

ORIGINAL

State of Wisconsin
Runoff Management Section-WT/3
Department of Natural Resources
101 South Webster Street
Madison, WI 53703
or
PO Box 7921
Madison WI 53707-7921
dnr.wi.gov

Targeted Runoff Management (TRM) Grant Program
Large-Scale Agricultural Application
CY 2013 Funding
Form 8700-333 (R 1/12)

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Notice: This application form template was created by the Wisconsin Department of Natural Resources. Application is hereby made to the Wisconsin Department of Natural Resources, Bureau of Watershed Management, for grant assistance consistent with s. 281.65, Wis. Stats., and Chapters NR 153 and NR 154, Wis. Adm. Code. Collection of this information is authorized under the authority of s. 281.65, Wis. Stats. Personal information collected will be used for program administrative purposes and may be provided to requesters to the extent required by Wisconsin's Open Records Law [ss. 19.31 - 19.39, Wis. Stats.]. *Unless otherwise noted, all citations refer to Wisconsin Administrative Code.*

Please read the instructions prior to completion of this form. Complete all sections as applicable.

Applicant Information

Project Name Park Lake TRM Large 2013					
Governmental Unit Applying (name and type) (example: Dane County Land and Water Resources Department) Columbia County Land and Water Conservation Department					
Governmental Unit Web Site Address WWW.co.columbia.wi.us					
Name of Responsible Municipal Representative (First Last) Calkins, Kurt			Name of Governmental Contact Person (First Last) (if different) Calkins, Kurt		
Title Director of LWCD			Title Director of LWCD		
Area Code + Telephone Number 608 742 9670			Area Code + Telephone Number 608 742 9670		
Area Code + Cell Phone Number N/A			Area Code + Cell Phone Number N/a		
Area Code + Fax Number 608 742 9840			Area Code + Fax Number 608 742 9840		
E-Mail Address kurt.calkins@co.columbia.wi.us			E-Mail Address kurt.calkins@co.columbia.wi.us		
Mailing Address - Street or Route P.O. Box 485 120 West Conant Street			Mailing Address - Street or Route P.O. Box 485 120 West Conant Street		
City Portage	State WI	Zip Code 53901	City Portage	State WI	Zip Code 53901

Project Information

A. Location of Project

County: **Columbia**

State Senate District #: **16**

State Assembly District #: **47**

Name of Township(s): Marcellon, Scott And Randolph	Township (N)	Range	E or W	Section	Latitude (North, degrees, minutes, seconds only)	Longitude (West, degrees, minutes, seconds only)
Center Point: Randolph	13N	12	E	7	43 36' 41"	89 7' 38"

Method for Determining Latitude & Longitude (check one)

- ☐ GPS
☒ DNR Surface Water Data Viewer
☐ Other (specify):

B. Project Summary

This project application focuses on using previously collected watershed NR 151 compliance inventory information combined with recently collected watershed multi year tributary water monitoring data to secure cost share resources to implement a wide range of Agricultural BMP's that will help work towards the pollution reduction levels and goals outlined the Upper Fox River Basin Report, the Columbia County LWRMP and the DNR approved Park Lake Comprehensive Lake Management Plan. Park Lake is the downstream surface water body in which the Fox River drains to, it is currently on the 303d list of impaired waters, due to nutrient loading. In 2006 we conducted a watershed wide inventory of the watershed upstream from Park Lake. (Attachment #1) shows the details of that final report showing the level of work needed in the watershed. In 2012, we spent some time doing a short review of sites and updated our inventory specific to this HUC. The report details a wide range of needs, but we did notice a lot of smaller operations in need of smaller scale clean water work and perhaps opportunities to use grazing as an alternative to traditional expensive practices. NMP, seemed to be a priority based on our inventory data. We currently have preliminary BMP's ideas/plans for 5 operations in the watershed, with more sites identified, that would be worked with if funds are available. Previous individual TRM grants have been used in this watershed to bring a lot of other operators into compliance and address NPS issues. This grant will allow us to gain access to funds to address some of the remaining sites, regarding NR 151 issues. Our goal is to bring these landowner into compliance with NR 151. From 2007 to 2010, the LWCD worked with UWSP CWSE to conduct a watershed based water monitoring program to collect water samples and evaluate conditions of tributaries in regards to the 75mg/L goal outlined in NR 102, and to develop the final water quality information/loading allocations that would be used by DNR to continue the development of a TMDL for this watershed. See (Attachment #4) for details in this report, overall it outlines the current in Total Phosphorous concentrations in the tributaries. As part of this project, concentration levels have been converted to load allocations, the final model work will be done by June of 2012. The first and most necessary step in beginning to address these issues is to work with sites and operators in this HUC to implement remaining BMP's that will focus on P reduction. Our approach to low cost clean water work, in addition to more expensive traditional BMP's, combined with NMP development will help producers embrace this concept, and work with us to minimize downstream impacts. NMP is a priority if we are going to begin to help landowners understand PI index relationships on their farms. We feel we have done our homework regarding inventory work, basic landowner contacts and have current water quality data, that shows current conditions. Our past success with individual TRM grants in this watershed, show that we have the ability to identify and work with landowners to address these issues. We hope to work voluntarily with the landowners in this watershed, but will also be updating our local ordinances to include a more specific connection to the new NR 151 requirements and will spell out the stand alone relationship of NMP in our ordinance. The inclusion of this regulatory tool into our tool box will allow us to use it as an educational tool to bring more landowners into compliance. The LWCC committee has approved of moving forward with this additions, it is likely we will have it complete by the end of summer 2012. We have a good working relationship with landowners in the County and have spent the better part of 12 years working with the Pardeeville Lakes Management District, regarding public outreach and value of minimizing nutrient loading in watershed. We feel we can make this a successful focused project based on the work we have done thus far. The community is very engaged with this watershed and the relationship the watershed has to this surface water body. The Phosphorous loads coming into this lake are very high, as outlined in the report, the lake is very eutrophic and currently is stuck in a turbid water state. There is very little plant growth in this system due because of algal dominance, feed by nutrients. Watershed nutrient reductions in this watershed are necessary over the long run, to atleast prevent levels from increasing and challenging this already nutrient rich system.

C. Agricultural Performance Standards & Prohibitions to be Addressed in the Project Area (check all that apply).

To Be Addressed with TRM Funding	To Be Addressed by Other Funding Sources	Standard Not Applicable to This Project	Agricultural Performance Standard & Prohibitions	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1.	Sheet, rill, and wind erosion. (NR 151.02)
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2.	Tillage setback. (NR 151.03)
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	3.	Phosphorus index. (NR 151.04)
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	4.	Manure storage facilities-new/significant alterations. (NR 151.05(2))
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	5.	Manure storage facilities-closure. (NR 151.05(3))
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	6.	Manure storage facilities-existing failing/leaking. (NR 151.05(4))
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	7.	Process wastewater handling. (NR 151.055)
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	8.	Clean water diversions. (NR 151.06)
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	9.	Nutrient management. (NR 151.07)
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	10.	Prohibition: Prevention of overflow from manure storage facilities. (NR 151.08(2))
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	11.	Prohibition: Prevention of unconfined manure piles in water quality management areas (within 300 feet of a stream, 1000 feet. of a lake, or areas where the groundwater is susceptible to contamination). (NR 151.08(3))

<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	12.	Prohibition: Prevention of direct runoff from a feedlot or stored manure into waters of the state. (NR 151.08(4))
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	13.	Prohibition: Prevention of unlimited livestock access to waters of the state where high concentrations of animals prevent the maintenance of adequate sod cover or self-sustaining vegetation. (NR 151.08(5))

D. Watershed, Waterbody, and Pollutants (see Attachment A for items 1 through 6 and 11)

1. Name of Targeted Waterbody (Impaired – 303(d): Park Lake	2. Name of Targeted Waterbody (Not Impaired): Fox River	3. Watershed Code: UF 15	4. Watershed Name: Swan Lake
5. 12-digit Hydrologic Unit Code (HUC) Code: 040302010101	6. 12-digit HUC Subwatershed Name: Sand Spring Creek-Fox River	7. Estimated Number of Farms in Project Area: 20	8. Estimated Number of Cropland Acres in Project Area: 10000
9. Number of WPDES-Permitted Livestock Operations in Project Area: 0		10. Estimated Number of Other Livestock Operations in Project Area: 35	

11. ☒ This is a surface water project and Wisconsin Buffer Initiative (WBI) Watershed Information is available (fill in A-I below)
☐ This is a surface water project and **no** WBI Watershed Information is available for this area
☐ This is a groundwater project (do not fill in A-I below)

A. WBI Watershed ID: **127369**
B. Stream at Watershed Outlet: **Fox River**
C. County at Watershed Outlet: **Columbia**
D. Watershed Area (square miles): **34**
E. WBI Highest Group Rank: **225-F**
F. Stream Water Quality Component Rank: **1117**
G. Fish Habitat Component Rank: **461**
H. Lake Water Quality Component Rank: **9999**
I. WBI Composite Rank: **851**

12. Nonpoint Source Pollutant(s) Controlled by the Project:

☒ Nutrients ☒ Sediment ☐ Other, specify:

Yes No

E. Endangered and Threatened Resources, Historic Properties, and Wetlands

Check the appropriate box for each question based on what the **governmental unit knows** to occur where the project disturbs land. If you have no evidence of the items below, check "No."

- ☐ ☒ 1. There are endangered or threatened resources, as identified in s. 29.604, Wis. Stats., and ch. NR 27 in the project area.
☐ ☒ 2. There are archaeological sites, historical structures, burial sites, or other historic places identified in s. 44.45, Wis. Stats., in the project area.
☐ ☒ 3. There are wetlands in the project area that are governed by water quality standard provisions of ch. NR 103.

F. Request for Retroactive Funding for Design Costs

- ☐ ☒ Requesting reimbursement for design costs that have been or will be incurred before issuance of the grant.

G. Request for Funding for Force Account Work

- ☒ ☐ Requesting reimbursement for technical services to be performed by governmental unit staff (force account).

Part I. Screening Requirements

Yes	No	A. Map			
<input checked="" type="checkbox"/>	<input type="checkbox"/>	An 8.5" x 11" topographic map from USGS or the DNR data/map viewers, showing the project area, is attached.			
<input checked="" type="checkbox"/>	<input type="checkbox"/>	B. Best Management Practices (BMPs) For Which DNR Funding Is Requested (check all that apply) (see Attachment D for additional BMP information)			
		Structural Practice	Wis. Adm. Code	Structural Practice	Wis. Adm. Code
<input checked="" type="checkbox"/>		Manure Storage Systems	NR 154.04(3)	<input checked="" type="checkbox"/> Riparian Buffers	NR 154.04(25)
<input checked="" type="checkbox"/>		Manure Storage System Closure	NR 154.04(4)	<input type="checkbox"/> Roofs	NR 154.04(26)

- | | | | |
|---|---------------|---|---------------|
| <input checked="" type="checkbox"/> Barnyard Runoff Control Systems | NR 154.04(5) | <input checked="" type="checkbox"/> Roof Runoff Systems | NR 154.04(27) |
| <input checked="" type="checkbox"/> Access Roads & Cattle Crossings | NR 154.04(6) | <input checked="" type="checkbox"/> Sediment Basins | NR 154.04(28) |
| <input checked="" type="checkbox"/> Animal Trails and Walkways | NR 154.04(7) | <input type="checkbox"/> Sinkhole Treatment | NR 154.04(30) |
| <input checked="" type="checkbox"/> Critical Area Stabilization | NR 154.04(10) | <input type="checkbox"/> Subsurface Drains | NR 154.04(33) |
| <input checked="" type="checkbox"/> Diversions | NR 154.04(11) | <input checked="" type="checkbox"/> Terrace Systems | NR 154.04(34) |
| <input type="checkbox"/> Field Windbreaks | NR 154.04(12) | <input checked="" type="checkbox"/> Underground Outlets | NR 154.04(35) |
| <input checked="" type="checkbox"/> Filter Strips | NR 154.04(13) | <input checked="" type="checkbox"/> Waste Transfer Systems | NR 154.04(36) |
| <input checked="" type="checkbox"/> Grade Stabilization | NR 154.04(14) | <input checked="" type="checkbox"/> Wastewater Treatment Strips | NR 154.04(37) |
| <input checked="" type="checkbox"/> Heavy Use Area Protection | NR 154.04(15) | <input checked="" type="checkbox"/> Water and Sediment Control Basins | NR 154.04(38) |
| <input type="checkbox"/> Lake Sediment Treatment | NR 154.04(16) | <input checked="" type="checkbox"/> Waterway Systems | NR 154.04(39) |
| <input checked="" type="checkbox"/> Livestock Fencing | NR 154.04(17) | <input type="checkbox"/> Well Decommissioning | NR 154.04(40) |
| <input checked="" type="checkbox"/> Livestock Watering Facilities | NR 154.04(18) | <input type="checkbox"/> Wetland Development or Restoration | NR 154.04(41) |
| <input checked="" type="checkbox"/> Prescribed Grazing | NR 154.04(22) | Streambank and Shoreline Protection: NR 154.04(31)
(includes associated fencing) | |
| <input type="checkbox"/> Relocating or Abandoning Animal Feeding Operations | NR 154.04(23) | <input checked="" type="checkbox"/> Stream Crossing | |
| Process Wastewater Handling: NR 154.04(19) & NRCS 629 | | <input type="checkbox"/> Streambank/Shoreline Rip-rapping | |
| <input checked="" type="checkbox"/> Milking Center Waste Control Systems | | <input type="checkbox"/> Streambank/Shoreline Shaping & Seeding | |
| <input checked="" type="checkbox"/> Feed Storage Leachate | | <input type="checkbox"/> Streambank/Shoreline Fencing | |
| <input type="checkbox"/> Other Wastewater – specify in "Other" below | | <input type="checkbox"/> Other Streambank/Shoreline Protection (incl. bio-engineering) - specify in "Other" below | |

- | Cropping Practice | Wis. Adm. Code | Cropping Practice | Wis. Adm. Code |
|---|-----------------------|---|-----------------------|
| <input type="checkbox"/> Contour Farming | NR 154.04(8) | <input type="checkbox"/> Pesticide Management | NR 154.04(21) |
| <input type="checkbox"/> Cover & Green Manure Crop | NR 154.04(9) | <input type="checkbox"/> Residue Management | NR 154.04(24) |
| <input checked="" type="checkbox"/> Nutrient Management | NR 154.04(20) | <input type="checkbox"/> Strip-Cropping | NR 154.04(32) |
| <input type="checkbox"/> Other (specify) | | | |

C.1: General Filters

Note: The applicant must be able to answer "Yes" to each of the filter questions 1 through 10 and "Yes" or "NA" to question 11. In addition, provide additional documentation as required by the questions 5, 9, 10 and 11. If any of these questions is answered "No" or documentation is omitted, the application will not be scored.

- | Yes | No | |
|-------------------------------------|--------------------------|--|
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | 1. The project will control agricultural runoff. |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | 2. New Facilities: Funding from this grant will not be used for best management practices to bring into compliance with state standards and prohibitions any cropland, livestock facility, or significant livestock facility alteration that is created after the effective date of the applicable NR 151 performance standard or prohibition. |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | 3. Previously in Compliance: Funding from this grant will not be used for best management practices to bring a livestock facility or cropland back into compliance with a performance standard or prohibition in ch. NR 151 when such compliance had previously been achieved after the effective date of the standard or prohibition. |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | 4. Previous Offer of Cost Sharing: Funding from this grant will not be used for best management practices for which the DNR or local unit of government included a previous offer of cost sharing as part of a NR 151 notice or county notice meeting requirements of NR 151.09 or NR 151.095. |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | 5. Project is consistent with the county Land & Water Resources Management Plan (LWRMP), plan amendment, or workplan prepared under s. ATCP 50.12, Wis. Adm. Code.
a. To demonstrate consistency, identify the goals, objectives, or activities from the LWRMP, plan amendment, or workplan related to the resource(s) of concern being addressed by the project. Identify the document name and provide a web link to that document. |

Columbia County Land and Water Resource Management Plan(2011)
www.co.columbia.wi.us/Columbia County/lwcd

- ☒ ☐ 6. Project will be completed within 36 months of the start of the grant period.
- ☒ ☐ 7. Staff and contractors designated to work on this project have adequate training, knowledge, and experience to implement the proposed project.
- ☒ ☐ 8. Staff or contractual services, in addition to those funded by this grant, will be provided if needed.
- ☒ ☐ 9. The local DNR District Nonpoint Source Coordinator (see **Attachment C**) has been contacted and the project was discussed:

Name of the District Nonpoint Source Coordinator Contacted	Date Contacted	Topic of Discussion
Michael Volrath DNR	3/22/2012	2013 DNR TRM Grant Plans to Submit
Michael Volrath DNR	4/16/2012	Summary of Grants as applied Final.

Yes No
☒ ☐

10. The county, in which the project resides, has a strategy in an approved LWRMP, an updated LWRMP work plan, or an Inter-Governmental Agreement with the DNR to implement agricultural performance standards and prohibitions contained in ch. NR 151. To answer "Yes," the strategy must include **all** of the following key activities. List the document and page number where the activity is addressed.

NR 151 Implementation Activity		Document	Page Number
a.	Inform and educate landowners/operators required to comply with performance standards and prohibitions.	Columbia County LWRMP	44-51
b.	Conduct compliance status inventories based on records reviews and on-site visits.	Columbia County LWRMP	44-51
c.	Document inventory results and maintain compliance status records.	Columbia County LWRMP	44-51
d.	Report inventory results and continuing compliance requirements to landowners/operators.	Columbia County LWRMP	44-51
e.	Identify best management practices to achieve compliance.	Columbia County LWRMP	44-51
f.	Apply for grants from the Department of Natural Resources or work to secure grants from other state, federal, or local sources to provide Cost Sharing to landowners/operators to achieve compliance with performance standards and prohibitions.	Columbia County LWRMP	44-51
g.	Develop Cost-Share agreements and provide for technical assistance to landowners/operators to achieve compliance with performance standards and prohibitions.	Columbia County LWRMP	44-51
h.	Assist the Department of Natural Resources at its request in drafting NR 151 notices to landowners/operators.	Columbia County LWRMP	44-51
i.	Fulfill annual program reporting requirements.	Columbia County LWRMP	44-51

Yes No N/A
☐ ☐ ☒

11. If this is a joint application among local units of government, a DRAFT Inter-Governmental Agreement is attached. (See **Attachment I**)

C.2. Project Type Filter

Note: To pass this filter, you must be able to answer "Yes" to either Question 1 or Question 2, including all of the sub-questions, and provide the documentation requested. If you answer "No" to both questions, are unable to check the sub-questions, or omit the documentation requested, the application will not be scored.

