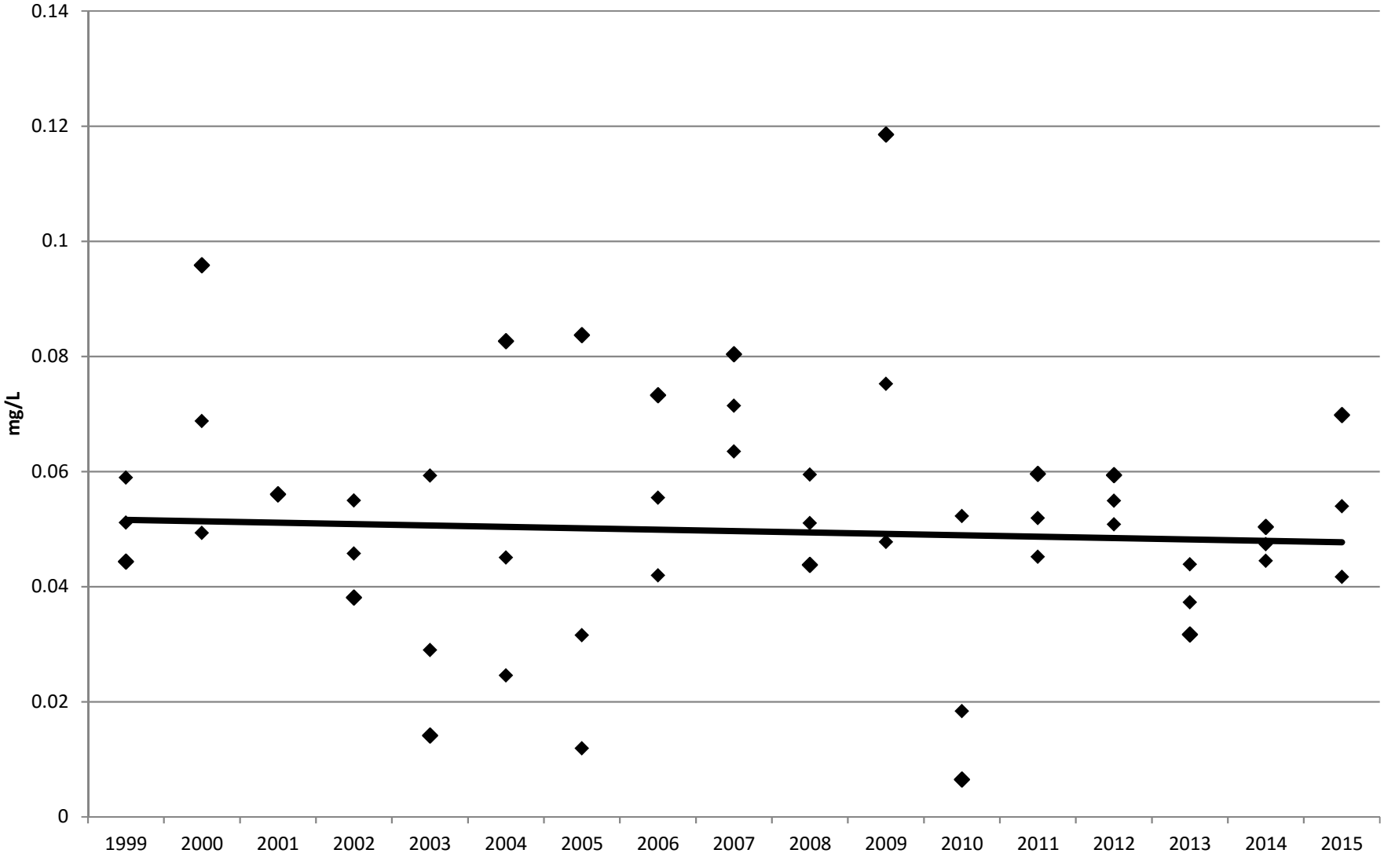

Figure 5-3
Total Phosphorus
C-18 Watershed

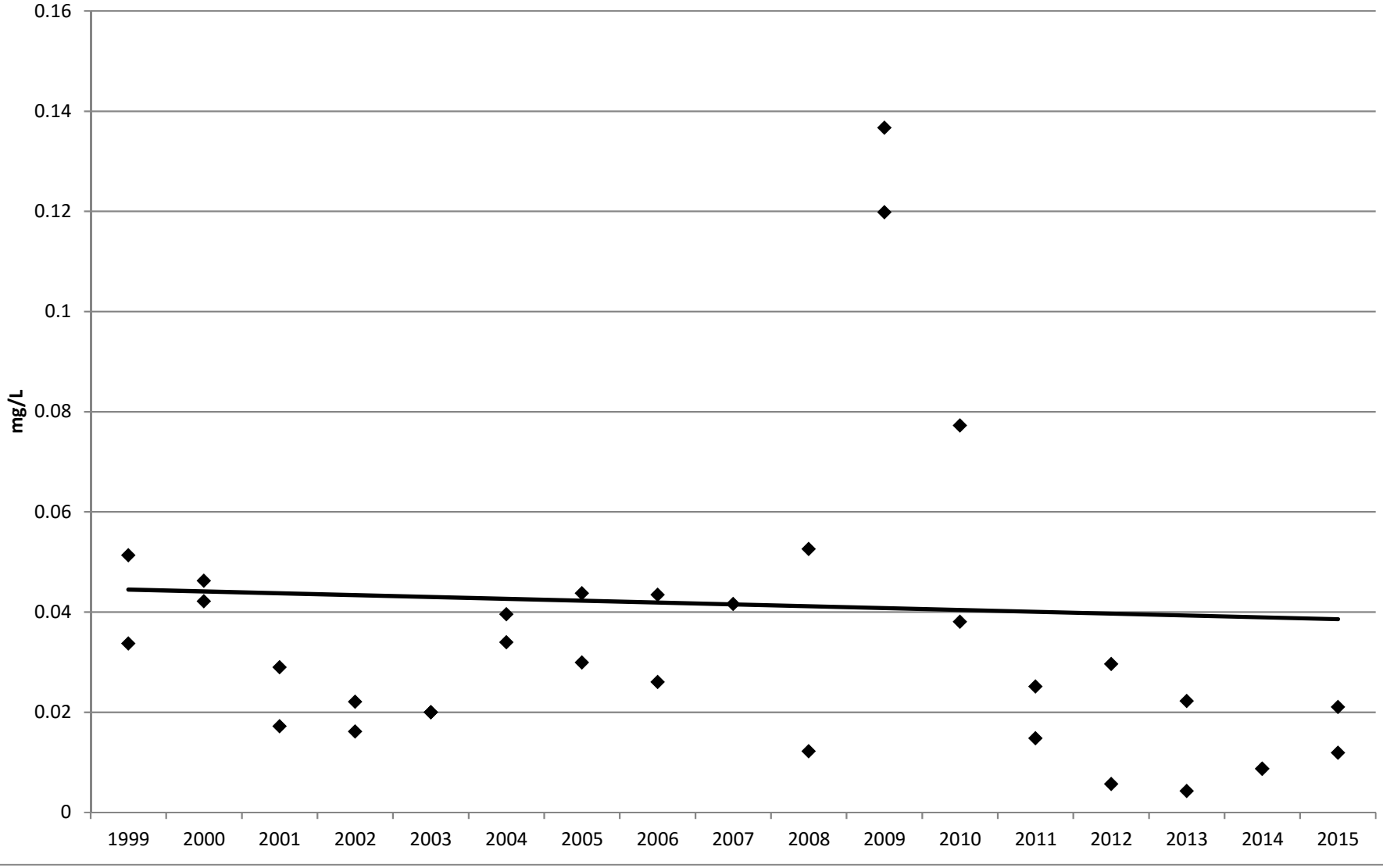

Figure 5-3
Total Phosphorus
C-51 E Watershed