Yes No

- ☐ ☒ 1. **TMDL Project:** The project will address a geographic area that is covered by an EPA-approved TMDL report or an equivalent to a TMDL as approved by the DNR. Applicants must be able to check all four boxes below (a through d) to be able to answer "Yes" to this question.
- ☐ ☒ a. The project addresses the pollutant(s) specified as causing the impairment.
- ☐ ☒ b. The project is consistent with the available TMDL implementation plan or no implementation plan is available.

- ☐ ☒ c. The funds will be used to target the most critical nonpoint pollution sources in the project area.
- ☐ ☒ d. Provide the title of the TMDL report or equivalent:
-
- ☒ ☐ 2. **Non-TMDL Project:** The project will address a state priority water quality need set forth in a watershed-based plan recognized by the Department as an adequate basis for funding. Applicants must be able to check all five boxes below (a through e) and identify the qualifying plan in order to be able to answer "Yes" to this question.
- ☒ ☐ a. The project drainage area (area draining to the targeted waters) is not less than 8 **or** more than 39 square miles.
- ☒ ☐ b. The project will address pollutants identified in the plan as threatening or degrading water quality.
- ☒ ☐ c. The funds will be used to target the most critical nonpoint pollution sources in the watershed.
- ☒ ☐ d. The project will be designed primarily to achieve attainment of one or more agricultural performance standards and prohibitions.
- ☒ ☐ e. Provide the title of the plan or pollution control strategy that the project will implement.

State Of The Upper Fox River Basin October 2011 & Park Lake DNR Approved Comprehensive Lake Management Plan 2009
(<http://www.co.columbia.wi.us/Columbiacounty/Portals/16/Park%20Lake%20Comprehensive%20Management%20Plan.Pdf>)

Part II. Competitive Elements

Question 1. Water Quality Need

A. Water Quality Need: In a narrative describe the impairments or threats to beneficial uses of the water resources within the project area.

This project is targeting NPS pollution upstream from a 303d listed surface water body, impaired by nutrient and sediment loading. The basin in general suffers from excessive nutrient loading coming from ag sources. The current Total Phosphorous in stream concentrations in our study area are well above the state goal. We have been working closely with the Pardeeville Lakes Management District, because they recognize that their impoundment water quality is directly related to the nutrient load coming in to the lake. We hope to continue to work on reducing the P load coming into the Fox River and Park Lake, so we can work towards minimizing the nutrient loading. Working with farmers to recognize and reduce, where possible unnecessary nutrient loading will help minimize that now and into the future and maintain the current conditions. Reducing the nutrient load, is a very important component relating to the success of any inlake restoration option, if it were adopted, that would try and return the lake to a plan dominated state. Concerns over the excessive loading from the watershed, is and important realization regarding this in lake management option. NMP we feel is an important first step to help us understand PI Index relationships in sub watershed. Active gully erosion due to lack of established and maintained grassed waterways is a challenge in this watershed. Sediment loading from agricultural sources is a concern in this watershed. NMP, the performance standard and the 590 standard, will allow us to control these gullies as a condition of the plan. Currently there is no stand alone requirement to address gully erosion, with out NMP.

B. Pollutants of Concern: In a narrative describe pollutants and habitat problems causing these impairments or threats to beneficial uses.

NPS agricultural nutrient and sediment loading. Phosphorous movement, both particle and soluble, will be the target of this project and its BMP's. Nitrate impacts to groundwater will also be addressed as referenced above. Local impairment concerns because of nutrient loading and sedimentation is most evident in concerns surrounding the status of 303d listed Park Lake.

Question 2. Pollutant Reduction Goal and Expected Response

A. Pollutant Reduction Goal: In a narrative state the desired reduction in key pollutants and habitat problems and how this project can achieve or significantly contribute towards that goal.

It is felt that if we use NMP as a tool to begin to help farmers manage upland soil loss and identify P Index challenges greater than 6, we can begin to slow the upland sources of P to the tributaries. Currently we have very low documented use of NMP in this subwatershed. The standard array of conservation BMP's will be used to help landowners address livestock runoff issues and other erosion issues. We hope to use managed intensive grazing as an optional BMP's to get producers to move animals out of existing drylot areas, that are traditionally used year to year to move them into managed pastures. Our current research is telling us that these existing lot situations can be large sources of P to the system. Before we can move ahead with any NPS water quality restoration initiative, it is important to establish a baseline. We feel our current water monitoring work, has helped us do that. We also feel we need to have sufficient time and resources to work with producers to try and get the basic NR 151 landuse expectations in place. From there you can move forward with perhaps additional more indepth approaches to targeting. We do feel that the implementation of all of these tools will reduce the P loading into the system.

B. Expected Response: In a narrative discuss the sensitivity of the water resources and the expected response of the resources due to implementation of this project.

Again, based on current baseline water quality information, we feel that if succesfull we can move forward with implementation in this basin, and then move into the other HUC that impact this entire watershed and document that landowners have implemented BMP's that will reduce the likely hood of increased nutrient and sediment loading. If money becomes available. More post project monitoring would make sense. If we can get closer to the goal of 75 mg/L we feel we will be reducing the downstream risks in Park Lake. In order to be succesful with one day moving Park Lake from the 303d impaired waters list, we will need to document watershed improvements, related to base lines established in NR 151 and combine that with some inlake restoration tools. The success of the inlake tools, and the publics support of those tools will be directly response to the work that has been done in the watershed.

Question 3. Inventory and Targeting

A. Project Area: In a narrative present a rationale for why you have delineated this particular project area. Describe previous work in the project area and why the project area is still considered a significant contributor of pollutants or habitat impairments to the targeted waterbodies.

This is one of three target watershed areas in Columbia County based on citizen concerns of nutrient loading, sedimentation, drinking water impacts and overall downstream surface resource water quality. We completed NR 151 inventory of this project area ending in 2006. We received a number of previous small scale TRM grants to work with a few operators in this area succesfully. We also conducted a watershed water quality monitoring project from 2007- 2010(See attachment #4) .The results of this work can be found in (Attachment #4), and show a high in stream Total P concentration. The Pardeeville Lakes Management District is at the bottom of this watershed and is concerned about the heath of their water resource. We took them thru a development process and completed a DNR approved comprehensive lake management plan in 2007. This planning effort combined with our water quality data and our inventory showed us work need to be done in this project area. This resource is very important to our local communities, and it makes since for us to focus our efforts in this areas because of the dymanic nature of how poor water quality impacts many facets of our economy.

B. Inventory and Targeting to Date: In a narrative describe methods and results of inventory and source targeting done to date to identify the most critical pollution sources within the project area that are responsible for causing impairments or threats to water quality. In addition, estimate the percent of inventory and targeting that has already been completed in the project area.

Please see (Attachment #1 for results of watershed inventory completed in this basin. (Attachment #2) shows a more refined estimate of what atleast 5 landowners need to address runoff issues. This number does not include the landowners who total up to the needed 10,000 acres of NMP. This is not inclusive of the remaining sites, that we will work with but a starting point reviewed in 2012. Our water quality information and our understanding of the challenges related to runoff in the watershed, tell us we need to continue to work with livestock producers to address the hard BMP's, but we there is not an overwhelming amount of them that would be consider major impactors based on our current understanding of sources, and the work we have already done to address many of the problem areas with in previous projects. Based on this and the relationship of NMP and the PI index, we feel our approach to try and deal with both of this issues makes sense in this watershed. We need to help producers, understand and manage both traditonal feedlot runoff issues, but recognize that we need to get landowners to understand basics of NMP and begin to apply principles of 590 or we will struggle to make nutrient reduction impacts in this watershed. We feel our water quality data is good evidence of this to date.

C. Additional Inventory and Targeting Needs: In a narrative describe additional inventory and source targeting that is needed, including quantitative and qualitative tools you will use to identify the most critical pollution sources within the project area that are responsible for causing impairments or threats to water quality. In addition, estimate the percent of inventory and targeting that will be completed after the grant is received.

NMP adoption will help landowners recognize and balance nutrient applicants and begin to understand dynamics of PI, in relation to upland sources. Feedlots and barnyards will be evaluated by technical staff to determine pre and post modeled reductions from livestock sites that have compliance issue (Barney/Bert models).

If we receive grant, we will begin by hosting a Town Hall type meeting, with targeting mailing going out to affected landowners to discuss project goals and opportunities. We will then approach known inventory sites to work with them on technical solutions, design work and contracting. During that time staff will be working on updated resource needs on other inventoried sites and begin project dialog with landowners. We will also, cross check landowners in project area, with Farmland Preservation Program participation to show opportunity to utilize resources to bring them into compliance. NMP marketing effort will be staff/mailed driven with existing staff focused on implementing NMP reaching out to landowners explaining them the needs and process. We will encourage landowners to take advantage of our landowner training program or work with consultants to accomplish this. Targeting will focus on sites, where NR 151 issues are existing and documented.

Question 4. BMP Cost-Effectiveness

In a narrative describe why the proposed management measures are a reasonable means to attain the project benefits based upon such factors as BMP effectiveness, site feasibility, available technical standards, practicality and available funding sources.

Getting landowners into compliance with NR 151 AG rules thru the lowest cost available BMP's is good business for tax payers and landowners. All BMP's will be designed to meeting NRCS technical standards. We will use our bidding process and/ or average cost analysis where necessary to assure cost effectiveness of the BMP. You will see a large focus on clean water work associated with sites, in many cases, especially the smaller animal sites, lower cost BMP's provide the best nutrient reduction benefits based on cost. There are limited financial resources for counties to access outside the TRM grant program. Access to sufficient amount of cost share dollars to push forward NMP planning are very limited. This grant will allow us access to those funds. Overall we feel our approach is based on good sound science based planning principles that will allow us to implement NR 151 related BMP's using the NRCS standards as our base.

Question 5. Implementation Strategy and Enforcement

A. Implementation Activities: In a narrative describe your strategy for: 1) contacting and educating farmers about the project; 2) conducting farm needs assessments and status reviews for performance standards and prohibitions; 3) timing and coordinating technical and financial assistance within the project period; 4) making mid-term progress assessments.

1) We have already done some follow up contacts, mailing and sites visits in 2012 in anticipation of this grant application. We will continue, if awarded with a Town Hall meeting, to announce project with targeted landowner mailing. 2) We have captured the basic needs related to NR 151 in our existing and updated inventory work (Attachments #1,#4). 3) If successful, this project will take priority for technical staff with expertise in the areas needed, while balancing it against existing workload. Having a secured funding source, allows us to move forward with planning, design and implementation in a more streamlined approach, versus not having the funding. 4) Mid-term project status review can be conducted by balancing existing known sources based on inventory with checklist and status updates. GIS and spreadsheet will be used to track progress.

B. Enforcement: In a narrative describe how local ordinances will be used when necessary to facilitate compliance. (Note: Your answer must be consistent with your claim for local enforcement multiplier points in Part III. of this application.)

Our approach to enforcement will be same as we have always done. Having rules promulgated in state law, and incorporated into local ordinances is as much about I/E as actual enforcement. We have a strong history using other TRM grants using reference to requirements found in state law and local ordinance to gain voluntary compliance. That will continue to be our relationship with these project funds. In the rare event, that we are not able to achieve some level of voluntary participation, we can use a stepped enforcement process here at the county level, as we have done in the past. Typically we do not need to move beyond the first official notice, to get landowners at the table talking. Having the cost share resources, makes all the difference in how this works. We have the tools necessary if needed. Our true success comes from our staff and our ability to get landowner to work with us. SPECIAL NOTE: The Columbia Land and Water Conservation Committee approved at their April 2, 2012 meeting to have the department move ahead with updating and revising Title 15, Animal Waste Management Ordinance to include the new additions to NR 151 and clarify the relationship to NMP as a stand alone requirement. I was told in 3/29/2012 email from Linda Talbot, that if I submit language changes that will be included in ordinance revisions, with application, they would take this into consideration if completed by September 2012. I assume the timeline to make these revisions will easily fall within those timeframes.

Question 6. Adaptive Management and Evaluation

A. Adaptive Management: In a narrative describe what method will be used for ongoing project management and adjustment.

We have a good idea based on our background work what we would like to accomplish with these funds and this project. Lead staff will be responsible for managing and balancing our workload, goals and timeline to keep us on task. If we notice changes that are needed to original plan and or dynamic changes, those changes will be discussed with DNR lead staff to discuss adjustments. As with any project, they are all adaptive and subject to change, we have a lot of experience in dealing with these situations. We have a strong history of success such as: priority watershed implementation, past TRM grants and contracted grant implementation thru NRCS as a TSP service provider for EQIP workload.

B. Evaluation: The applicant is required to provide a description of the modeled results or changes in pollution potential in the final project report. The project evaluation strategy will be based on comparing pre- and post-project changes in modeled pollutant loading to water resources or will be based on the quantity of units managed.

Modeling and Measures of Change

Pre- and post-project evaluation measures that the applicant will use to ensure success in meeting project goals: (check all that apply)

	Agricultural Performance Standard or Prohibition	Units of Measure	Recommended Measurement Method
<input checked="" type="checkbox"/>	Sheet, Rill and Wind Erosion	Acres meeting T	RUSLE-2 or wind erosion model
<input checked="" type="checkbox"/>	Tillage Setback	Feet of bank protected	count
		Number of farms	count
<input checked="" type="checkbox"/>	Phosphorus Index	Acres planned	count
<input checked="" type="checkbox"/>	Manure Storage Facilities: New Construction/Alterations	Number of facilities	count
		Number of animal units	count
<input checked="" type="checkbox"/>	Manure Storage Facilities: Closure	Number of facilities	count
<input checked="" type="checkbox"/>	Manure Storage Facilities: Failing/Leaking Facilities	Number of facilities	count
		Number of animal units	count
<input checked="" type="checkbox"/>	Process Wastewater Handling	Number of facilities	count
		Number of animal units	count
<input checked="" type="checkbox"/>	Clean Water Diversions in WQMA	Pollutant load reduction	BARNY Model
		Number of farms with diversions	count
		Number animal units	count
<input checked="" type="checkbox"/>	Nutrient Management on Agricultural Land	Acres planned	count
<input checked="" type="checkbox"/>	Prohibition: Manure Storage Overflow	Number of facilities	count
		Number of animal units	count
<input checked="" type="checkbox"/>	Prohibition: Unconfined Manure Pile in WQMA	Number of farms	count
<input checked="" type="checkbox"/>	Prohibition: Direct Runoff From Feedlot/Stored Manure	Pollutant load reduction	BARNY Model
		Number of facilities	count
		Number of animal units	count
<input checked="" type="checkbox"/>	Prohibition: Unlimited Livestock Access	Feet of bank protected	count
		Number of farms	count
	Other Priority for Agricultural Area		
<input type="checkbox"/>	Buffers	Feet of bank protected	CREP formula
		Number of farms	count
<input type="checkbox"/>	Streambank	Tons of bank erosion reduced	NRCS bank erosion formula
		Feet of bank protected	count
<input type="checkbox"/>	Other (specify)		

Question 7. General Support for Project and Consistency with Other Local Plans

Large-Scale Ag. TRM Grant Application

CY 2013 Funding

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TRM Grant Project Name:

Park Lake TRM Large 2013

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A. Local Support: Describe support for this project from other local, state and federal sources such as governmental units, interest groups, landowners and operators. Address general, staffing, and financial support.

The Columbia County LWCD has a very qualified technical staff, equipped to handle the technical and management needs of this project. As mentioned earlier, this is one of three priority focus areas, that were recognized in our 2006 revision to our County Land and Water Resource Management Plan. The Park Lake Watershed (including this HUC) has been a priority area since that time, we have used a series of DNR Lake Planning Grants to get watershed inventories and collect water quality data/concentrations/loads for this watershed. The Pardeeville Lakes Management Districts DNR approved Comprehensive Lake Management Plan (www.co.columbia.wi.us/ColumbiaCounty/lwcd/departments/programs/lake_planning) showcases the local value and interest of improving watershed mgmt in this watershed. We have a great working relationship with our local NRCS office and have a strong history of working together, sharing financial and technical resources where necessary. We have strong support for the work the LWCD does within Columbia County government. The County Board has continued to strongly support us helping us maintain basic technical staff levels, with reduced state and federal support. We have a strong history of working landowners and operators thru open communication.

B. Consistency with Other Resource Management Plans

Yes No

- ☒ ☐ The project implements a water quality recommendation from a locally-approved resource management plan, **other than** a plan or report identified under "Project Type Filter 1 or 2" (Part I.C.2), or a County Land & Water Resource Management Plan. (Acceptable examples include Smart Growth plans, local storm water management plans, regional water quality plans, or other watershed-based nonpoint source control plans not used to answer question in Part I. of this application).

Summarize the water quality recommendation. Describe the recommendation in relation to the goals of this proposed project. Cite the name and date(s) of publication of the document.

<http://www.co.columbia.wi.us/ColumbiaCounty/Portals/16/Park%20Lake%20Comprehensive%20Management%20Plan.pdf>

Chapters 5,6,7,8 of this DNR approved Comprehensive Lake Management Plan For Park Lake shows the relationship of this resource to the watershed and the health of the resource. Nutrient loading and reducing the amount of P in concentration in the Fox River and its tributaries is a priority outlined in this plan.

Question 8. Budget and Grant Needs

A. Complete the table below to identify how local assistance activities required under this project will be funded and staffed.

1. Local Assistance Activity and Funding Sources

Activities		Complete With Funding From:		Source of Staff
		* This Grant	Other	
1.	Contacting farmers	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	LWCD
2.	Education/outreach	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	LWCD
3.	Inventory	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	LWCD
4.	Targeting sources	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	LWCD
5.	CSA development	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	LWCD
6.	Design & installation	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	LWCD We would plan to charge 5% of construction costs for Design work as outlined in rules.
7.	Project management	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	LWCD
8.	Mid-term evaluation	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	LWCD
9.	Final reporting	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	LWCD
10.	Enforcement	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	LWCD
11.	Other	<input type="checkbox"/>	<input type="checkbox"/>	LWCD
12.	Other	<input type="checkbox"/>	<input type="checkbox"/>	LWCD

* Note: State statutes prohibit DNR from reimbursing governmental units for certain activities under a local assistance grant. This includes BMP design and certain educational costs. See instructions for more information.

B. Project Budget

Complete Table 1 to identify how much funding is requested under this grant for local assistance activity and the amount of funding and sources that will be used for the local share. The maximum state cost-share is 70% for local assistance activities. However, the portion of the grant that can be used for local assistance activity may not exceed 10% of the grant amount allocated for best management practices below in Table 2.

1. Local Assistance Needs and Budget

Activities	Estimated Total Local Assistance Costs (\$)	Amount of Local Assistance Grant Request State Share (\$)	Amount From Local Share (\$)	Identify Source of Local Share
Sum of Activities in Above Table (A.1)	280,000	37,276	247,724	County Levy Staff Funds

Complete Table 2 to show how much best management practice (BMP) cost sharing is needed for the project, the amount being requested under this grant and other sources of cost sharing that will be used for the local share. The maximum state cost share is 70% for best management practices (90% for economic hardship).

2. Best Management Practice Construction/Installation Needs and Budget

Best Management Practices	Estimated Total BMP Costs (100% \$)	Amount of Grant Request (up to 70% \$) = State Share	Amount From Landowner & Other Sources (min. 30% \$) = Local Share	Identify Other Cost-Share Sources
Structural Practices	275,380	192,766	82,614	
Cropping Practices	180000	180000	0	Flat rate 18 acre
Total	455,380	372,766	82,614	

3. Grant Request Summary (This table will fill automatically from responses in Tables 1 and 2.)

Summary	Local Assistance Grant Request	Cropping Practices Grant Request	Structural Practices Grant Request	Total Grant Request
Subtotals & Grand Total	37,276	180000	192,766	410,042

Describe the quality of data used in preparing these budget estimates for cost-share need. Identify whether the needs are based on specific knowledge of the targeted farms in the project area or are based on more generalized estimation methods.

Attachment #2) shows budget breakdown and details of how we arrived at these numbers and cost estimates. We demonstrated specific costs associated with 5 operations and then did more generalized lumping for other sites in project area. NMP cost based on inventory data and acreage of known NMP planned acres in GIS database, there will multiple landowners who own this acreage.

Question 9. Bonus Section: Completion of this part of the application is optional.

A. Public Water Supply Protection

Yes No

- ☐ ☒ The project water quality goals identified above relate to the reduction of nonpoint source contaminants in community or non-community public drinking water supplies. This includes any of the following: Municipal water supplies governed by chs. NR 809 and 811; Other-Than-Municipal (OTM) water supplies governed by chs. 809 and 811; Non-Transient water supplies governed by chs. NR 809 and 812; Transient water supplies governed by chs. NR 809 and 812.

1. If "Yes" **and** this project is primarily to protect groundwater resources, then check "a" or "b" below. (You will need assistance from your DNR District NPS Coordinator or Water Supply Specialist to answer).

- ☐ a. Check this box if the project is located within the wellhead protection area of a municipal well, **or** within 1,200 feet of a municipal well for which a wellhead protection area is not delineated, **or** within 1,200 feet of an "Other-Than-Municipal (OTM)" water supply well, or within 1,200 feet of a non-transient water supply well.
- ☐ b. Check this box if the project is located within 200 feet of a Transient water supply well.

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2. If "Yes" **and** this project is primarily to protect surface waters, then check the box next to the drainage area where the project is located (see **Attachment E** for map).

- | | |
|---|---|
| <input type="checkbox"/> Pike River and Creek | <input type="checkbox"/> Twin Rivers |
| <input type="checkbox"/> Root River | <input type="checkbox"/> Kewaunee and Ahnapee Rivers |
| <input type="checkbox"/> Oak Creek | <input type="checkbox"/> Menominee River |
| <input type="checkbox"/> Milwaukee River | <input type="checkbox"/> Fish Creek |
| <input type="checkbox"/> Sauk Creek | <input type="checkbox"/> St. Louis and Nemadji Rivers |
| <input type="checkbox"/> Sheboygan and Onion Rivers | <input type="checkbox"/> Lake Winnebago |
| <input type="checkbox"/> Manitowoc River | |

B. Field Evaluation Monitoring

Yes No **Monitoring** (not eligible for cost sharing under the DNR TRM Grant Program at this time)

- ☐ ☒ The project evaluation strategy will provide pre- and post-project information from water resource monitoring. If "Yes," check all that apply below.

- ☐ ☐ 1. A one-page summary of the monitoring strategy is attached. This summary must be reviewed and signed by a DNR Water Quality Biologist.

- ☐ ☐ 2. The project will evaluate the in-stream physical habitat, fisheries, biological, or chemical conditions.

- ☐ ☐ 3. The project will evaluate BMP pollution reduction effectiveness (e.g., inlet/outlet monitoring).

Part III. Eligibility for Local Enforcement Multiplier

Completion of Part III is optional. However, an applicant can increase the final project score by qualifying for a project multiplier.

Please carefully review the instructions to complete this part of the application.

Note: Responses to Column D below must match responses to "Project Information" Section C.

Column A State Performance Standards & Prohibitions		Column B Check box if the local ordinance provides full coverage for the state standard or prohibition listed in Column A	Column C Check box if the local ordinance provides partial coverage for the state standard or prohibition listed in Column A	Column D Check box if funding from this TRM project grant will be used to address the state standard or prohibition listed in Column A	Column E Provide citations for each ordinance provision that you are claiming a multiplier for under Column B or C
1.	Sheet, rill, and wind erosion (NR 151.02)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.	Tillage setback (NR 151.03)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3.	Phosphorus index (NR 151.04)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.	Manure storage facilities-new/significant alterations (NR 151.05(02))	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Title 15 Section 15-1-3
5.	Manure storage facilities-closure (NR 151.05(03))	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Title 15 Section 15-1-3
6.	Manure storage facilities-existing failing/leaking (NR 151.05(4))	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Title 15 Section 15-1-3
7.	Process wastewater handling (NR 151.055)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
8.	Clean water diversions (NR 151.06)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
9.	Nutrient management (NR 151.07)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
10.	Prohibition: Prevention of overflow from manure storage facilities (NR 151.08(2))	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Title 15 Section 15-1-3

11.	Prohibition: Prevention of unconfined manure piles in water quality management areas (within 300 ft. of a stream, 1000 ft. of a lake, or areas where the ground water is susceptible to contamination) (NR 151.08(3))	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Title 15 Section 15-1-3
12.	Prohibition: Prevention of direct runoff from a feedlot or stored manure into waters of the state (NR 151.08(4))	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Title 15 Section 15-1-3
13.	Prohibition: Prevention of unlimited livestock access to waters of the state where high concentrations of animals prevent the maintenance of adequate sod cover or self-sustaining vegetation (NR 151.08(5))	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Copies of ordinances for which credit is taken in this section are: (choose at least one)

- ☒ Found at this website (provide <http://www.co.columbia.wi.us/columbiacounty/portals/2/ordinance/title15.pdf> most direct web page URL);
- ☐ Attached to this application;
- ☐ Already submitted with another application for CY 2013 funding.

Optional Additional Information

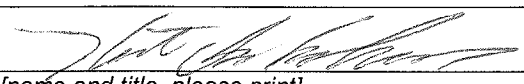
Is there additional information that will add to the understanding of this project? If so, describe here.

The Columbia County Land and Water Conservation Committee approved at its April 2, 2012 regular meeting to have the LWCD develop and modify the existing Title 15 Animal Waste Management Ordinance to include the updated additions of the most recent NR 151 rule, to include: 1) Process Wastewater Handling 2) Tillage Set back 3) PI Index and 4) NMP as a stand alone condition of compliance. The committee has approved this and agreed to move forward with the draft changes. Draft changes will be worked on in next several months, it is anticipated that these changes and inclusions will be approved and incorporated into the new ordinance before Fall of 2012. We did not claim that under Part III., but it is very likely that these changes will be made before funds from this grant become available.

Applicant Certification

A Responsible Municipal Representative must sign and date the application form prior to submittal to the DNR.

I certify that, to the best of my knowledge, the information contained in this application and attachments is correct and true.

Signature of Responsible Municipal Representative	Date Signed
	4/12/2012
[name and title, please print] Kurt R. Calkins, Director of LWCD	

- ☒ Completed Municipal Responsibility Resolution (signed in blue ink) (see **Attachment I**) is attached.

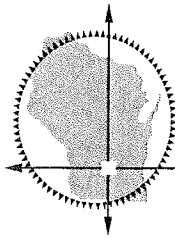
Submittal Directions

To be considered for funding, provide the following for each application submitted:

- One copy of the completed application form [DNR Form 8700-300 (R 1/12)] with original signature in blue ink;
- Three additional copies of the completed, signed application form;
- One electronic copy of the completed application form in **Microsoft Word format only** plus all attachments and maps on CD.

All application materials must be postmarked by midnight **April 16, 2012**.

Send to: Department of Natural Resources
Attn: Linda Talbot, WT/3
101 South Webster Street



COLUMBIA COUNTY

Land & Water Conservation

608-742-9670
FAX: 608-742-9840
E-MAIL: land.conservation@co.columbia.wi.us
WEBSITE: www.co.columbia.wi.us

120 West Conant Street
P.O. Box 485
Portage, WI 53901

TRM Grant Enabling Responsibility Resolution

WHEREAS, the Columbia County Land and Water Conservation Department is interested in applying for and obtaining a TRM grant from the Wisconsin Department of Natural Resources for the purpose of implementing measures to control agricultural nonpoint source water pollution (as described in the application and pursuant to ss.281.65 or 281.66, Wis Stats., and chs. NR 151,153 and 155, Wis. Adm. Code) and

WHEREAS, a grant award that includes a request for access to cost share funds is being requested to carry out the project and or projects and

WHEREAS, the Columbia County Land and Water Conservation Department has staff resources in place to carry out project deliverables and to secure required local match to cost share grant funds per program guidelines, and

THEREFORE BE IT RESOLVED, that the Columbia County Land and Water Conservation Committee, authorizes Kurt R. Calkins, Director of the Columbia County Land and Water Conservation Department to act on behalf of Columbia County to submit an application to the Wisconsin Department of Natural Resources for TRM grant funding consideration and complete necessary grant related activities such as:

- Signing and Submitting required contract documentation
- Submitting reimbursement claims upon completion
- Take necessary action to undertake, direct and complete the approved project

BE IT FURTHER RESOLVED that the applicant will comply with all state and federal rules and regulations relating to this project, the cost-share agreements and nonpoint source water pollution.

Adopted by Columbia County Land and Water Conservation Committee

Adopted on 2nd day of April, 2012

I hereby certify that the foregoing resolution was duly adopted by, and entered into the official minutes of the Columbia County LWCC at a legal meeting on 4/2/2012.

Authorized Signature: Robert L. Hamel
Robert Hamel, Chair LWCC



COLUMBIA COUNTY

Land & Water Conservation

Attachment #1

608-742-9670
FAX: 608-742-9840
E-MAIL: land.conservations@co.columbia.wi.us
WEBSITE: www.co.columbia.wi.us

120 West Conant Street
P.O. Box 485
Portage, WI 53901

Park Lake TWM Large 2013 Final Report

DNR Lake Planning Grant #LPL-1072-06

The Goal

Watershed Inventory

The Columbia County Land and Water Conservation Department received a \$10,000.00 grant from the DNR beginning Oct 1, 2005. The grant was focused on completing inventory work on the Park Lake Watershed. Park Lake has recently been placed on the 303(d) list of impaired waters due to non-point source pollution. This grant has allowed us to begin one of the first steps to help the Pardeeville Lakes Management District in the development of a strategic plan to improve water quality conditions in Park Lake.

In our grant application we laid out the following specific goals:

- 1) To utilize our GIS system to develop a landowner database, delineate the watershed and develop data sets based on inventory data that was collected.
- 2) We set out to complete an inventory of the Park Lake watershed with the following criteria as our starting point:
 - a. Identify and locate all livestock operations in the watershed
 - b. Identify livestock operations that fall within the WQMA as referenced in NR 151.
 - c. Determine compliance of livestock operations with water quality performance standards found in NR 151.
 - d. Locate and identify sensitive areas
 - e. Determine areas in need of riparian buffers
 - f. Determine areas that would be potential wetland restoration sites
 - g. Locate obvious areas of gully/soil erosion

The Results

Enclosed with this report is copy of the inventory results. We have provided you with a hard copy of the data and also a CD with this data, per our agreement in the grant contract. The inventory began in late 2005 and was completed at the end 2006. Along with copies of the data I have included a summary of interpretation of the data that focuses on relationships and findings that we found were very important to our future planning efforts.

We have included GIS developed Maps that show the following relationships from our data:

- 1) Location of all livestock operations
- 2) Wetlands and Highly Erodible Soils (Sensitive Areas)

- 3) Farmland Preservation Program acres
- 4) Acres under NPM 590 plan
- 5) Locations of potential wetland restoration sites
- 6) Existing manure storage structure locations
- 7) CREP eligible buffer sites

Our GIS database that we have utilized throughout this process contains the following data layers to help us interpret and use the data:

- 1) Tax parcel
- 2) Livestock sites
- 3) Manure storage structure locations
- 4) Township range
- 5) Section
- 6) ¼ Section
- 7) Roads
- 8) Soils
- 9) Erosion sites (Aerial Interpretation)
- 10) 4' Contour
- 11) Potential WRP
- 12) Watershed boundary
- 13) Hydrology
- 14) DNR Map of Watersheds
- 15) Parcels adjacent to water
- 16) Zoning
- 17) Wetlands
- 18) Nutrient Management Plans
- 19) Farmland Preservation Program
- 20) CREP 150'
- 21) Permitted animal waste structures
- 22) Location of existing BMP's
- 23) Land Cover
- 24) Columbia County High Resolution Aerials (Black and White)
- 25) NAIP –1meter resolution color
- 26) Original Vegetation

In 2006, we spent sometime taking video footage of the entire existing shoreline and its condition. This video is now being converted to DVD for future reference for lake improvement efforts.

Conclusion and Future Use:

Upon conclusion of this inventory process we have found it extremely useful and see it as a great asset to help guide not only our departmental program emphasis but to help guide future planning efforts for the restoration of Park Lake. The Park Lake watershed is identified in our Columbia County Land and Water Resource Management Plan as an area of emphasis. This

emphasis has allowed us to already begin the effort of working with these identified resource needs through existing NPS programs. We have already addressed a number of non-compliant agricultural operations through programs such as our animal waste management ordinance and the NRCS EQIP program. In 2007 we will be completing our first TRM project in this watershed. We hope this inventory process will provide us the information needed to actively pursue more TRM funded projects to help us address some of our nutrient loading issues in this watershed.

Throughout this process we have been updating and working with the Pardeeville Lakes Management District through public presentations and their regular board meetings or other special informational meetings. This past fall members of the Pardeeville Lake Management District Board participated in a watershed tour which gave them hands on experience with the issues facing them in this watershed. The culmination of this inventory will be the inclusion of this information in the lake management planning effort ongoing for Park Lake. This information will help us truly access both the environmental and financial issues that need to be overcome to improve the impacts the watershed has on Park Lake.

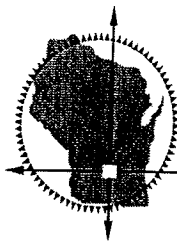
We hope you find the data interpretation summary useful in understanding some of the relationships and challenges that we face in the restoration of this watershed. I have included the grant reimbursement payment request information with this final report. Our total grant award was for \$10,000.00. We agreed to provide a minimum match of \$3335.00 in staff resources. Supporting information includes a monthly breakdown of staff resources spent on this project. We did not include any additional costs for office space, printing, mailing, vehicle use, or other associated resource costs because our staff costs totaled \$19,964.40. We are requesting the \$2500.00 remaining balance with this final request.

If you have any questions, please feel free to contact me.

Sincerely



Kurt R. Calkins
Director of Land and Water Conservation
Columbia County



Summary Interpretation of Inventory Data

Park Lake Watershed

The completion of this planning grant and the culmination of these various data sets related to this inventory have provided us the opportunity to look at and compare this data. Following is a summary and interpretation of some of the data in regards to watershed improvement efforts.

Direct Runoff From Livestock Operations: A total of 59 livestock operations were inventoried. A total of 14 of them have obvious runoff issues related to NR 151. These 14 operations include a total animal count of 1432 Dairy/Beef Cows. 12 of these direct runoff issues are ranked as either medium or high in regards to environmental degradation.

Unlimited Cattle Access to Stream/Adequate Sod Cover Maintained: A total of 9 out of the 59 livestock operations have cattle with unconfined access to water. 6 out of the 9 are not maintaining adequate sod and the cattle should be removed from the stream.

Existing Rill or Gully Erosion Present: This question was asked to all 59 operations. 50 of the 59 felt that they had no erosion taking place anywhere. We think this is worth noting, because it holds true to the idea that many operators see some level of erosion as normal and do not associate it with being a problem. The reality is, that in a watershed of this size, and with phosphorus level exceeding high in many of the soils, even the smallest amount of erosion and sediment delivery can have a large impact. More education and understanding is probably needed with the agricultural community.

Existing Manure Storage Structures: A total of 8 out of 59 operations have a manure storage structure. 2 of these structures need to be abandoned, 5 of them have potential problems and 4 of them are in need of upgrades.

Utilization of Manure Stacks: 23 of the 59 livestock operations stack manure for a period of time. 5 of them stack manure within the NR 151 WQMA adjacent to a stream/lake or water body.