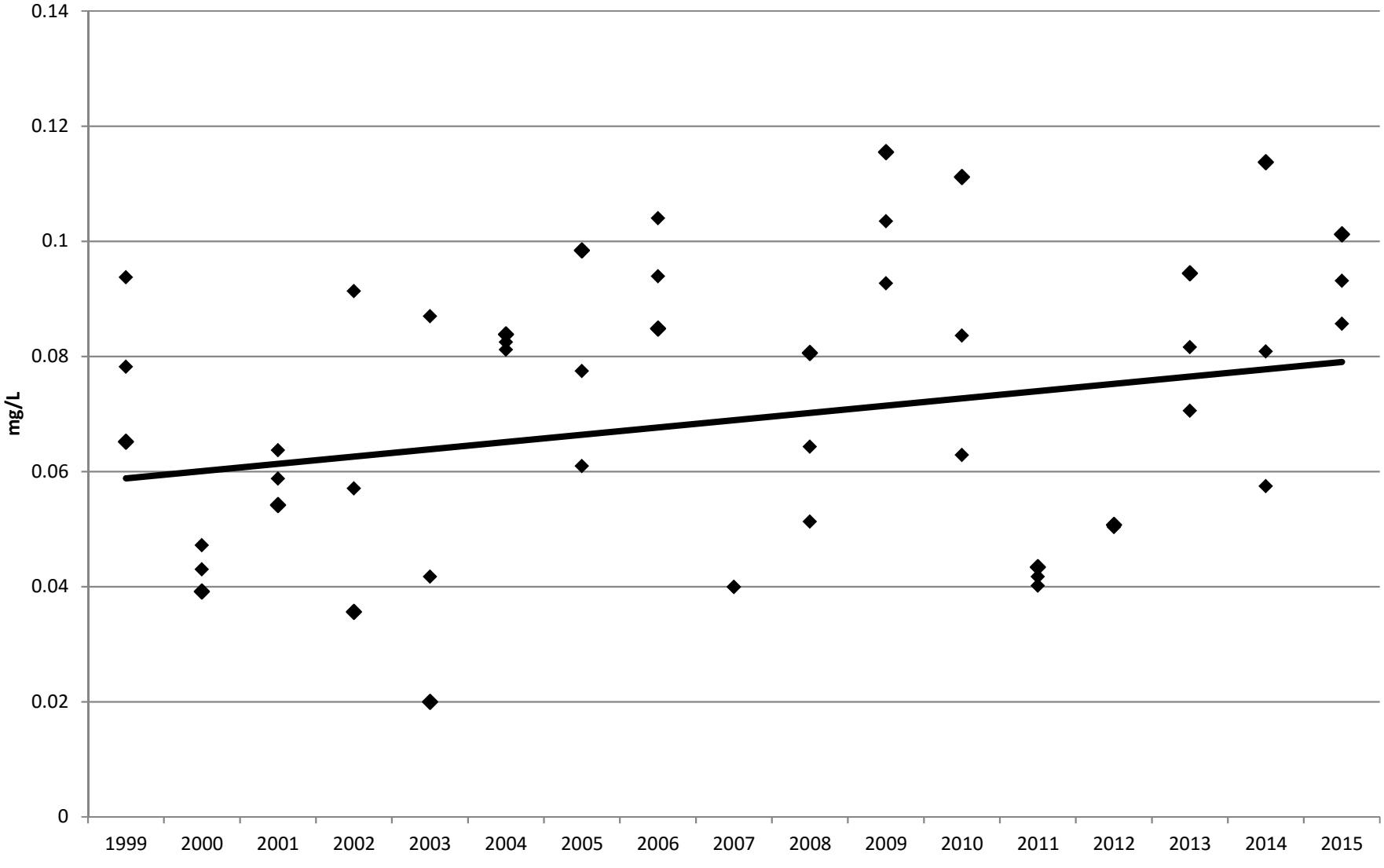

Figure 5-3
Total Phosphorus
C-51 W Watershed

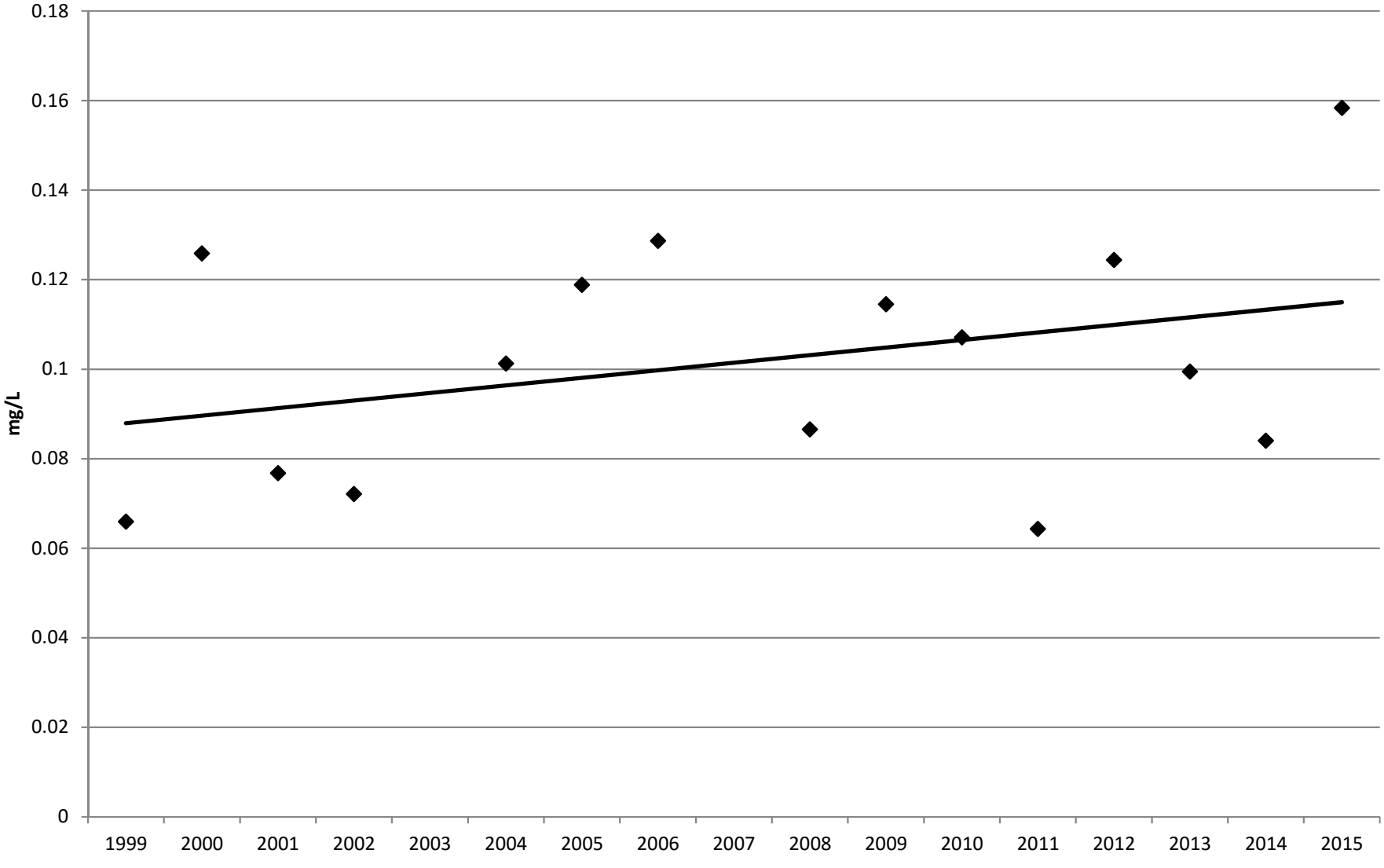

Figure 5-3
Total Phosphorus
Loxahatchee