Is Clean Water Diverted from Feedlot: 14 of the 59 livestock operations were adequately diverting clean water from their feedlot. 37 of them are in need of some form of clean water diversion. 7 of the operations are in need of earthen surface water diversion and 35 are in need of roof runoff diversions (5135').

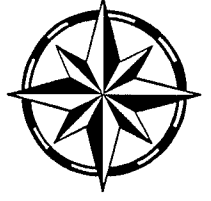
Existence of a 590 Nutrient Management Plan: Only 4 of the 59 livestock operations have a certified 590 NPM plan. The remaining 55 operations need to develop a 590 NPM plan.

Updated Conservation Plan to meet "T": Only 11 of the 59 operations inventoried were aware of their conservation plan, and new it was updated. The remaining 31 operators were not aware of the status of their plan. It is likely that many farms are meeting T without an updated plan, but it is also likely that just as many operations are not meeting T because they are not referencing a conservation plan. This will continue to be a concern as the demand for corn grows. We also realized that a high percentage of our highly erodible sites were directly adjacent to our sensitive areas.

Livestock Populations in Watershed: It was determined that there are about 1920 dairy animals in the watershed. This represents 97% of the reported high/low herd range. These 1920 dairy exist on 26 individual operations. There are 21 operations housing 1612 Beef animals in the watershed. There are 401 hogs and about 181 sheep. There are numerous other smaller populations of horses, dogs and other smaller scale animal operations in the watershed.

Park Lake Watershed Livestock Sites

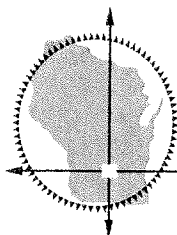
2006 Livestock Inventory Based on Administrative Rule NR151



Legend

- 2006 Park Lake Livestock Sites
- Hydrology
- Roads
- Boundary

1:104,716



COLUMBIA COUNTY

Land & Water Conservation

608-742-9670
FAX: 608-742-9840
E-MAIL: land.conservation@co.columbia.wi.us
WEBSITE: www.co.columbia.wi.us

120 West Conant Street
P.O. Box 485
Portage, WI 53901

Park Lake TRM Large 2013
HUC # 040302010101

TRM Practice and Cost Estimate List

Potential Site Ho

-Roof Gutters 160'	\$1,920
-Diversion 180'	\$1,260

Total- \$3,180

Potential Site Ko

-Roof Gutters 200'	\$2,400
-Diversion 100'	\$700
-Heavy use areas	\$12,000
-Waste Transfer 200'	\$5,000
-Buffer	\$10,000

Total- \$30,100

Potential Site Te

-2 Gully Control Structures	\$25,000
-Diversion 300'	\$2,100

Total- \$27,100

Potential Site Ol

-Watering facilities	\$5,000
-Grazing Plan/heavy use/fencing	\$5,000

Total- \$10,000

Potential Site Gl

-Storage abandonment/repair	\$5,000
-----------------------------	---------

Total- \$5,000

Other sites in watershed potential practices

-Watering facilities	
-Grazing Plan/heavy use/fencing	
-Diversions, terraces, roof gutters	
-Waterways	

Total- \$200,000

Total for BMP Conservation Practices	Total Cost	\$275,380
	70% CS	<u>\$192,766</u>

Cropland Estimated NMP 10,000 ac & \$18/ac	Total	<u>\$180,000</u>
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Force Account Work Costs (Local Assistance Funding 10%)	<u>\$37,276</u>
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Total TRM Grant Request	\$410,042.00
-------------------------	--------------

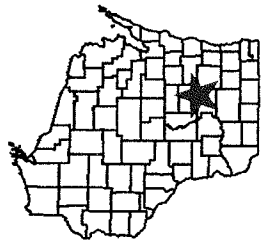
Attachment #3

HVC # 040302010101
































Map created on Mar 22, 2012

Scale: 1:111,912

[illegible]

Legend

- | | | |
|-----------------------------|-------------------------------------|---|
| Navigability Determinations | Navigable |  |
| | Not Navigable |  |
| | Outstanding and Exceptional Streams |  |
| | Exceptional |  |
| | Outstanding |  |
| | Local QA In Progress |  |
| | Local QA Data Source Conflict |  |
| | Outstanding and Exceptional Lakes |  |
| | Exceptional |  |
| | Outstanding |  |
| Local QA In Progress | Local QA In Progress |  |
| | Local Data Source Conflict |  |
| | Impaired Waters Lines |  |
| | Impaired Waters Areas |  |
| | NPS Rank Lines |  |
| | High Stream |  |
| | Medium Stream |  |
| | Low Stream |  |
| | Not Ranked |  |
| | NPS Rank Areas |  |
| NPS Rank Areas | High Lake |  |
| | Medium Lake |  |
| | Low Lake |  |
| | Not Ranked |  |
| | Major Highways |  |
| | Interstate |  |
| | State Highway |  |
| | U.S. Highways |  |
| | County Roads |  |
| | |  |

PARK LAKE TAM LAKE 2013

Attachment
#4

H₂O QUALITY SAMPLING REPORT

HUC 040302010101:

This federal hydrological unit, named Sand Spring creek – Fox River, exist within the Swan Lake Watershed (UR 15) watershed covering 942.88 acres.

Swan Lake Watershed (UR 15):

The Swan Lake Watershed consists of 80.61 sq. miles with 1130.04 stream miles and 942.88 lake acres including Swan and Park lakes.

Park Lake Description:

Park Lake is a 312 acre (0.49 sq. mi.) shallow warm water impoundment of the Fox River, located in the Village of Pardeeville and the Town of Wyocena, in Columbia County. The volume of Park Lake is 2,187 acre-feet (Kammerer, 1996). Park Lake is physically divided into a large, shallow east basin and a smaller, but deeper west basin. It has a maximum depth of 27 feet with an average depth of 7 feet in the eastern basin and 12 feet in the western basin (Kammerer, 1996; Park Lake Committee, 1990).

During 2007-2010 Columbia County began collecting and compiling water quality and discharge data in portions of the Park Lake watershed. Samples and measurements were taken about every two weeks at the sites below above and were taken between the dates of 7/21/2009 and 11/15/2010 at five tributaries a site in the Park Lake watershed, site two proved to be a poor monitoring location and was discontinued.

Background and Water Quality Results:

In 2007 Columbia County began collecting and compiling water quality and discharge data in portions of the Park Lake watershed. Samples and measurements were taken about every two weeks at the sites noted above and were taken between the dates of 3/13/2007 and 11/1/2010 at five tributaries sites in the Park Lake. Site PL 02 proved to be a poor monitoring location and was discontinued.

The Total Phosphorus or TP median concentrations were all above the DNR phosphorus standard of 75 µg/l for wadeable streams. TP concentrations ranged from 39-173 µg/l at site PL01, 59-247 µg/l at PL02, 11-394 µg/l at PL 03, 61-320 µg/l at PL 04, 33-374 at PL 05, and 70- 430 µg/l at PL 06. (Figure 4).

→ [Above P ug/L Goal NA 102]

In summary:

In the Park Lake watershed, more specifically in **HUC 040302010101** monitoring indicates polluted agricultural runoff. The watershed water quality monitoring indicates extensive problems with high phosphorus, nitrates, and chlorides. The Columbia County Land and Water Conservation Department has conducted a NR151 Inventory of the Livestock operations in the Park Lake Watershed identifying the location of the necessary soft and hard best management practices required by NR 151. Although this large scale grant does ask for some traditional BMP work to address barnyard runoff, the numbers of sites requiring traditional barn yard runoff best management practices are very low. These types of practices are very important and remove the runoff associated with runoff events. Despite this, extensive quantifiable water quality issues exist. The problems associated with runoff events can be handled very well with hard and soft BMP's. Developing a watershed wide program aimed at obtaining sound field scale nutrient management plans for livestock and crop and grain operations producers will be the first step at

implementing conservation that can reduce baseflow concentrations that result in the bulk of the TP load to a meaningful level that can begin to meet the state standards of 75 mg/l.

Due to this reality the CCLWCD feels large scale accurate NMP are necessary to consider field scale management as the second phase of watershed management getting at the soluble P losses in order to lower the base flow P levels that will make the largest difference in lowering the average P concentrations in this watershed.

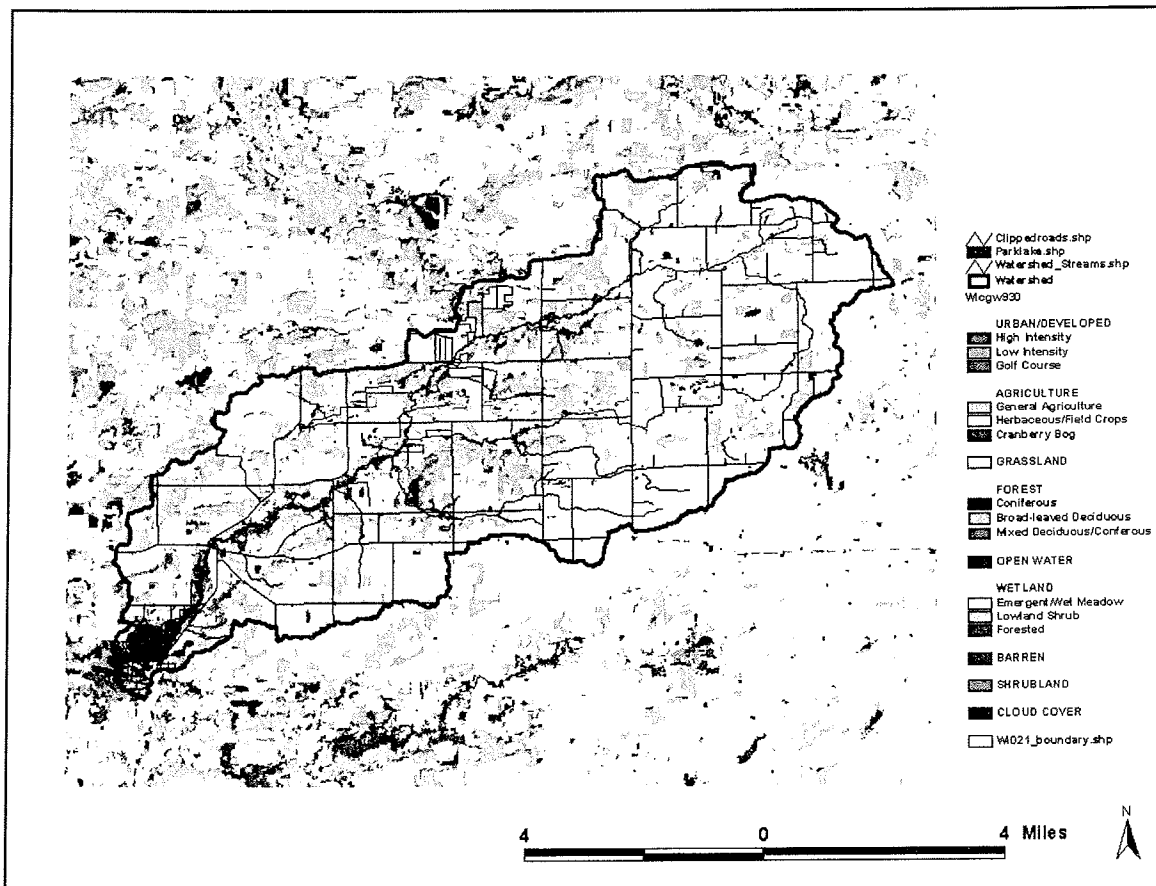


Figure 1. Park Lake Watershed Land Use Map



Figure 2. Park Lake Sampling Locations and Sub Watersheds

Table 1. Sampling Location Road Crossings and Stream Name

Name	Road Crossing	Stream Name
PL 01	Highway 22	Outlet
PL 02	Highway 33	Fox River
PL 03	Highway 44	Fox River
PL 04	Larson Road	Sand Spring Creek
PL 05	Ross Road	Fox River
PL 06	Highway E	Fox River

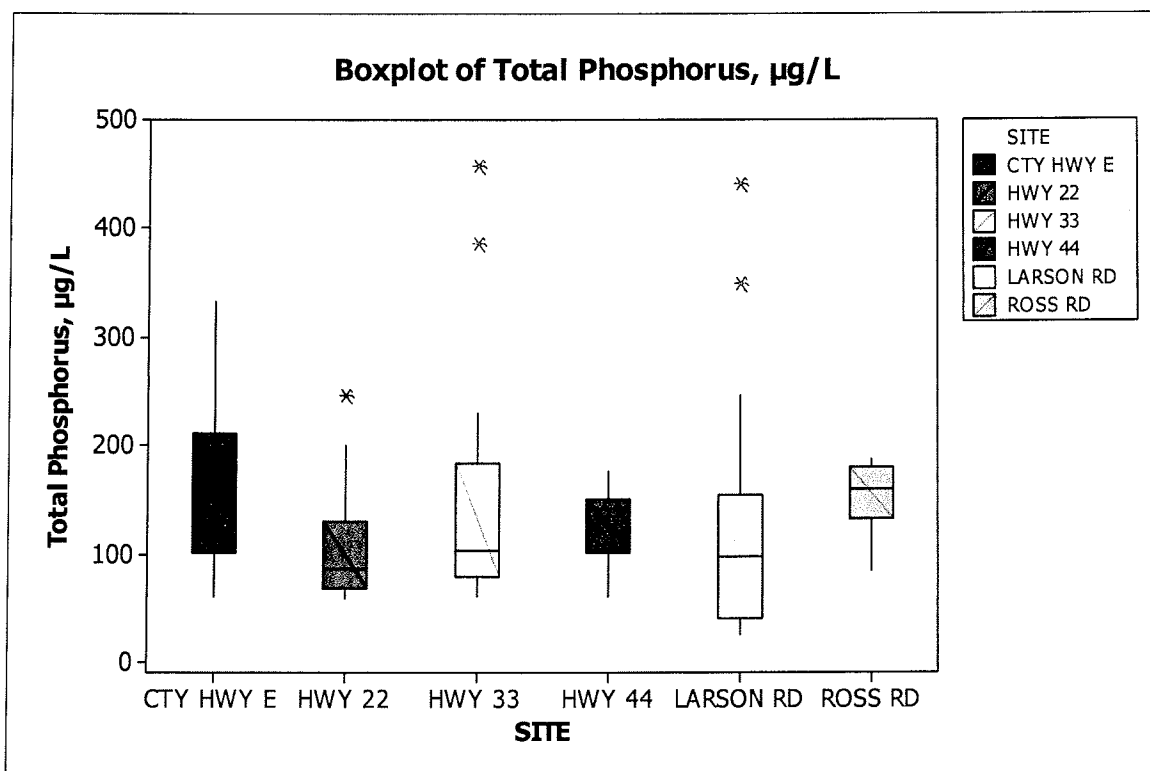
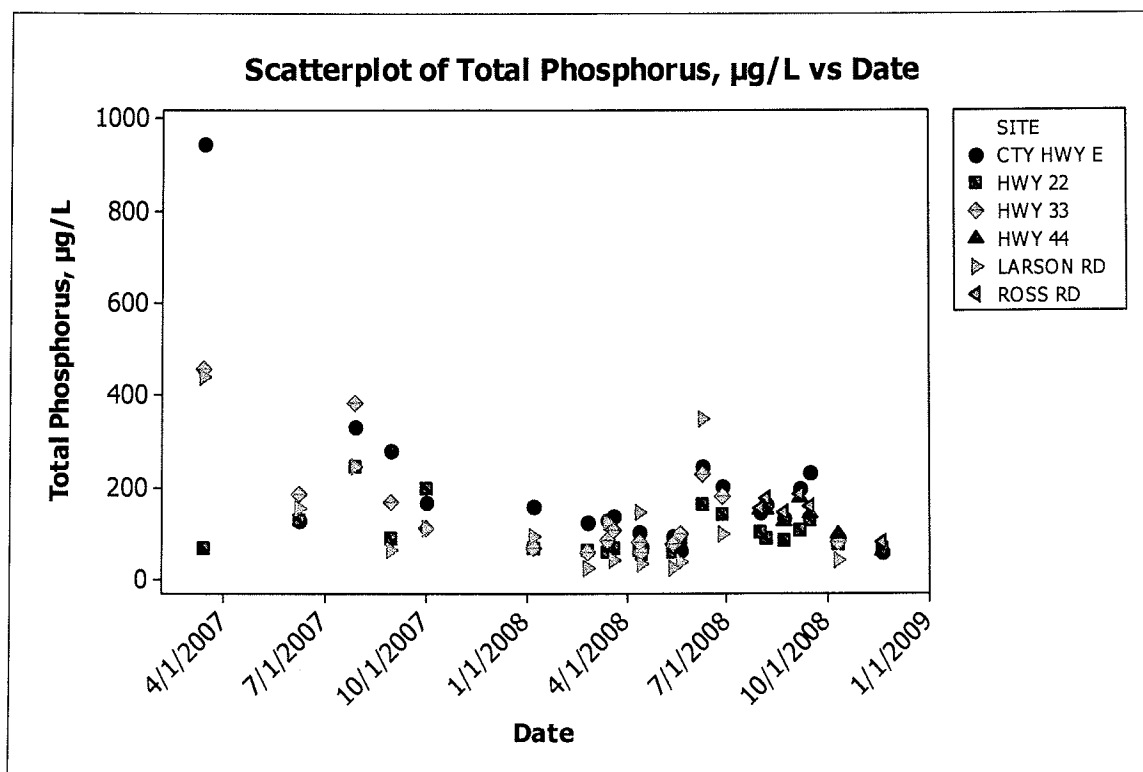


Figure 3. Park Lake Watershed Total Phosphorus Concentrations Scatter plot and Box plot (2007-2009)