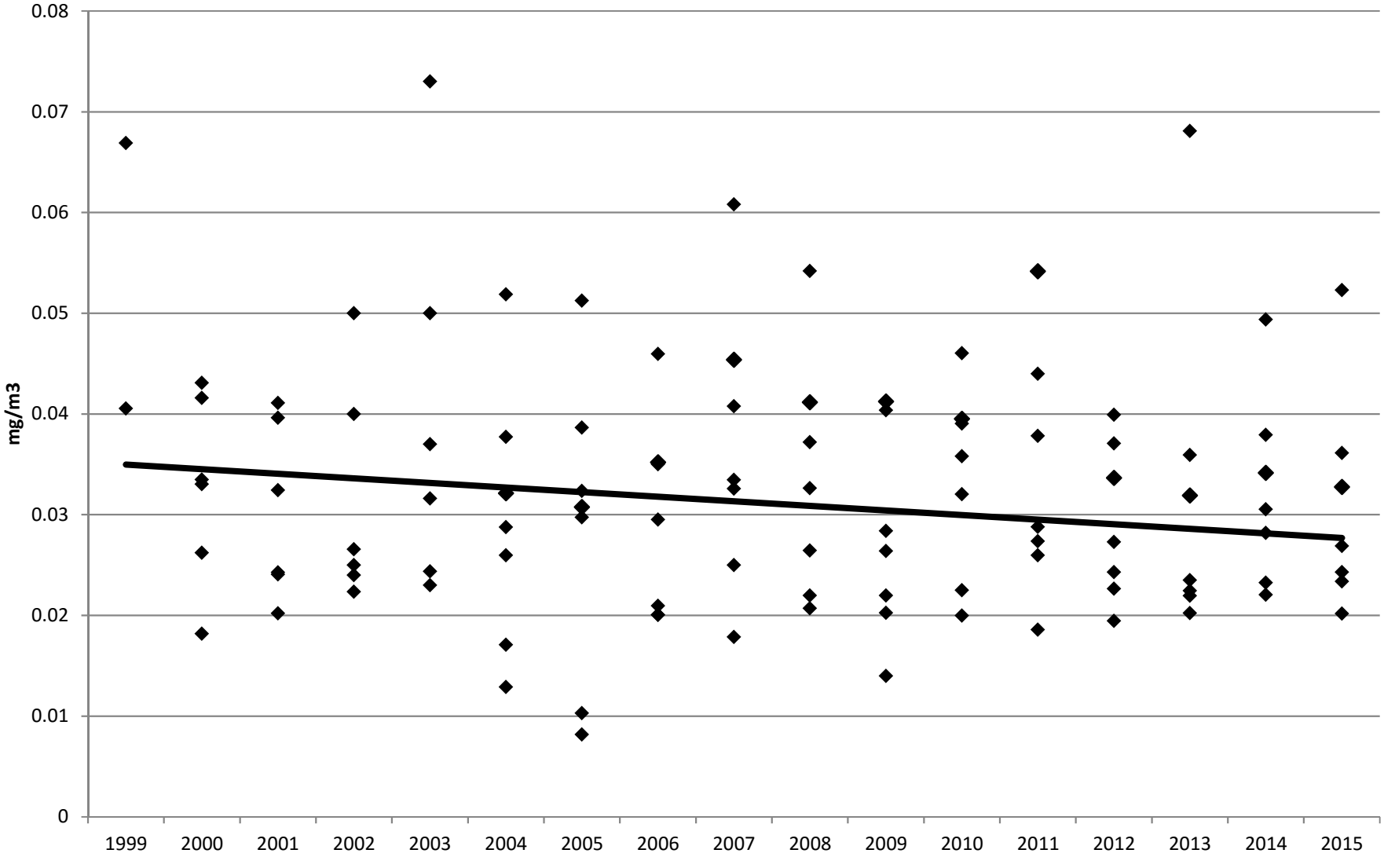

Figure 5-3
Total Phosphorus
Lake Worth Lagoon-N

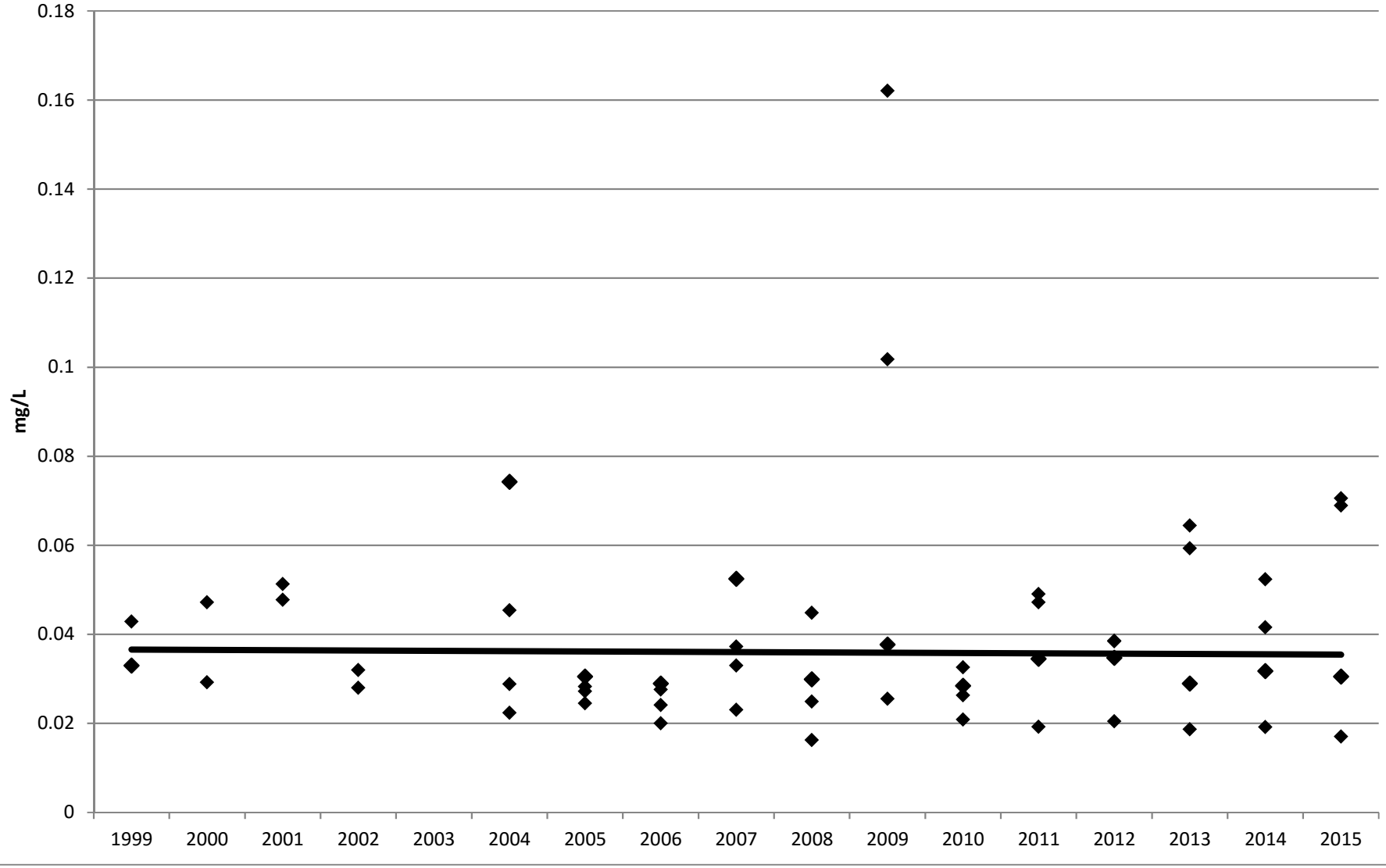

Figure 5-3
Total Phosphorus
Lake Worth Lagoon-C

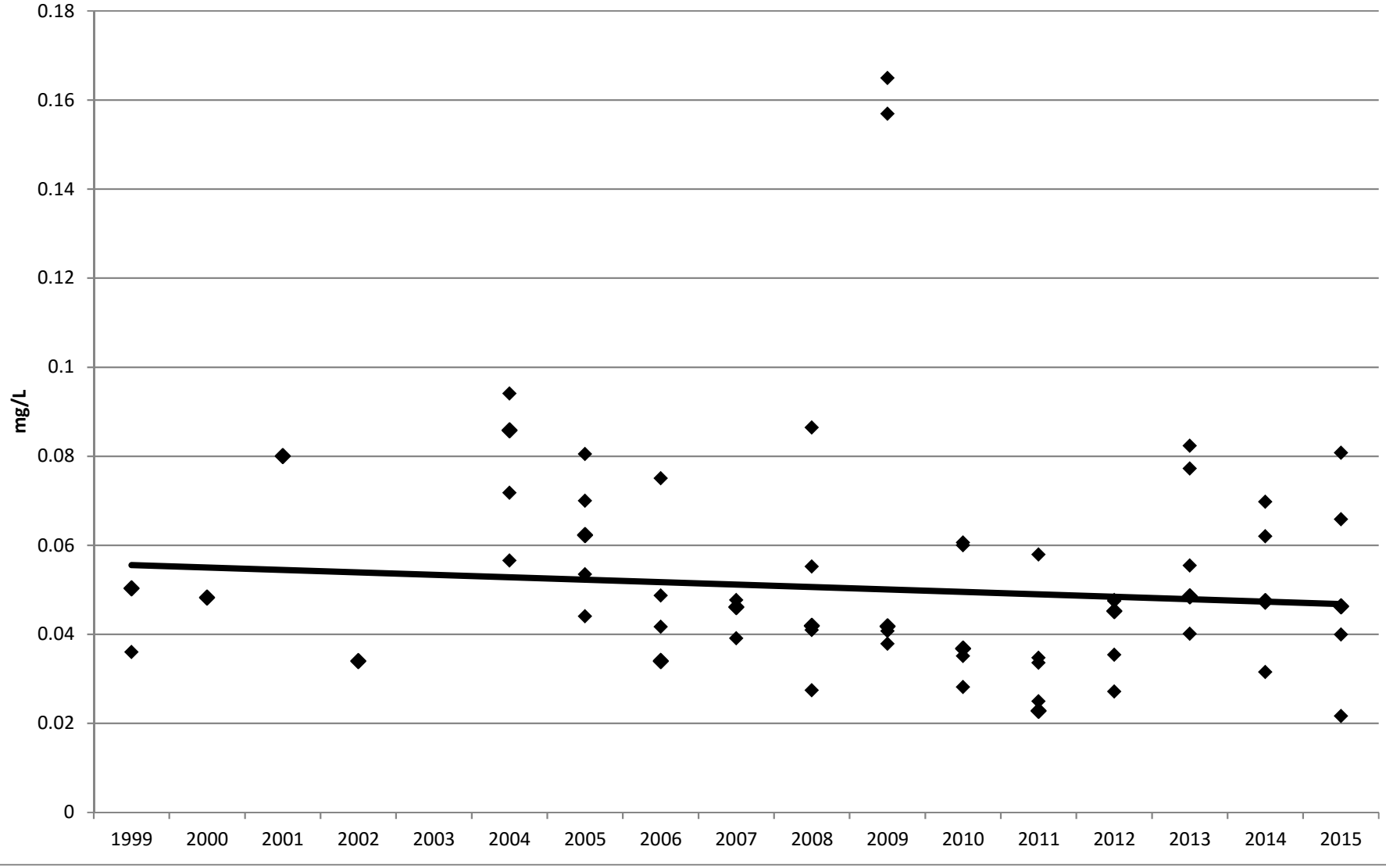

Figure 5-3
Total Phosphorus
Lake Worth Lagoon-S

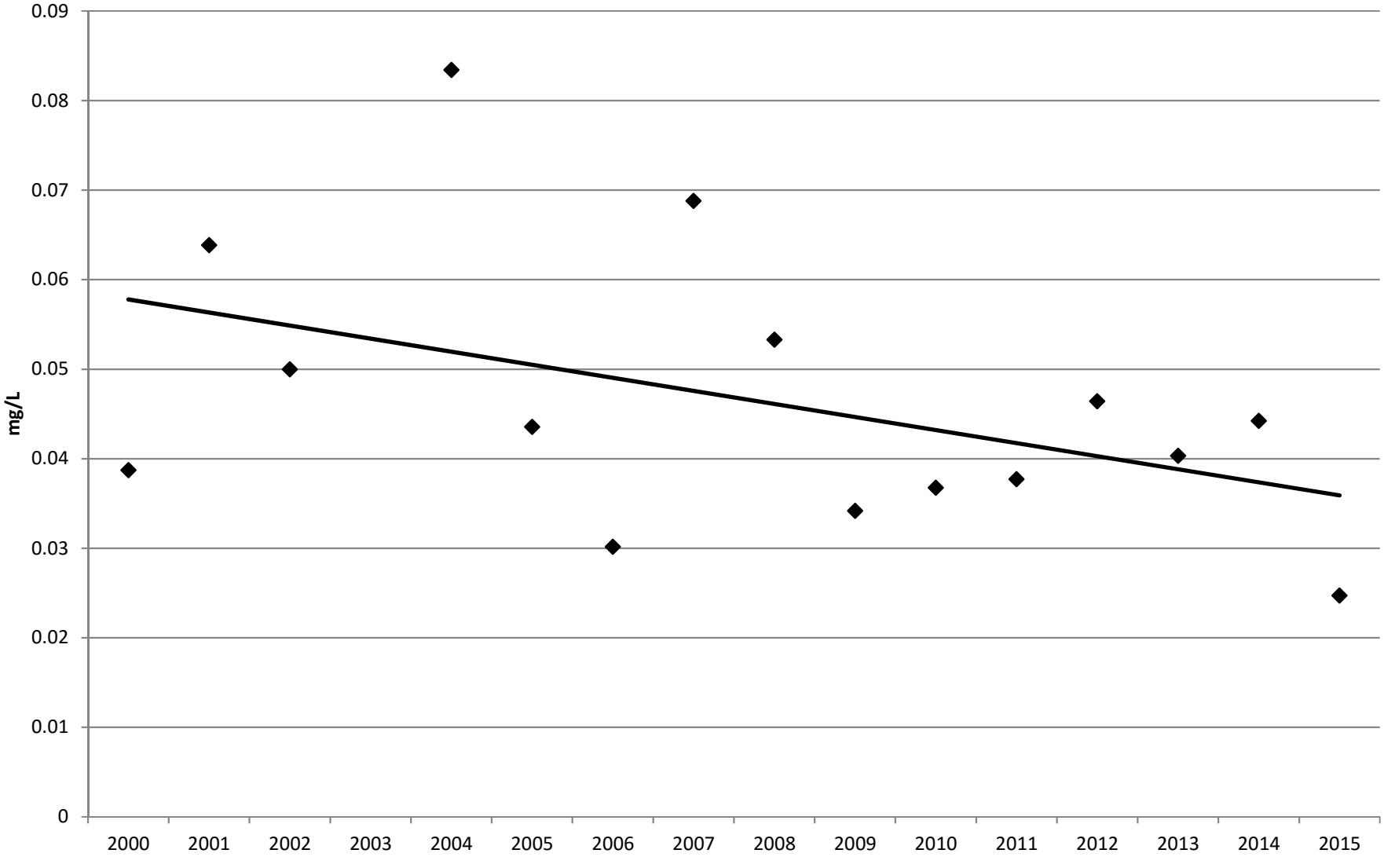

Figure 5-4
Chlorophyll-A
C-15 Watershed

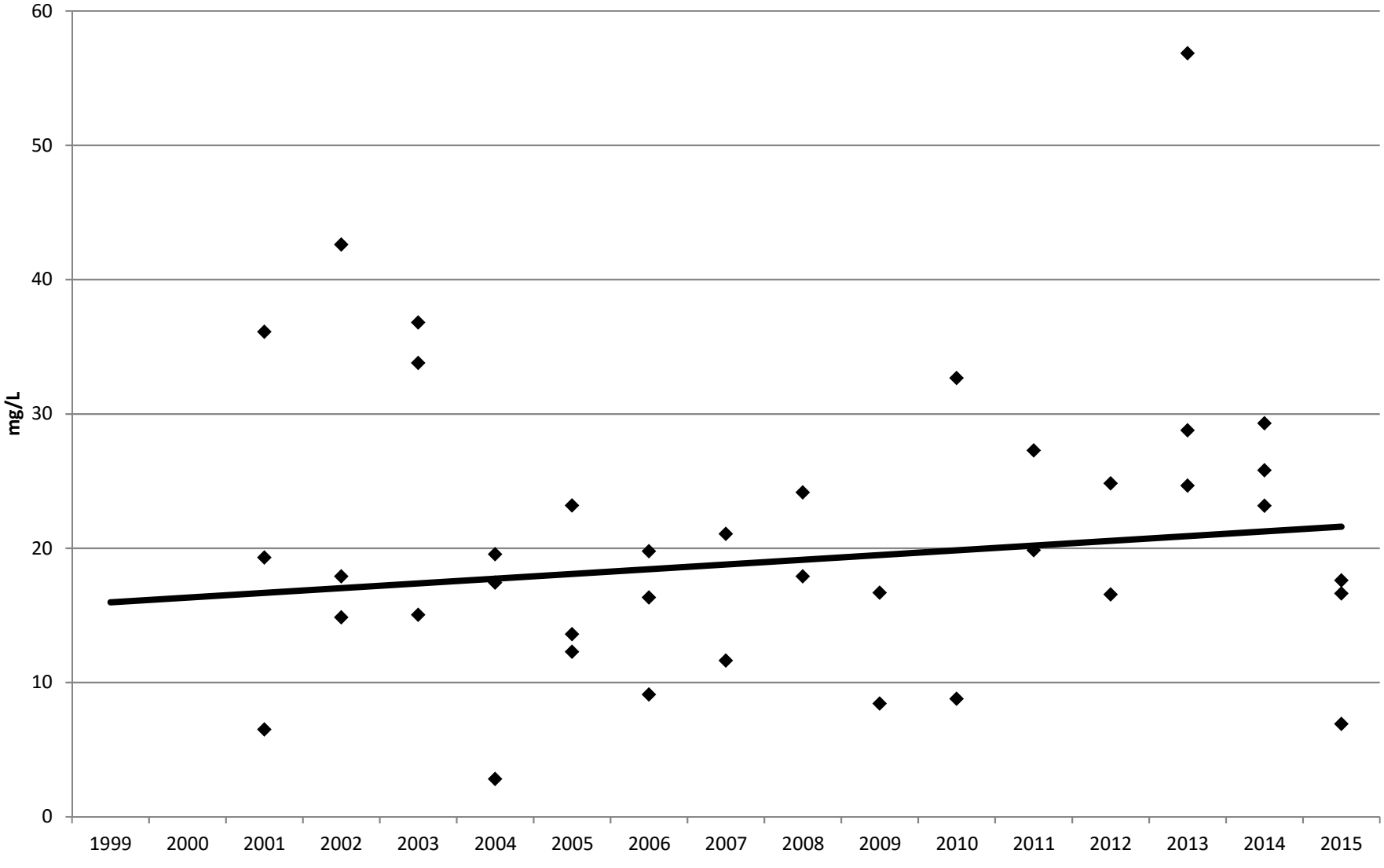