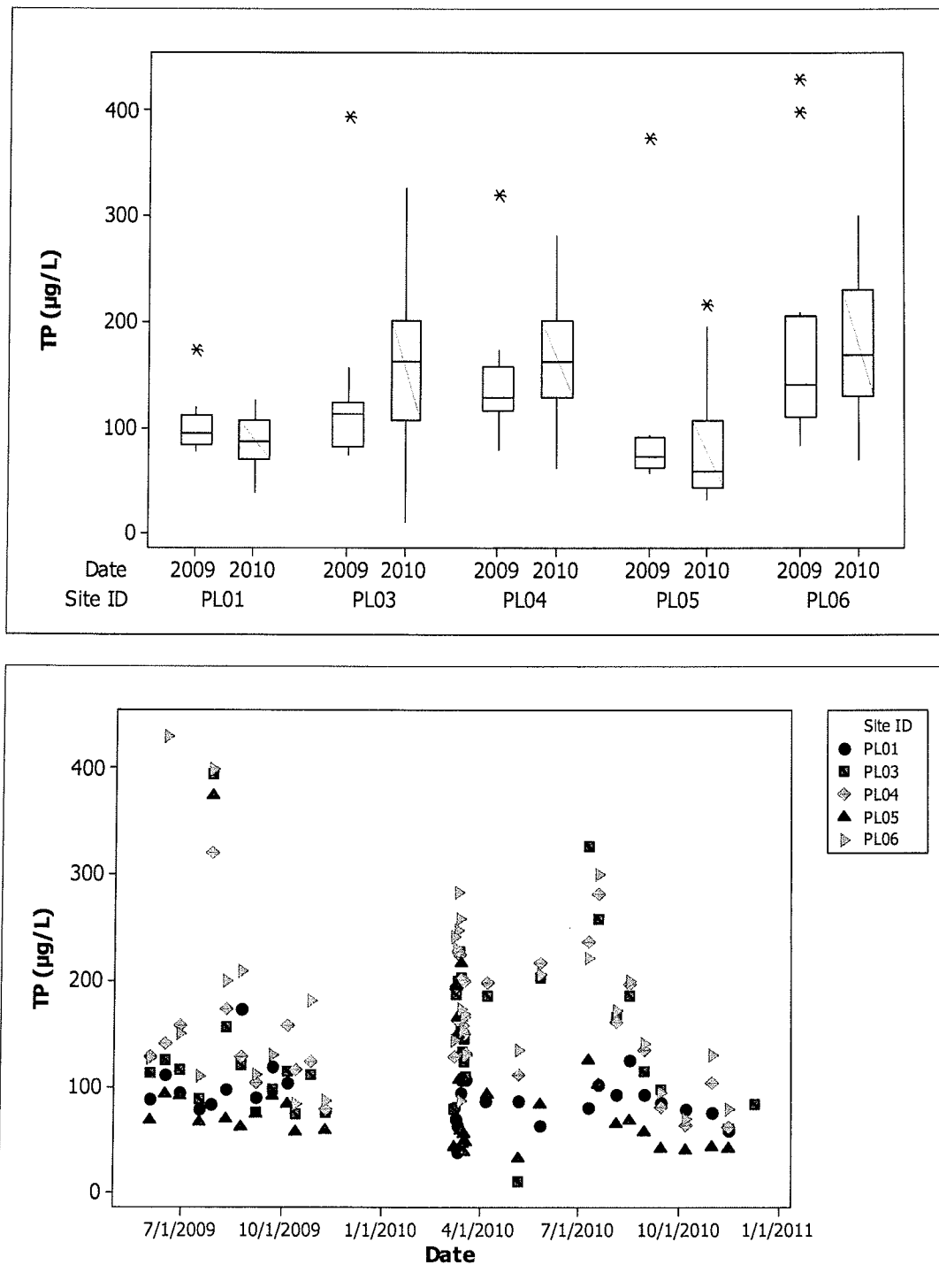


Figure 4. Park Lake Watershed Total Phosphorus Concentrations Scatter plot and Box plot (2009-2010)

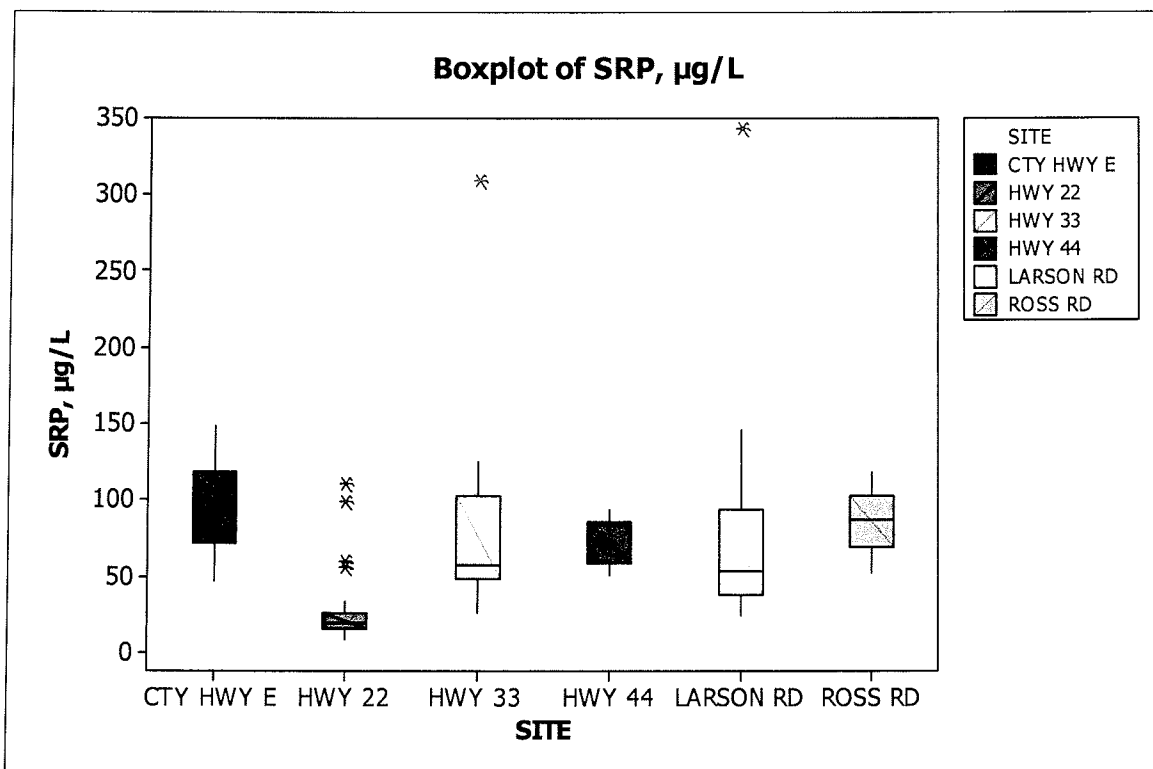
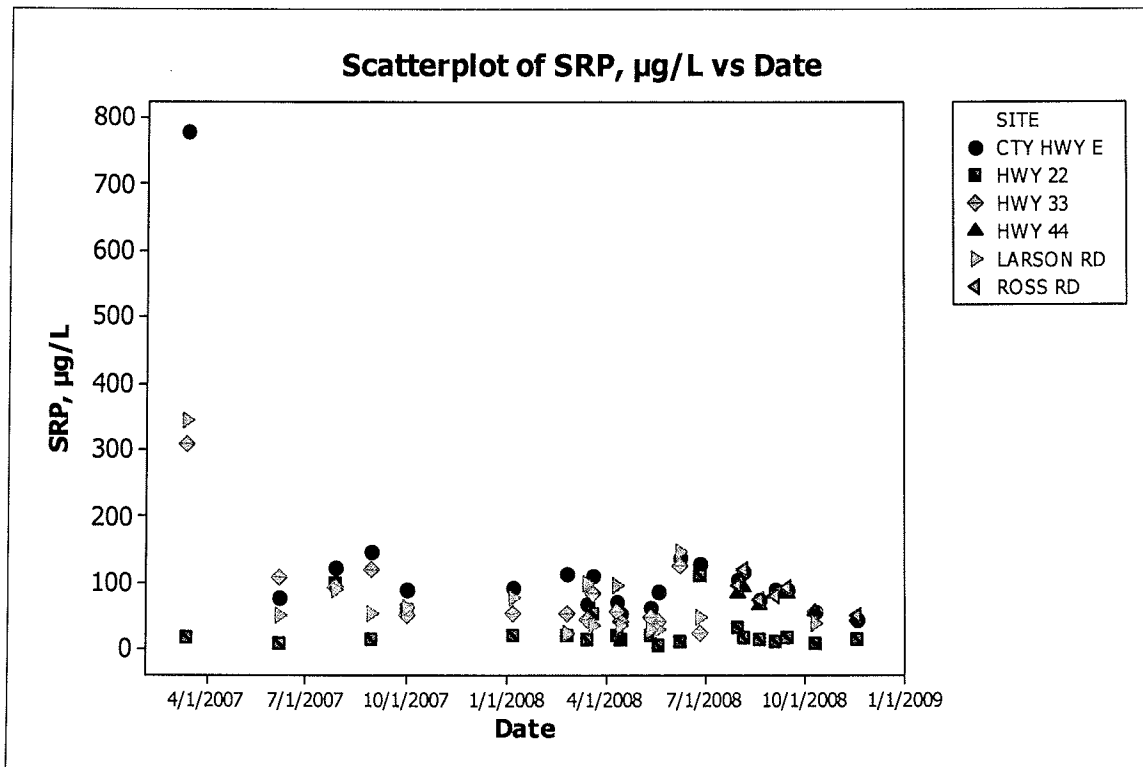


Figure 5. Park Lake Watershed Soluble Reactive Phosphorous Concentrations Scatter plot and Box plot (2007-2009)

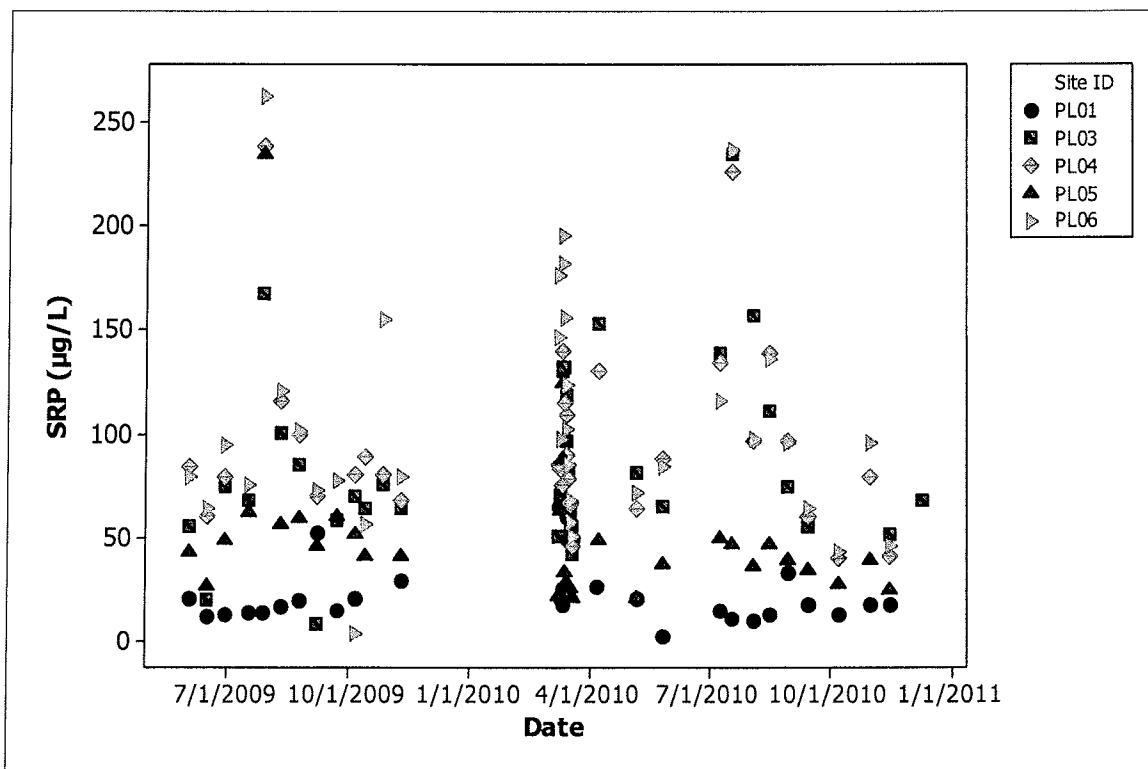
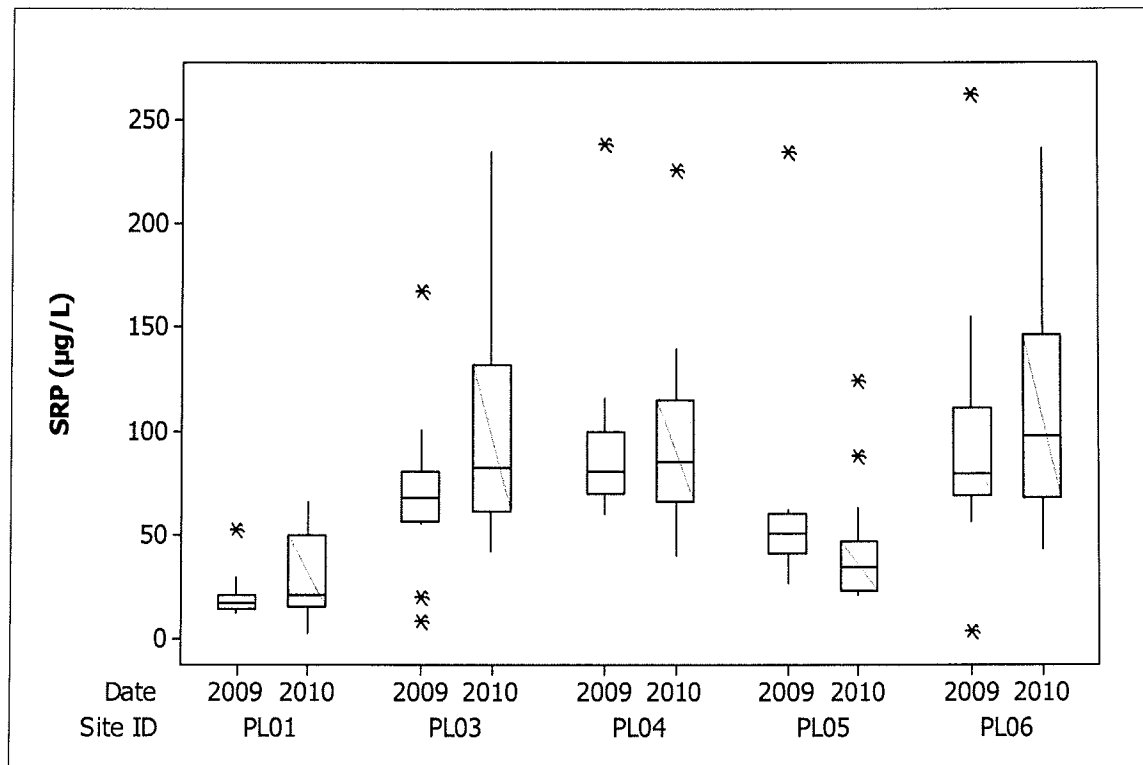


Figure 6. Park Lake Watershed Soluble Reactive Phosphorous Concentrations Scatter plot and Box plot (2009-2010)

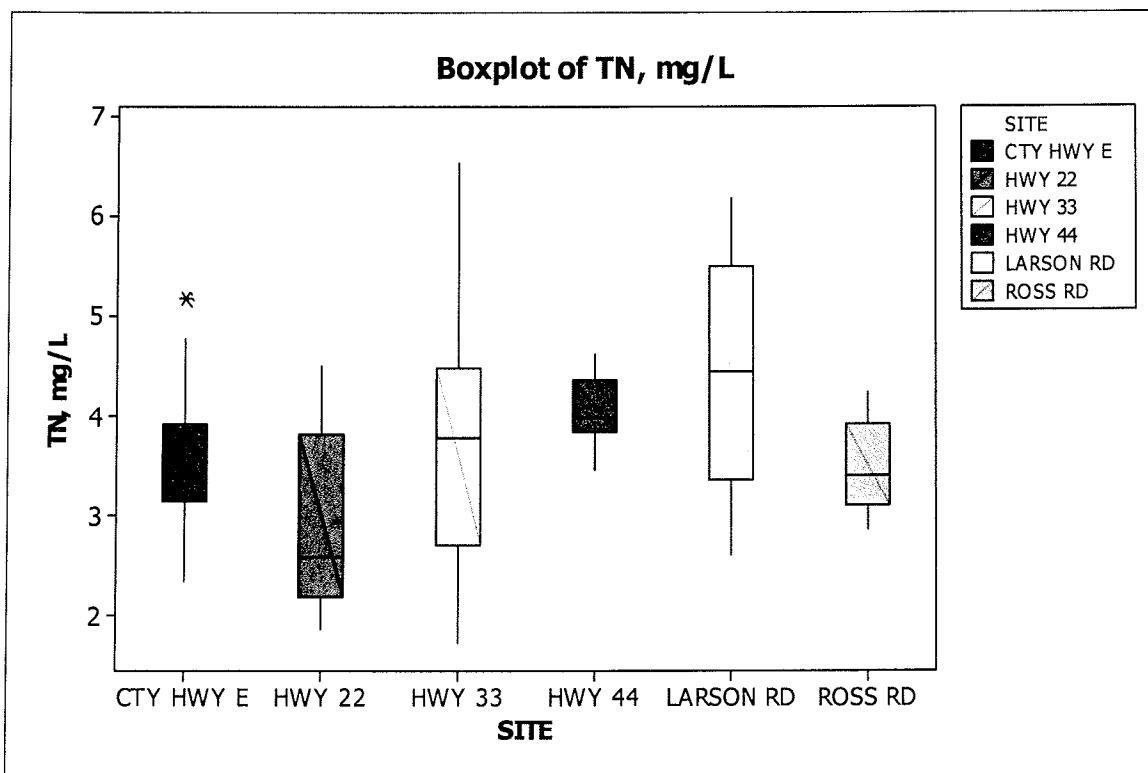
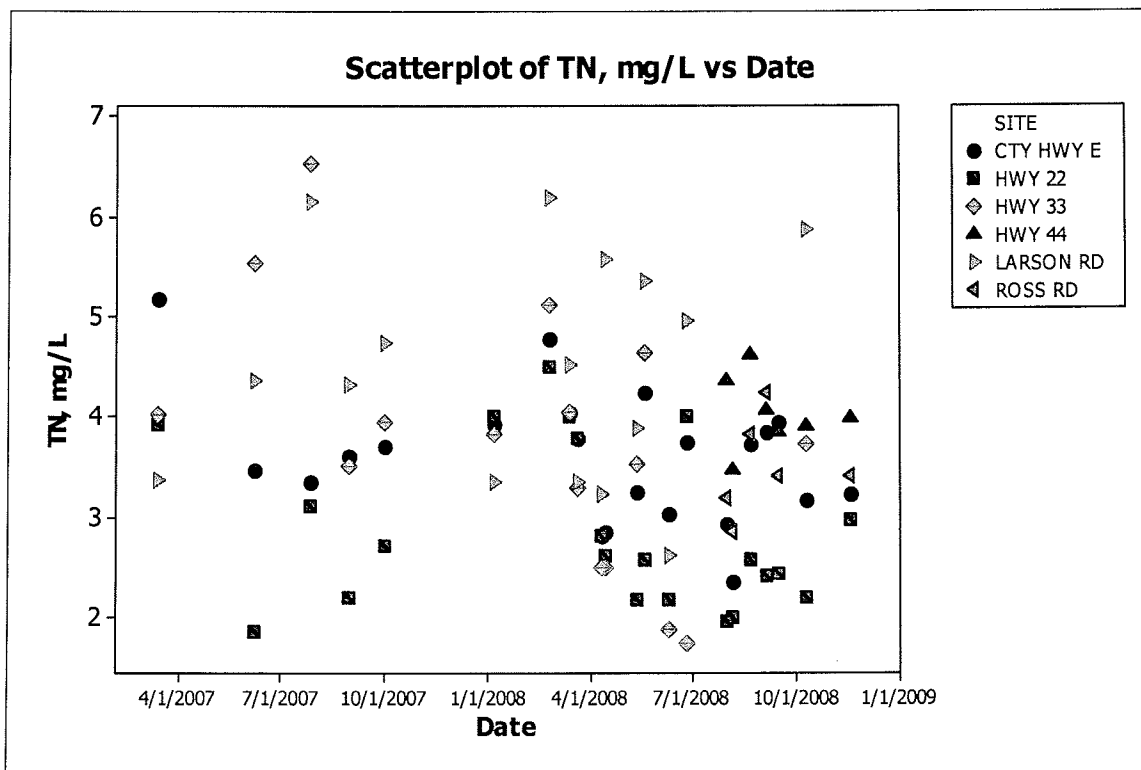