Figure 5-4
Chlorophyll-A
C-16 Watershed

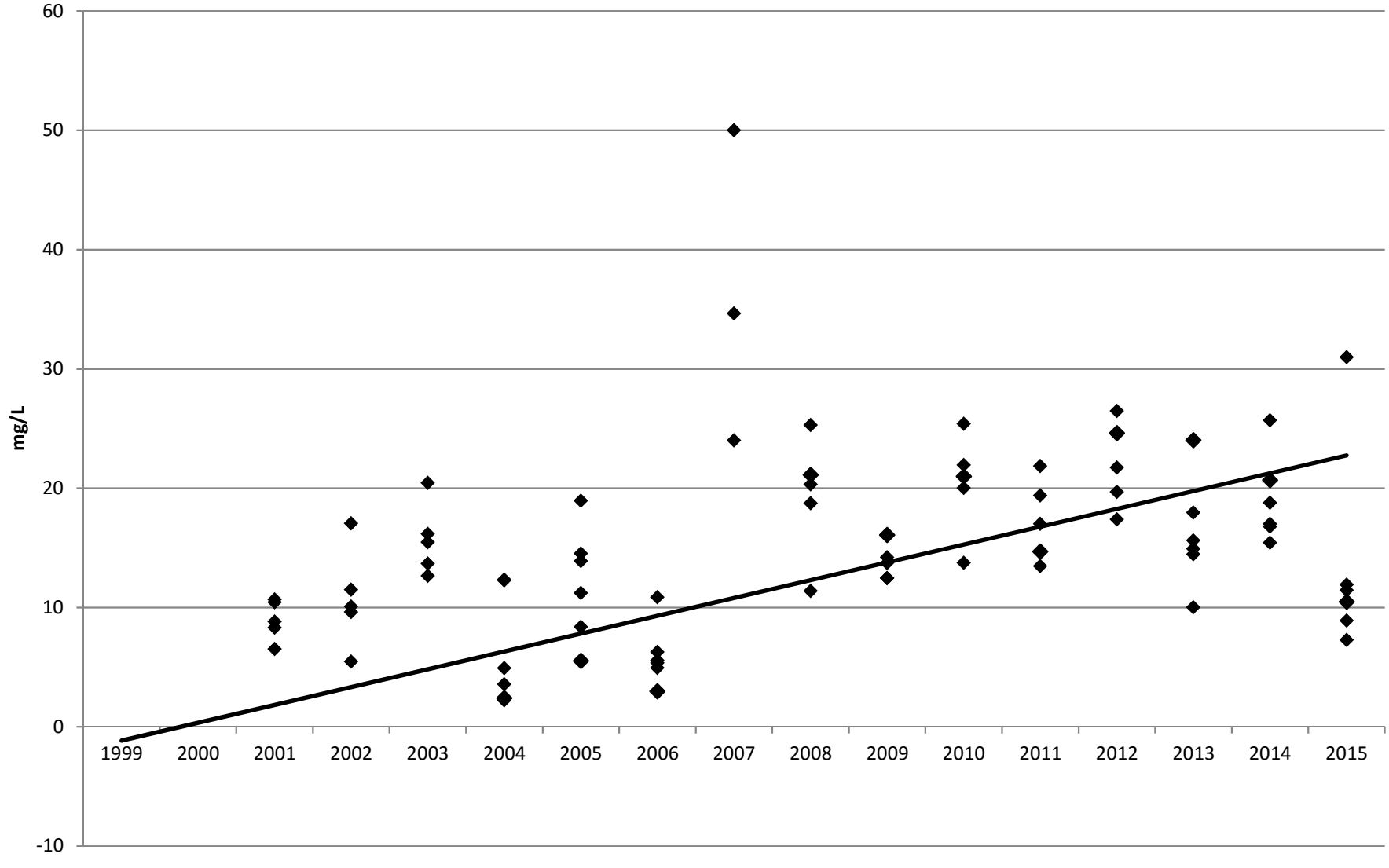

Figure 5-4
Chlorophyll-A
C-17 Watershed

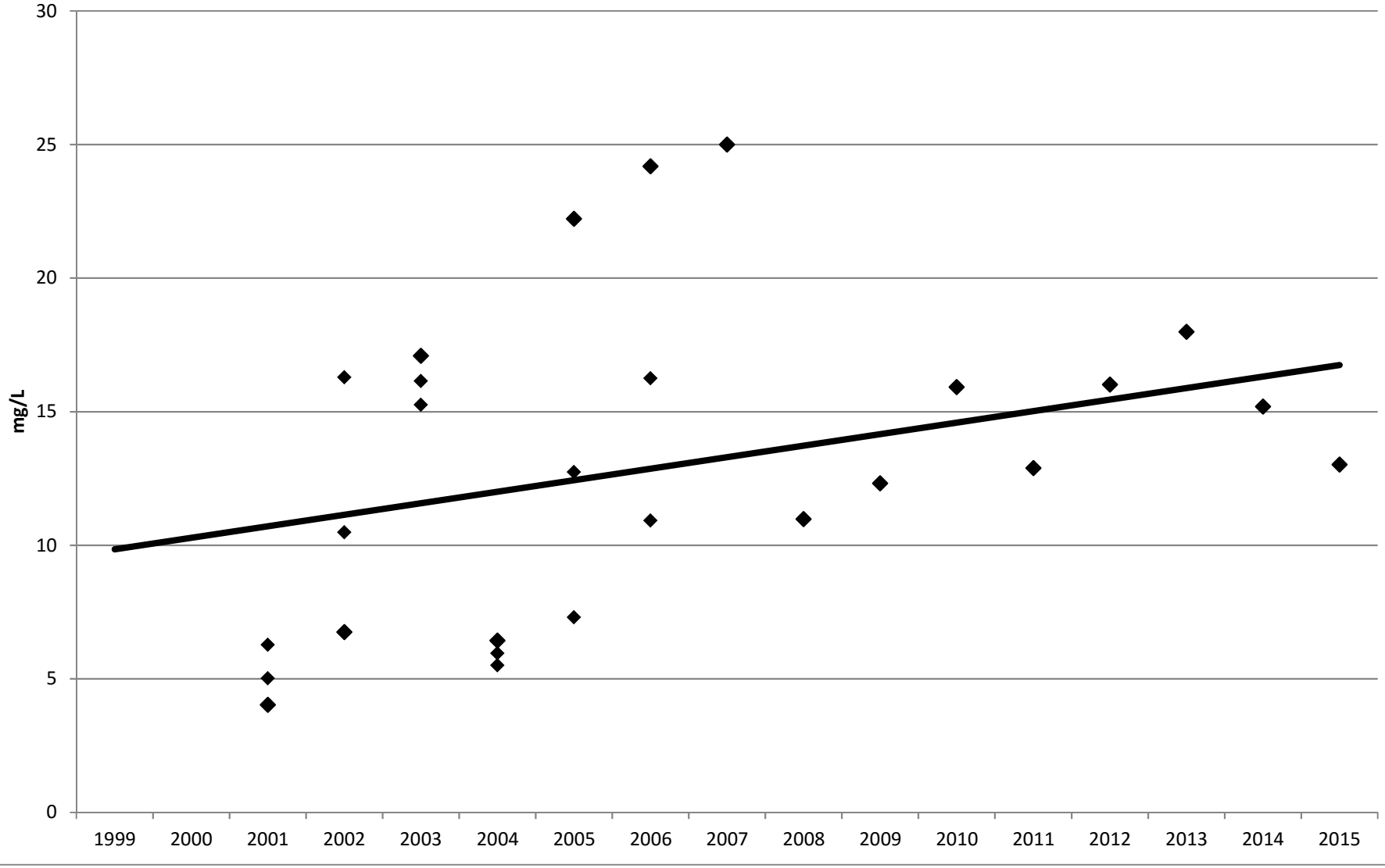

Figure 5-4
Chlorophyll-A
C-18 Watershed

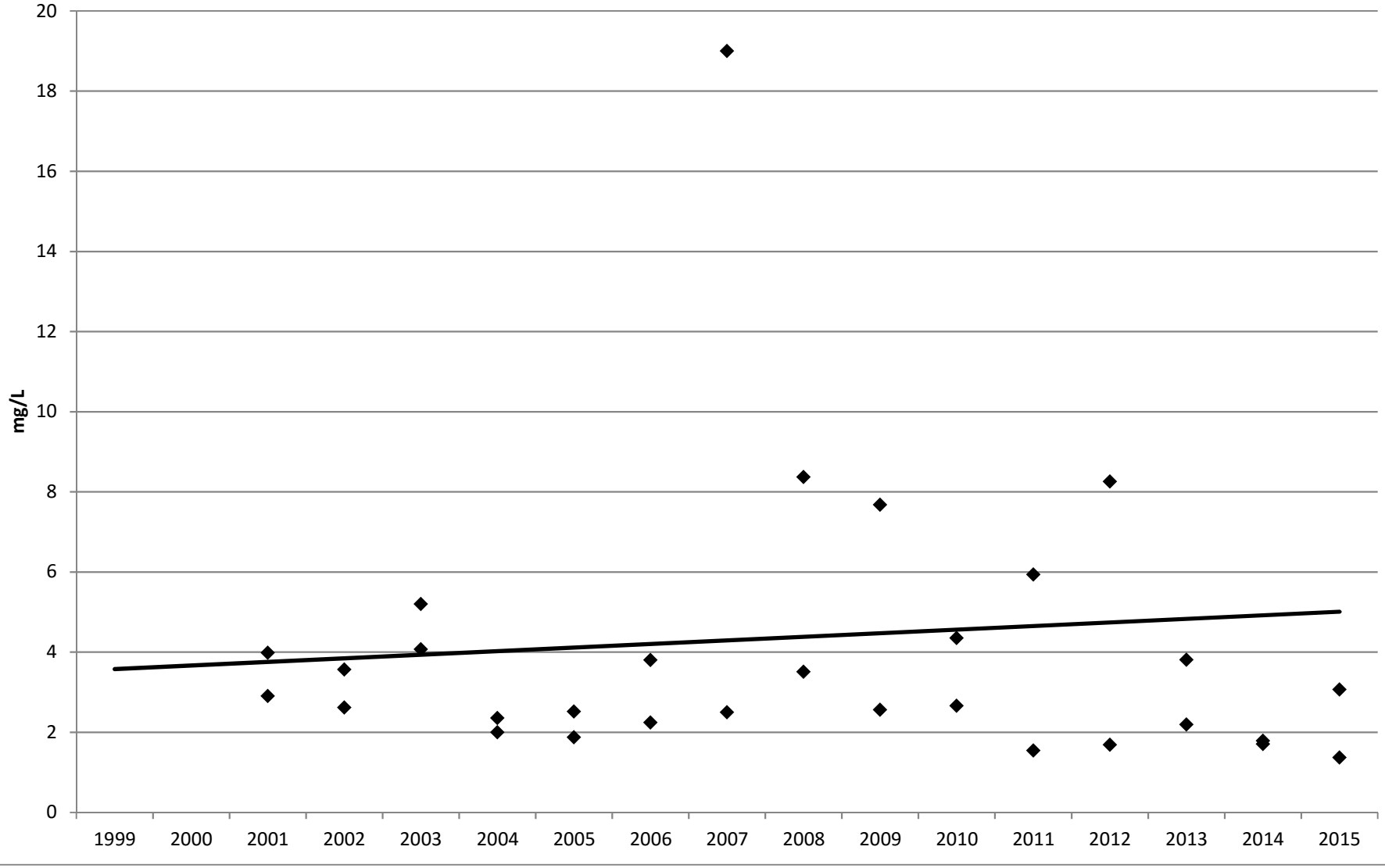

Figure 5-4
Chlorophyll-A
C-51 E Watershed

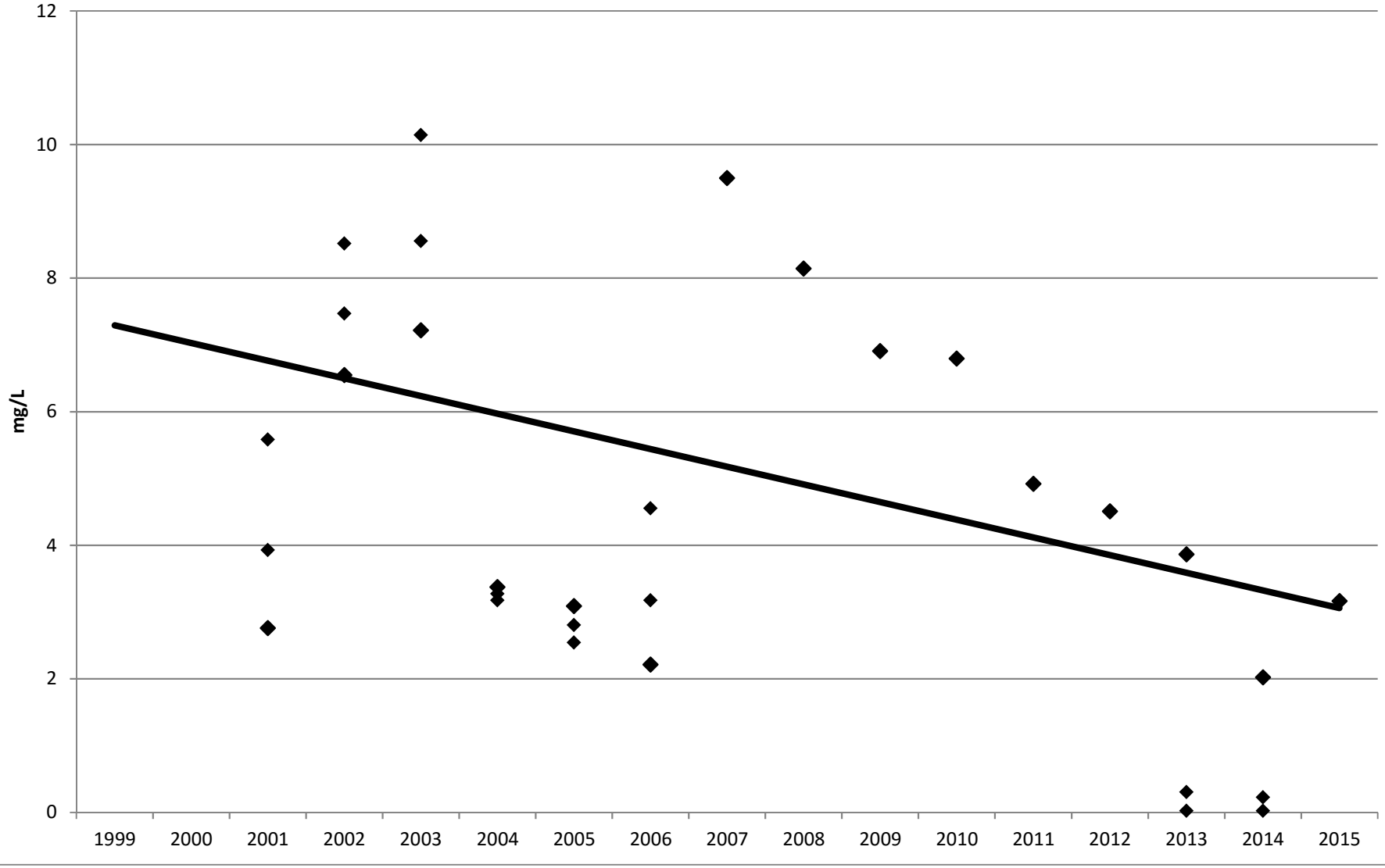

Figure 5-4
Chlorophyll-A