Figure 7. Park Lake Watershed Total Nitrogen Concentrations Scatter plot and Box plot (2007-2009)

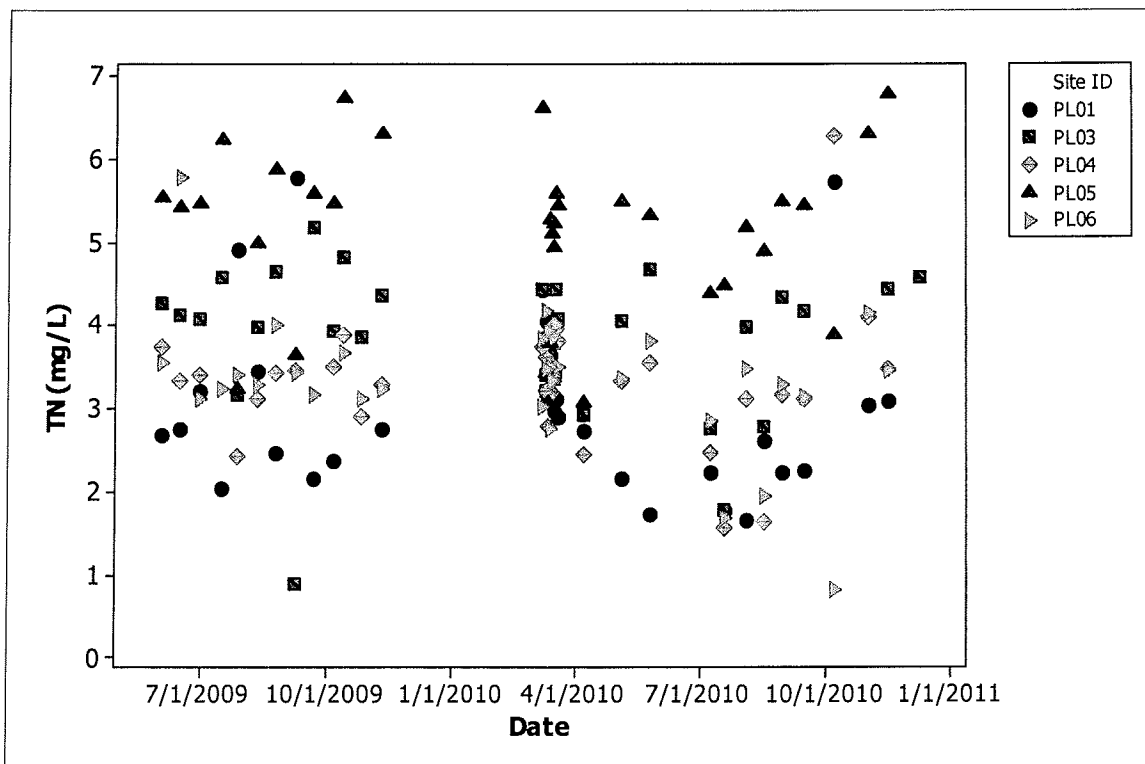
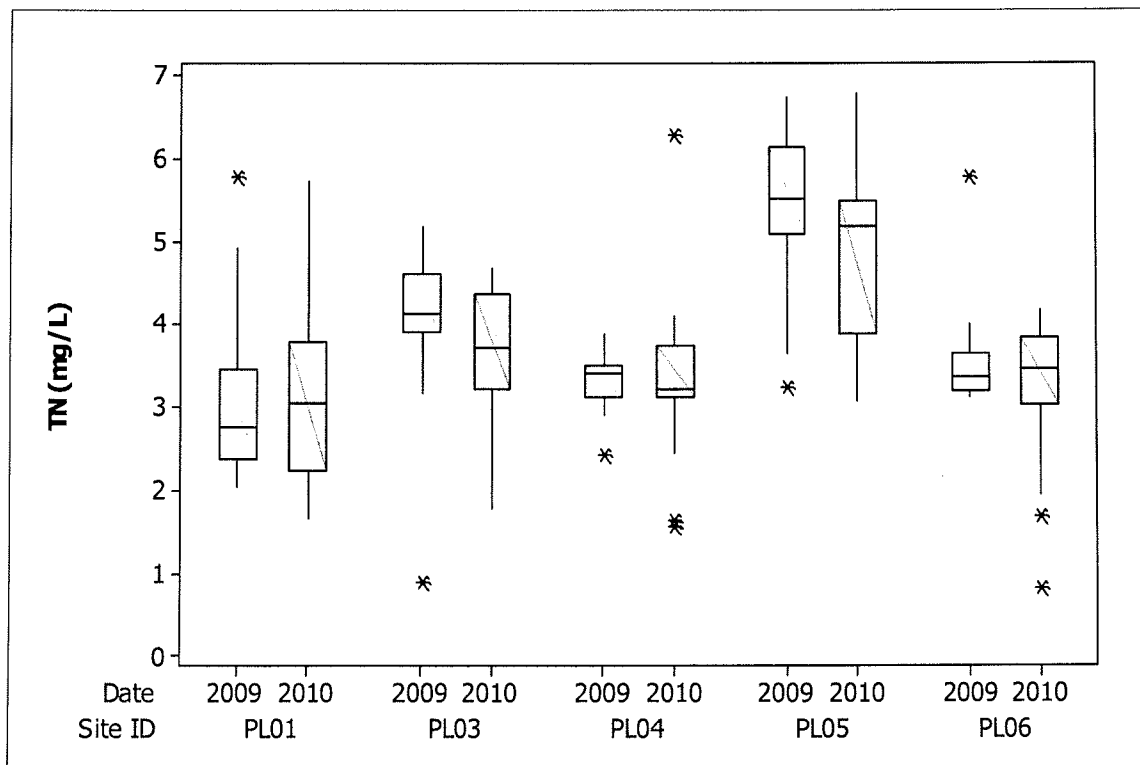


Figure 8. Park Lake Watershed Total Nitrogen Concentrations Scatter plot and Box plot (2009-2010)

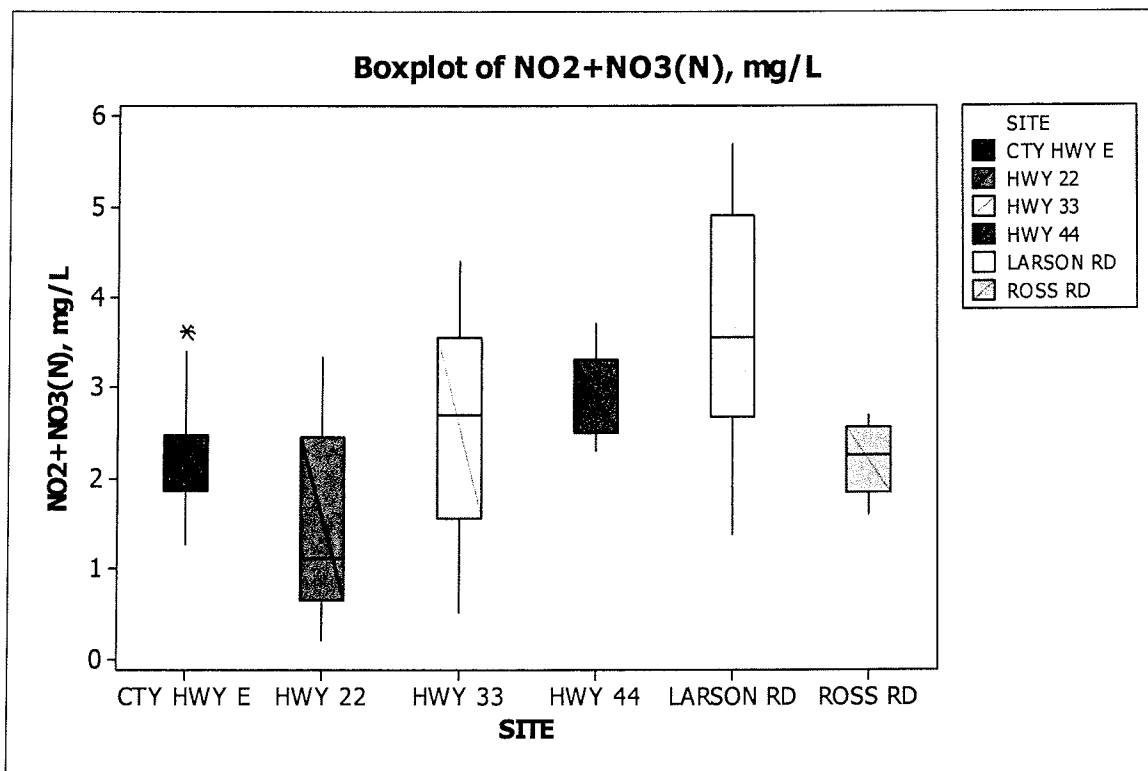
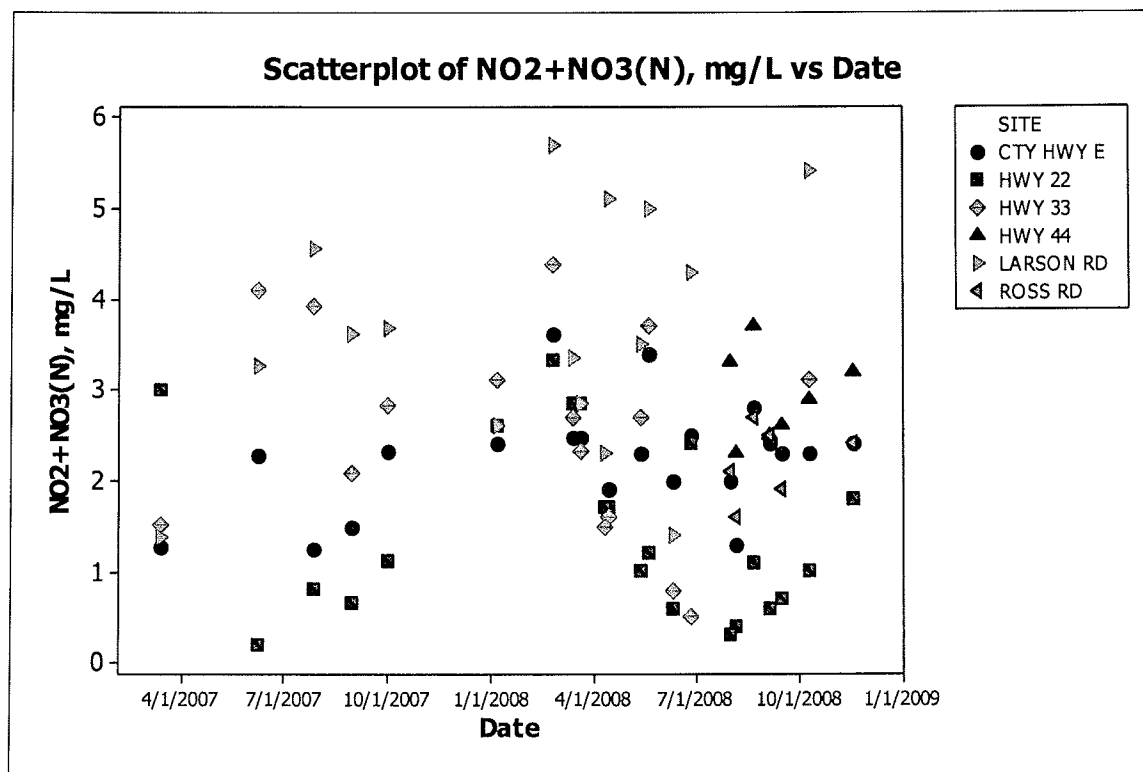


Figure 9. Park Lake Watershed NO₂ + NO₃ (N) Concentrations Scatter plot and Box plot (2008-2009)

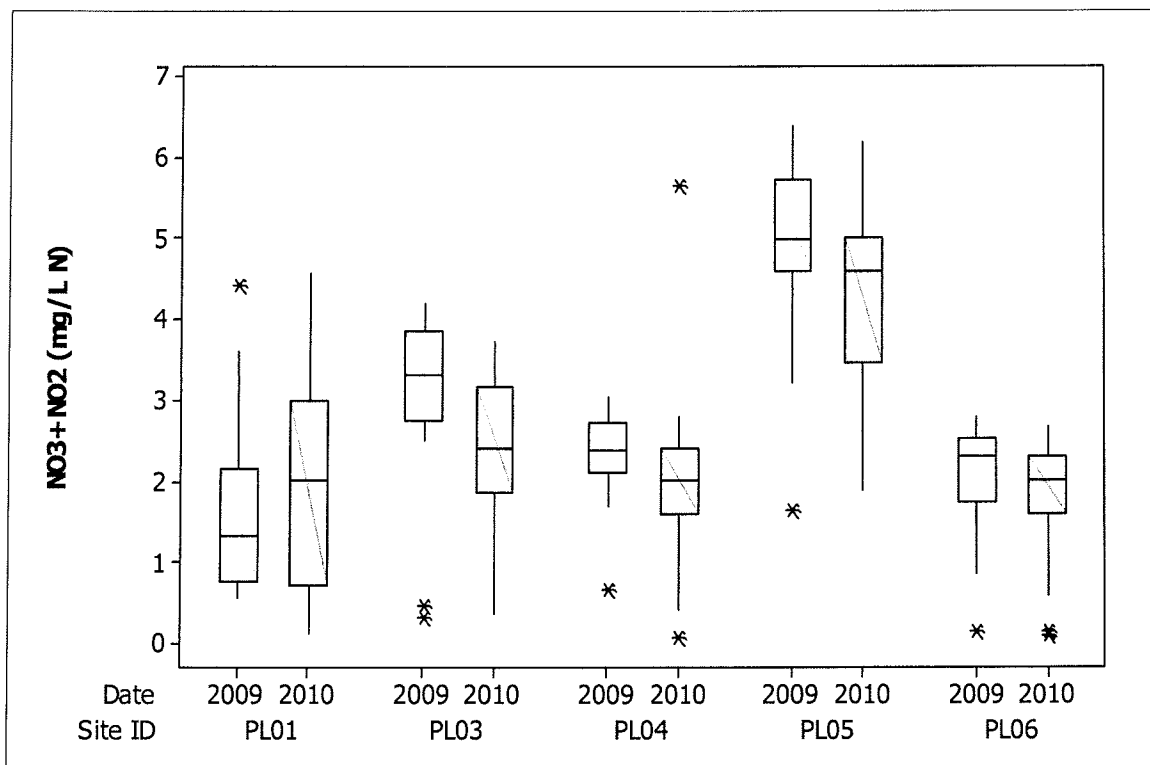
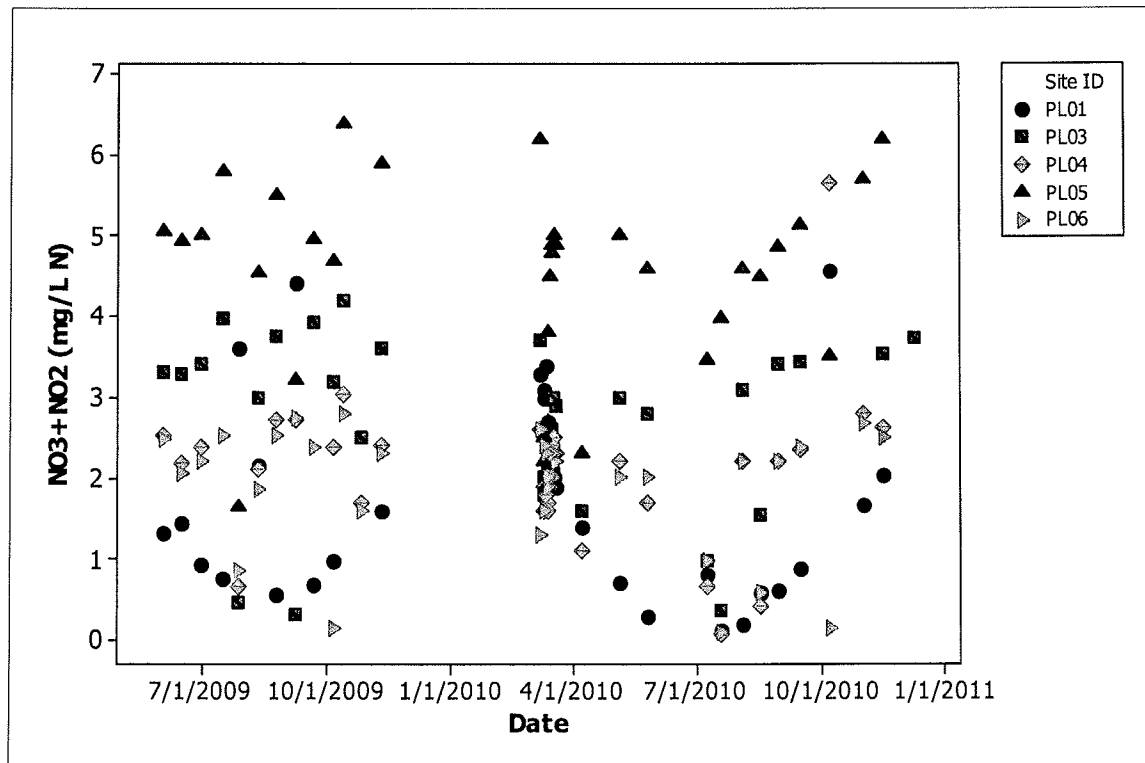