C-51 W Watershed

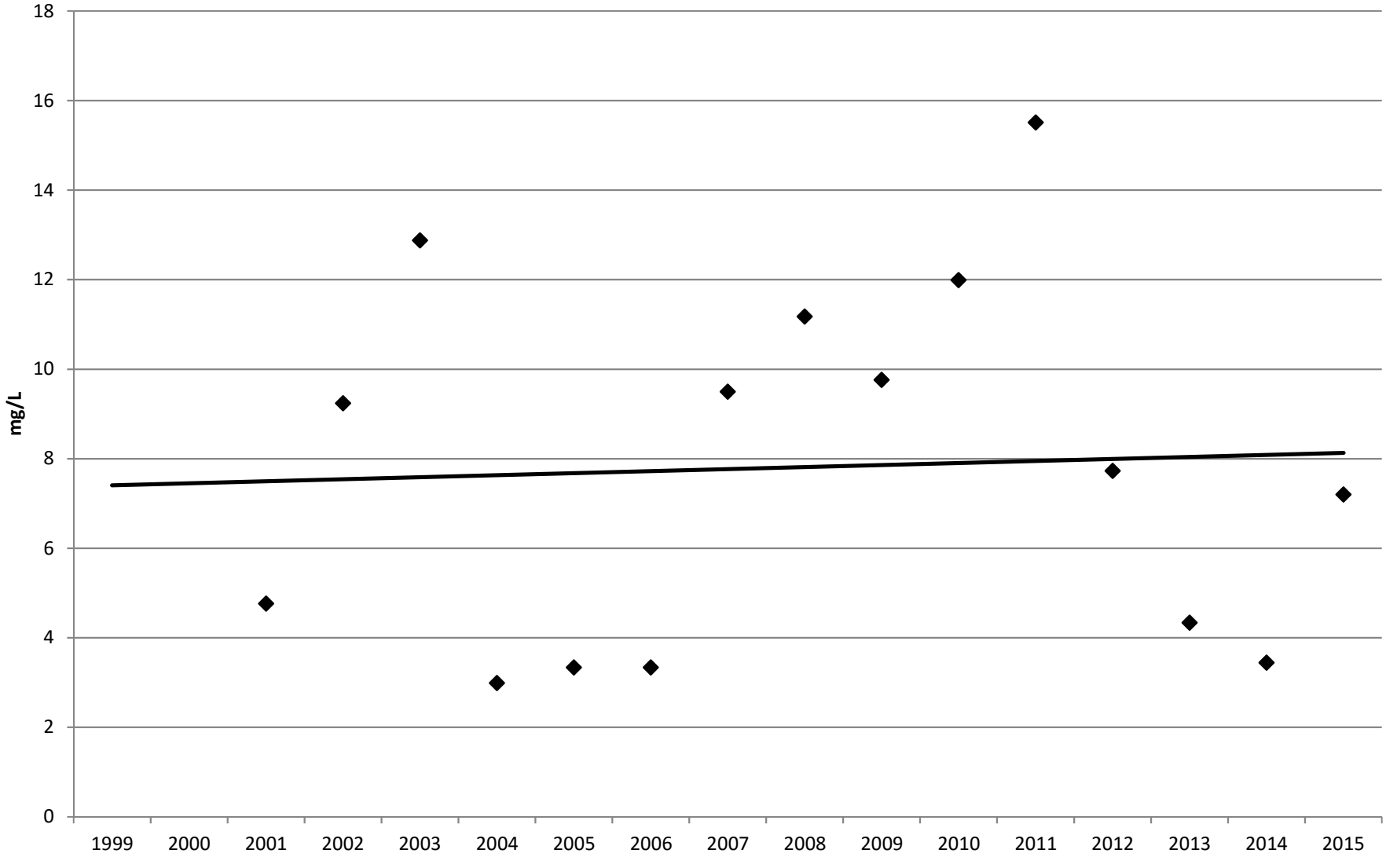

Figure 5-4
Chlorophyll-A
Loxahatchee

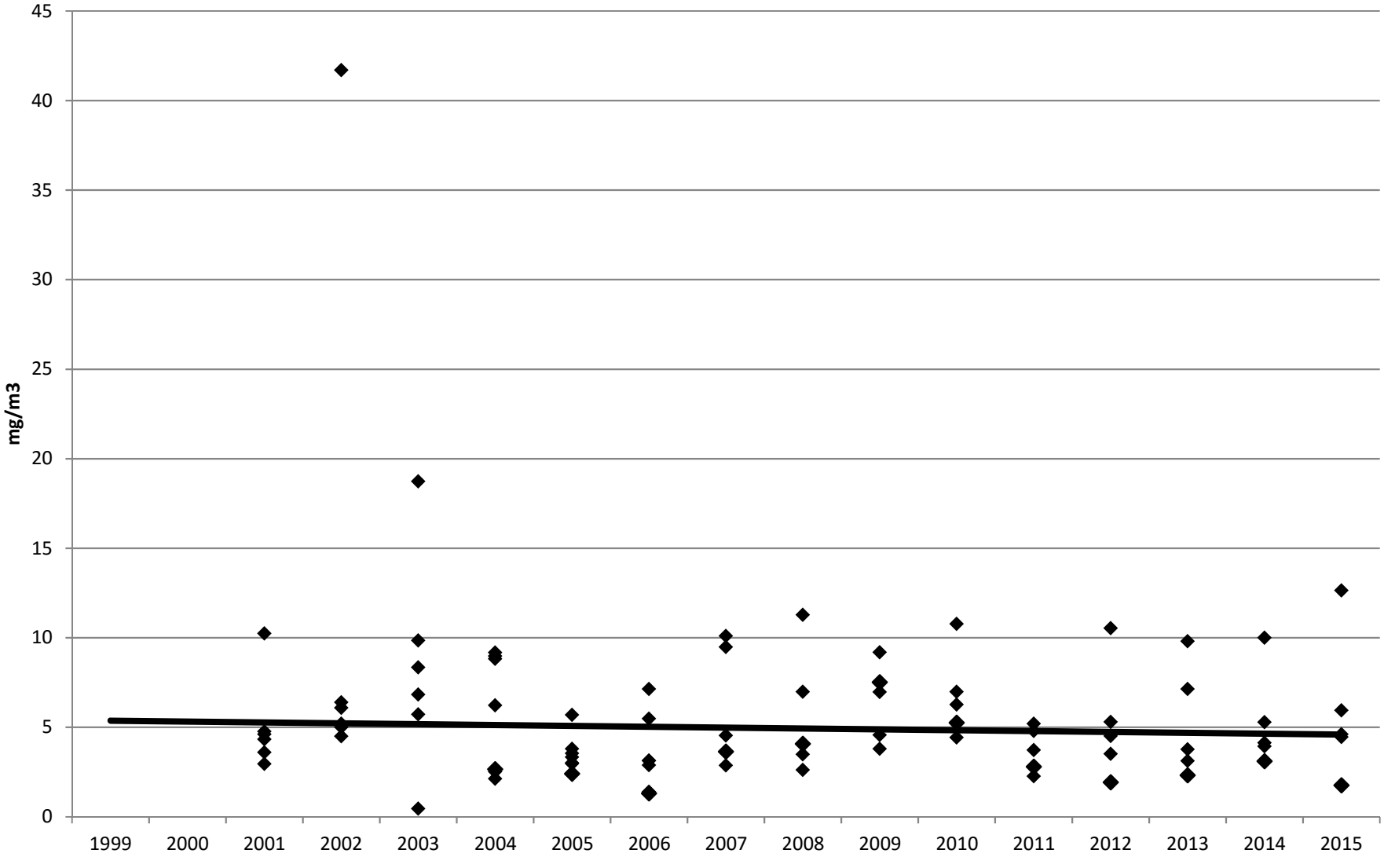

Figure 5-4
Chlorophyll-A
Lake Worth Lagoon-N

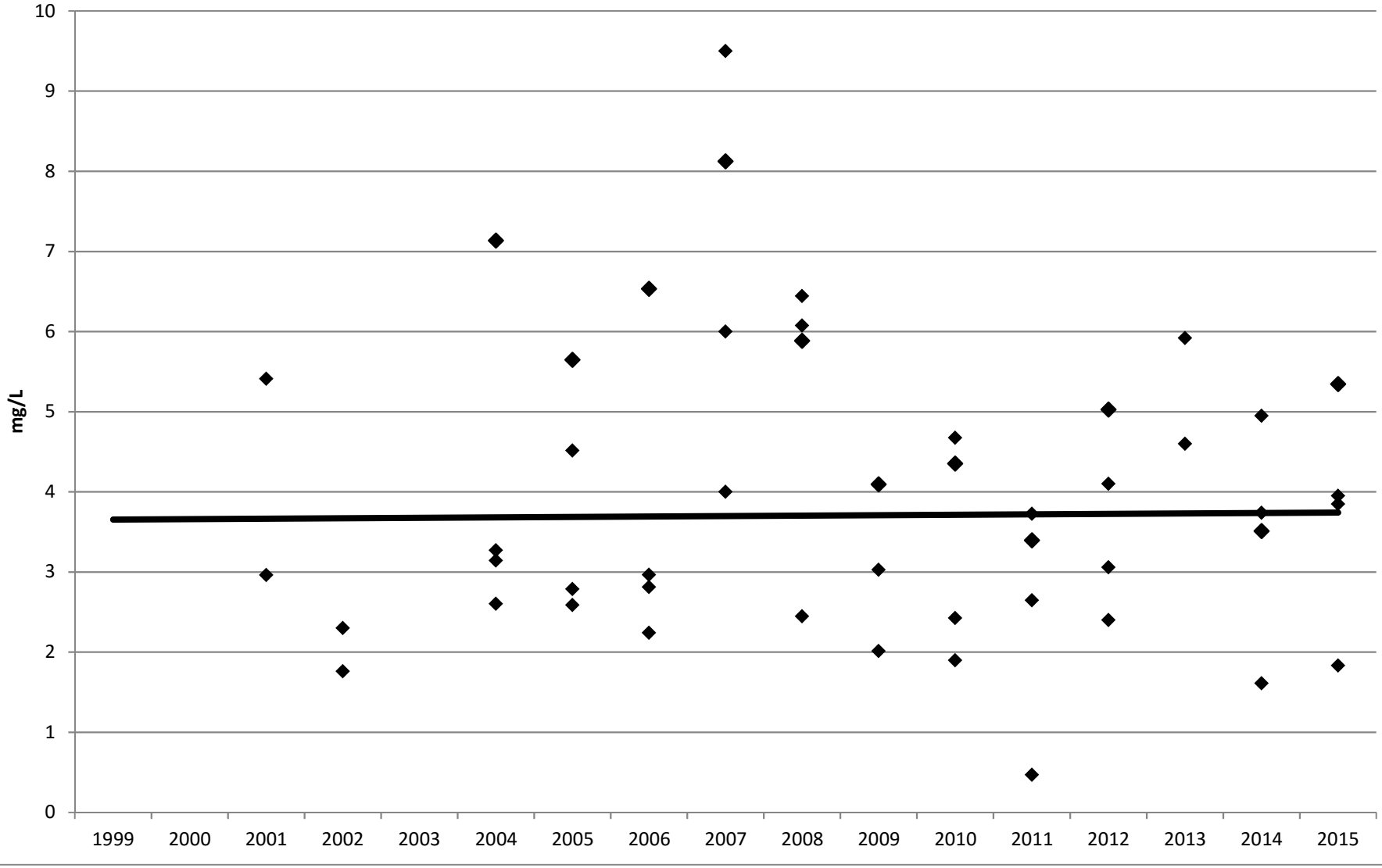

Figure 5-4
Chlorophyll-A
Lake Worth Lagoon-C

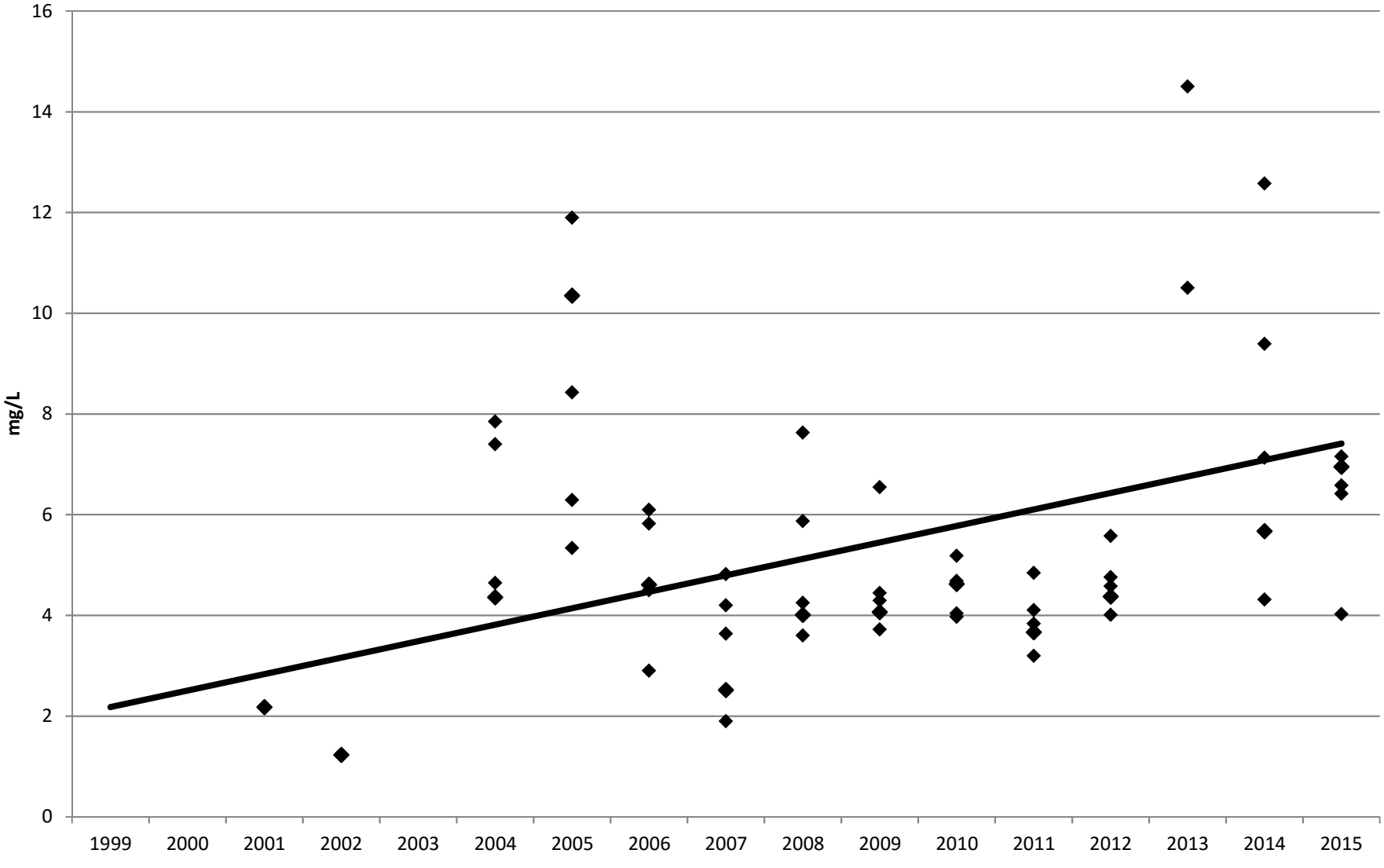

Figure 5-4
Chlorophyll-A
Lake Worth Lagoon-S