Figure 10. Park Lake Watershed NO₂ + NO₃ (N) Concentrations Scatter plot and Box plot (2009-2010)

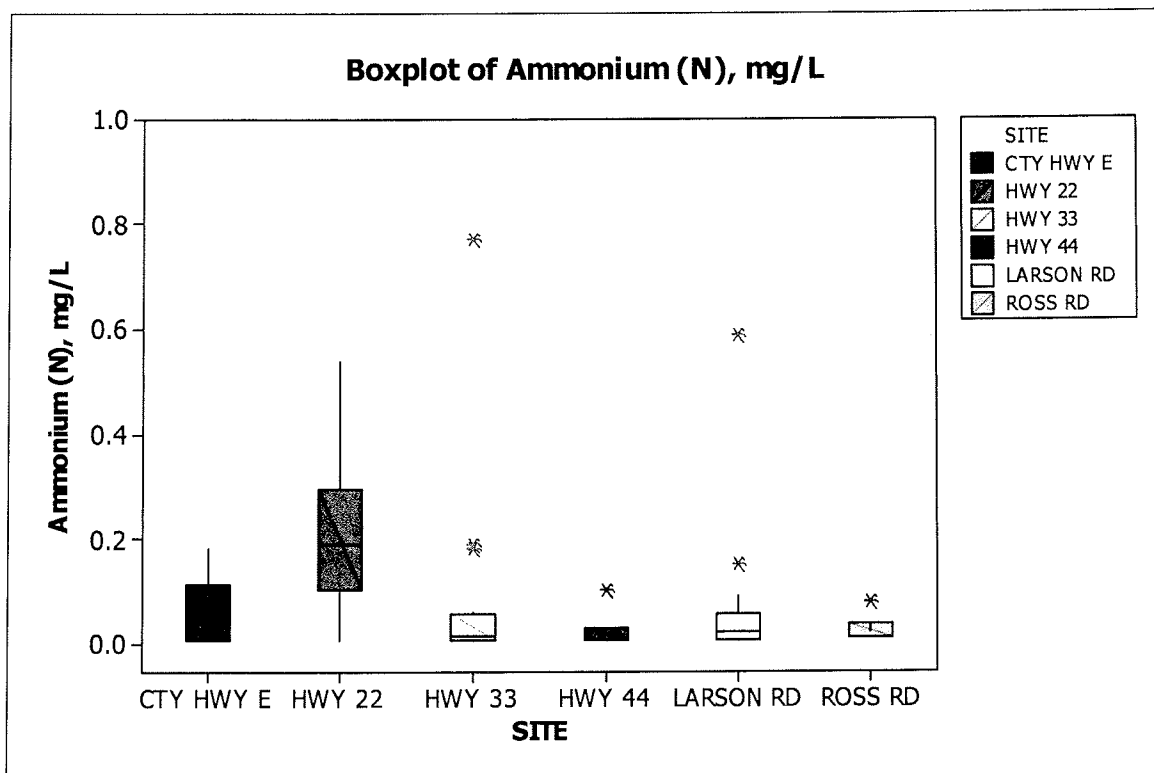
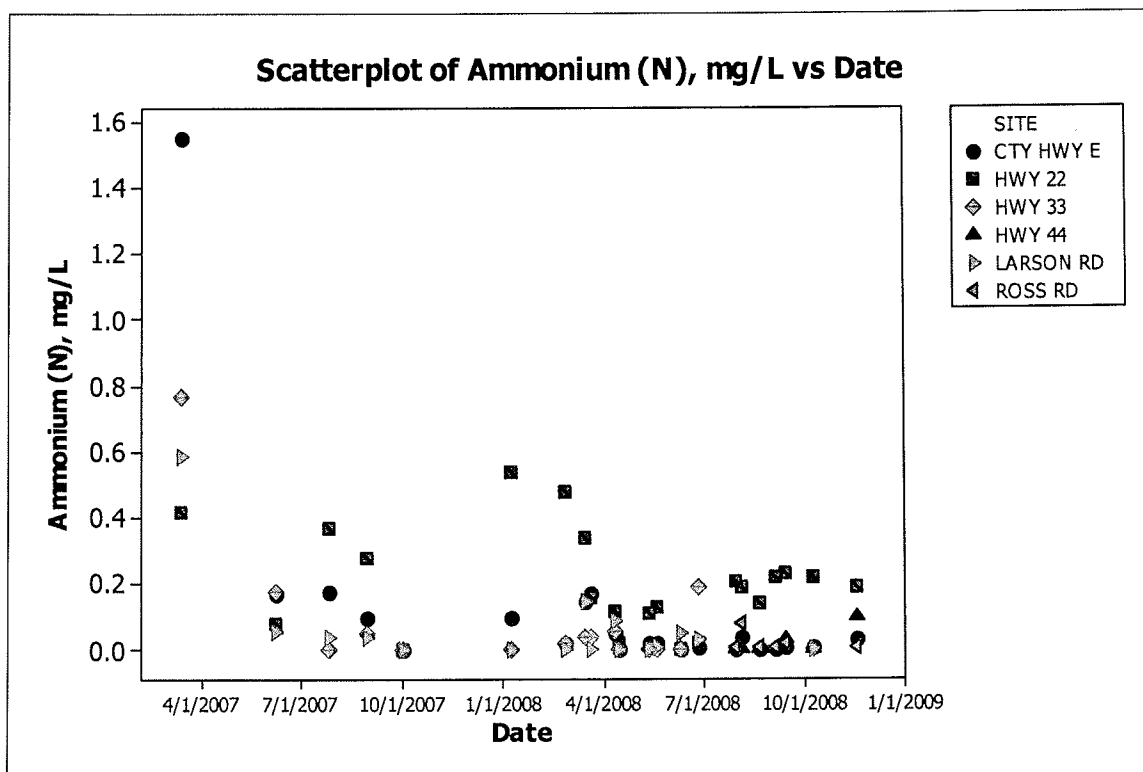


Figure 11. Park Lake Watershed Ammonium (N) Concentrations Scatter plot and Box plot (2007-2009)

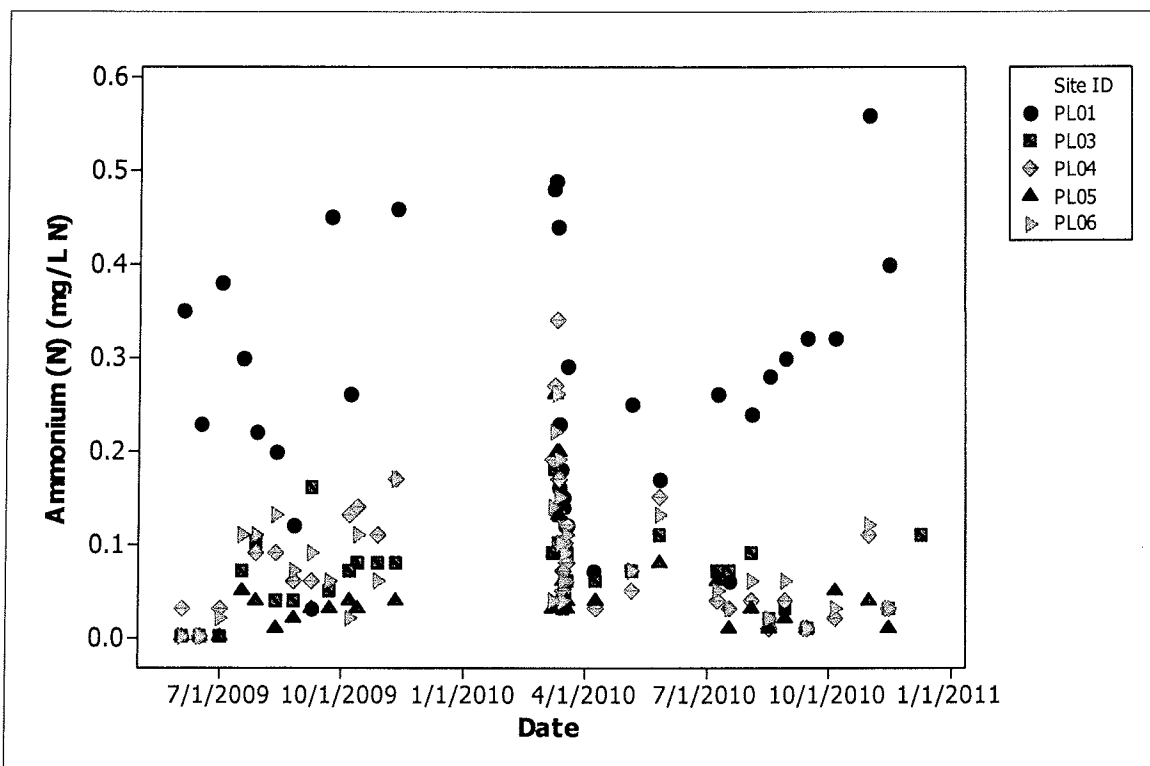
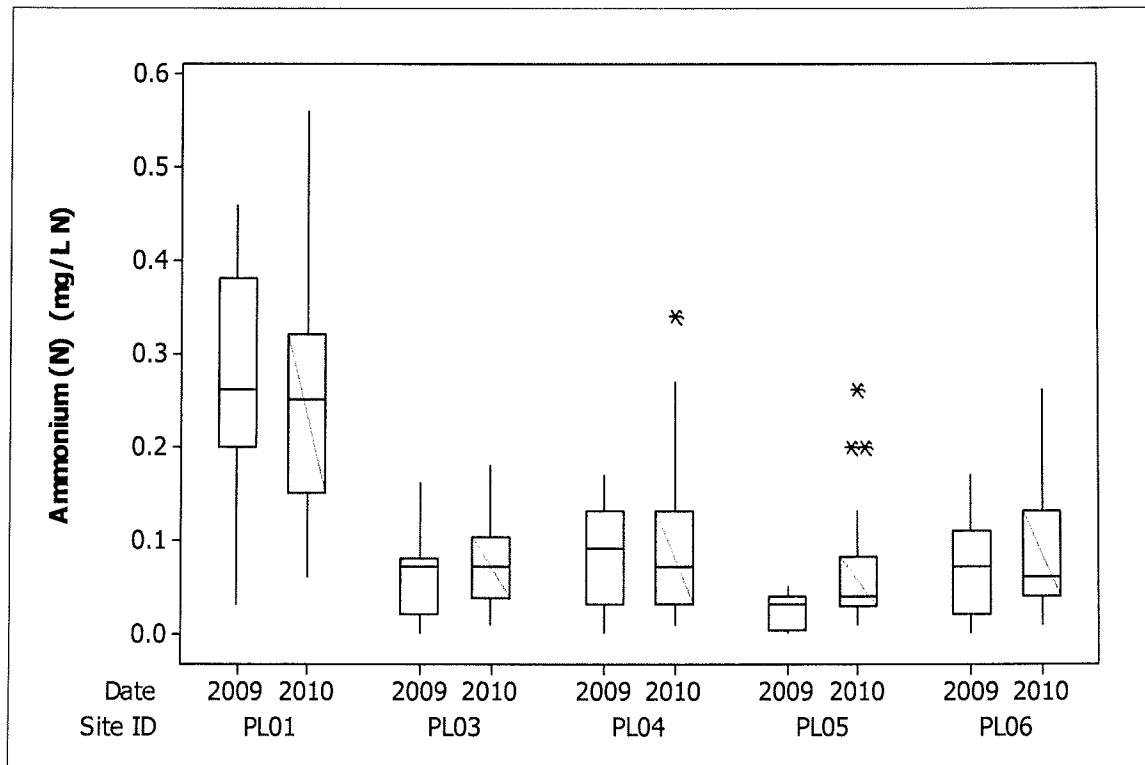


Figure 12. Park Lake Watershed Ammonium (N) Concentrations Scatter plot and Box plot (2009-2010)

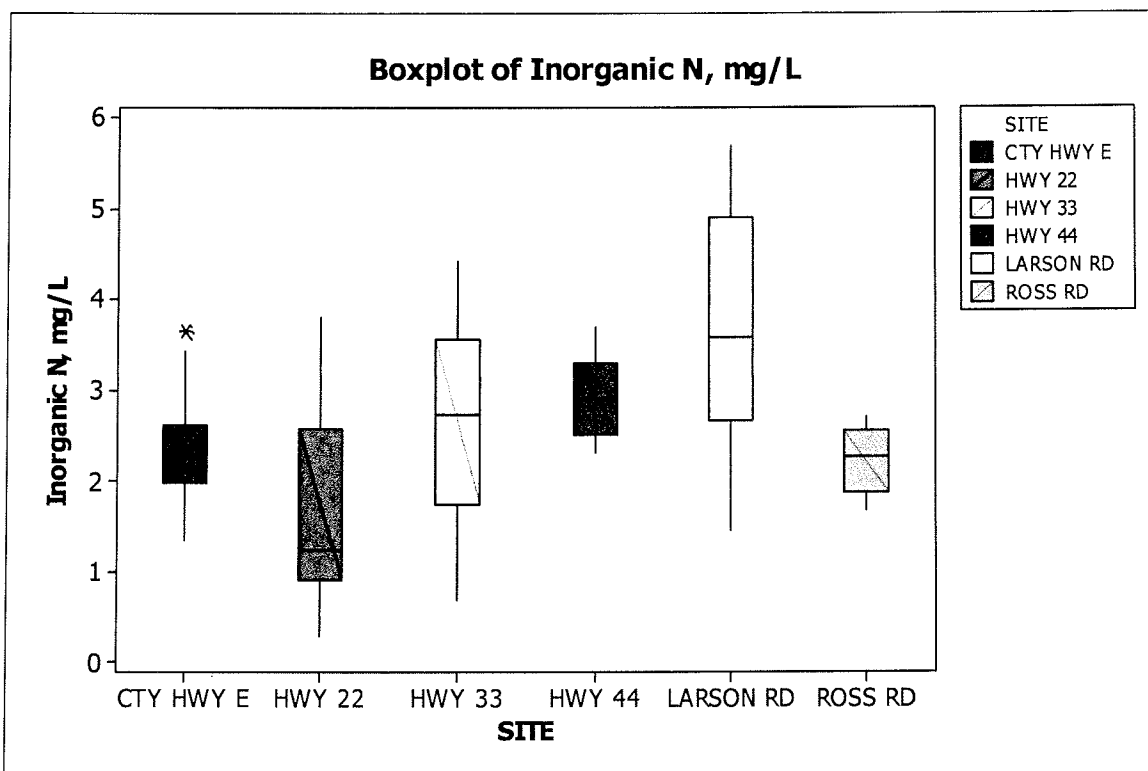
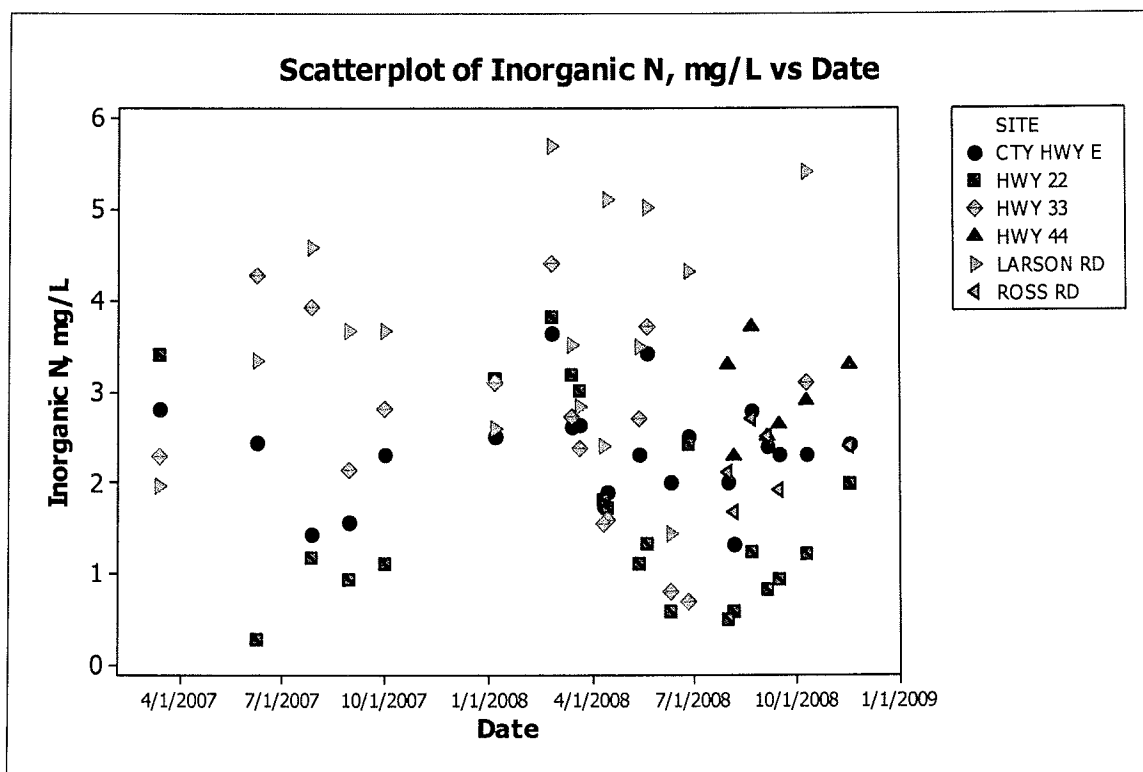


Figure 13. Park Lake Watershed Inorganic N Concentrations Scatter plot and Box plot (2007-2009)

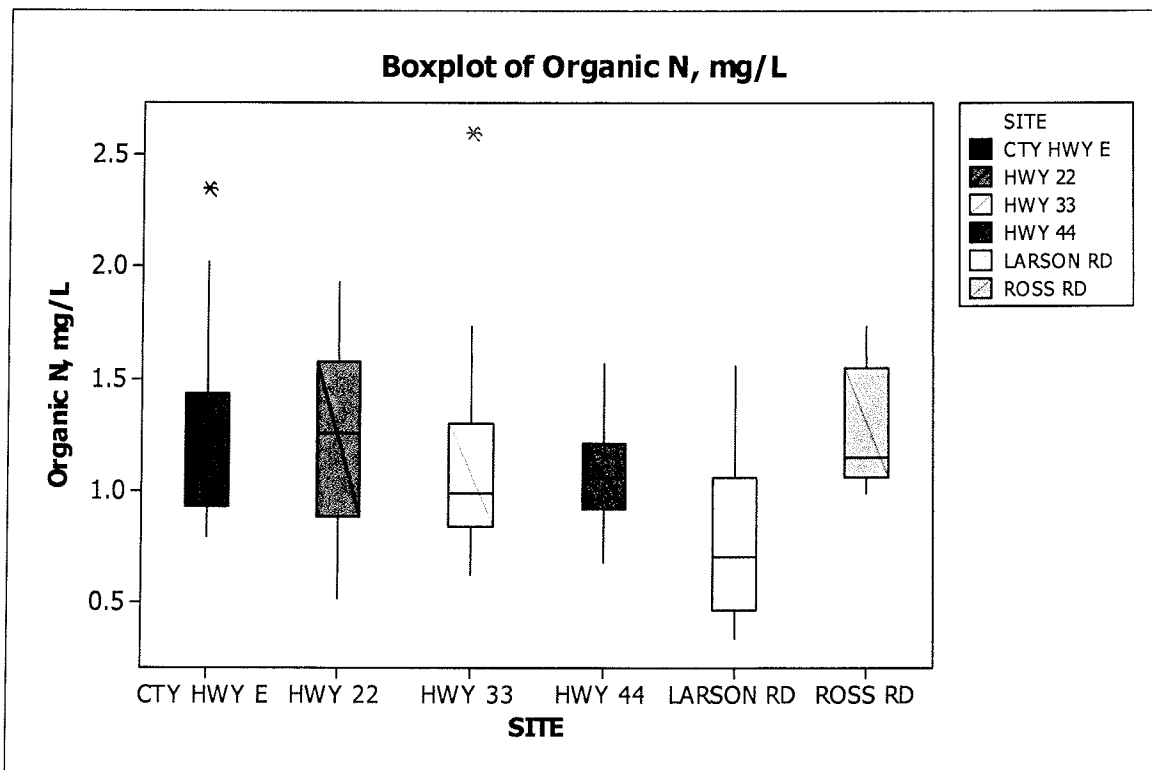
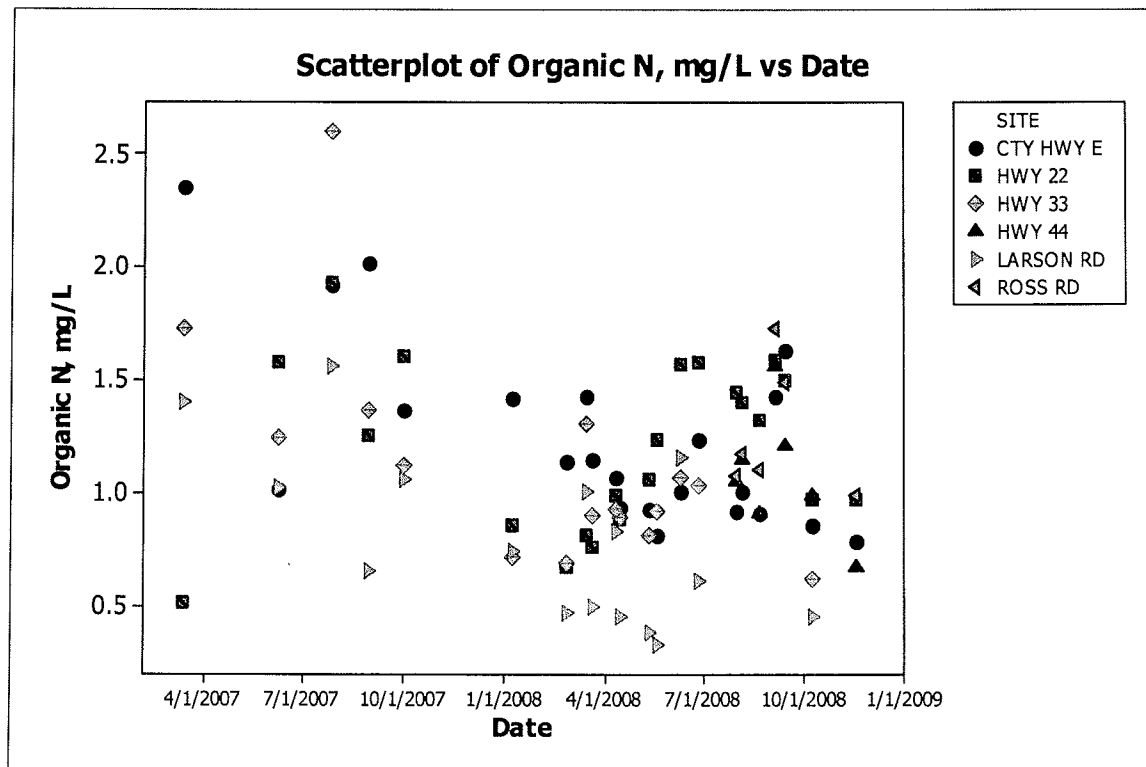


Figure 14. Park Lake Watershed Organic N Concentrations Scatter plot and Box plot (2007-2009)

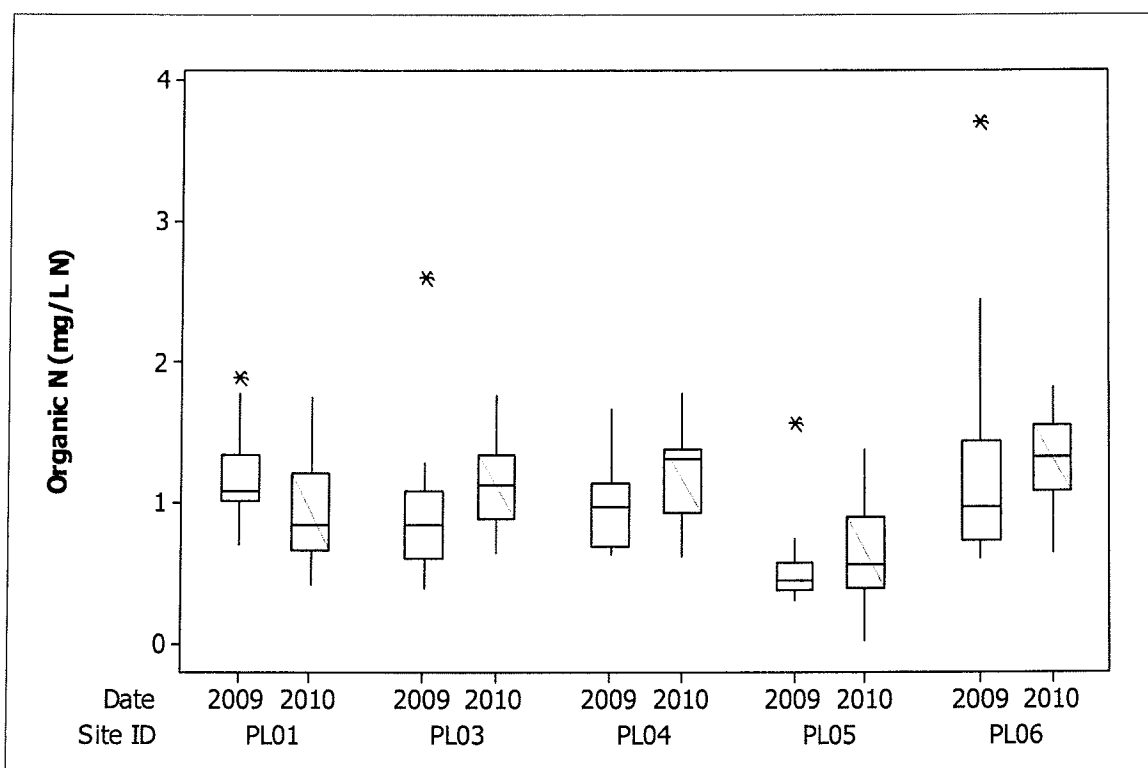
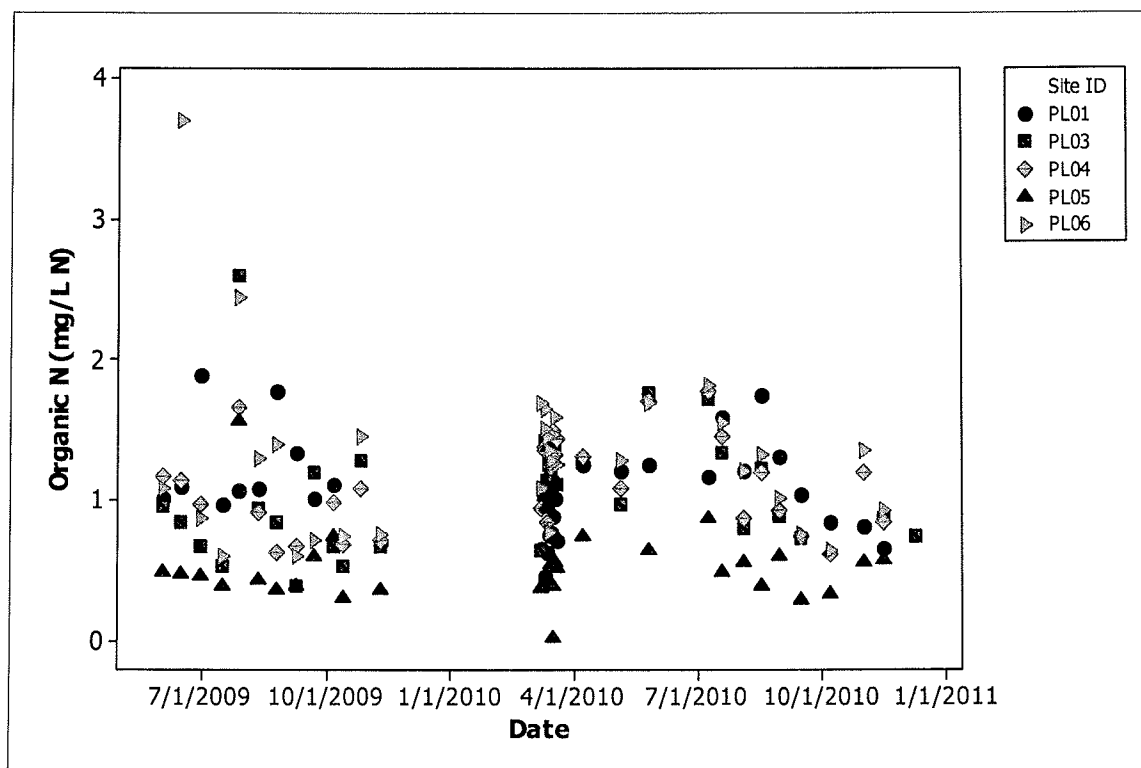


Figure 15. Park Lake Watershed Organic N Concentrations Scatter plot and Box plot (2009-2010)

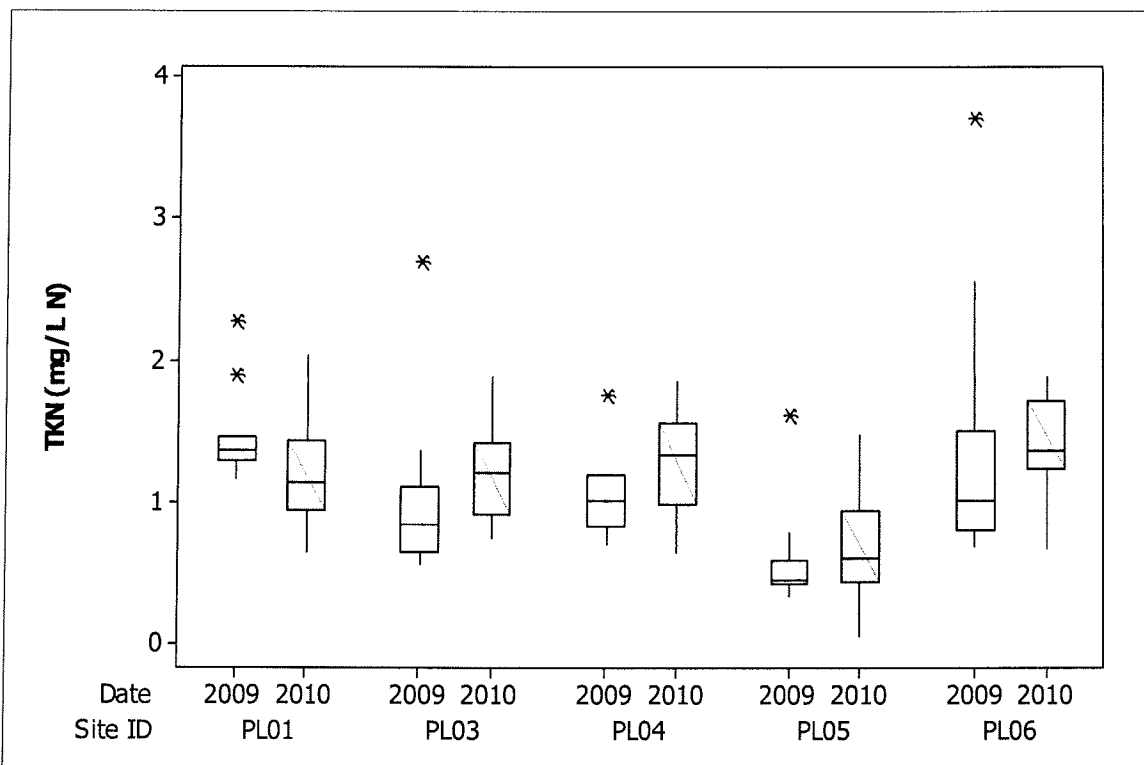
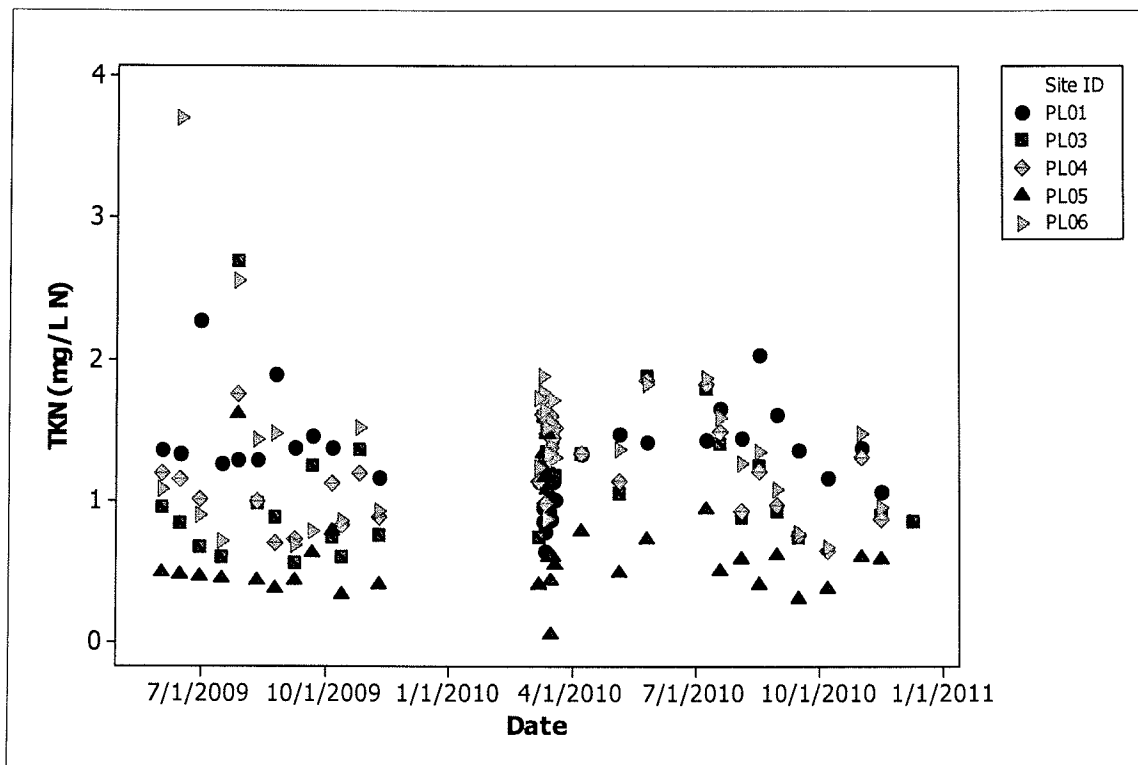


Figure 16. Park Lake Watershed Total Kjeldahl Nitrogen (TKN) Concentrations Scatter plot and Box plot (2009-2010)

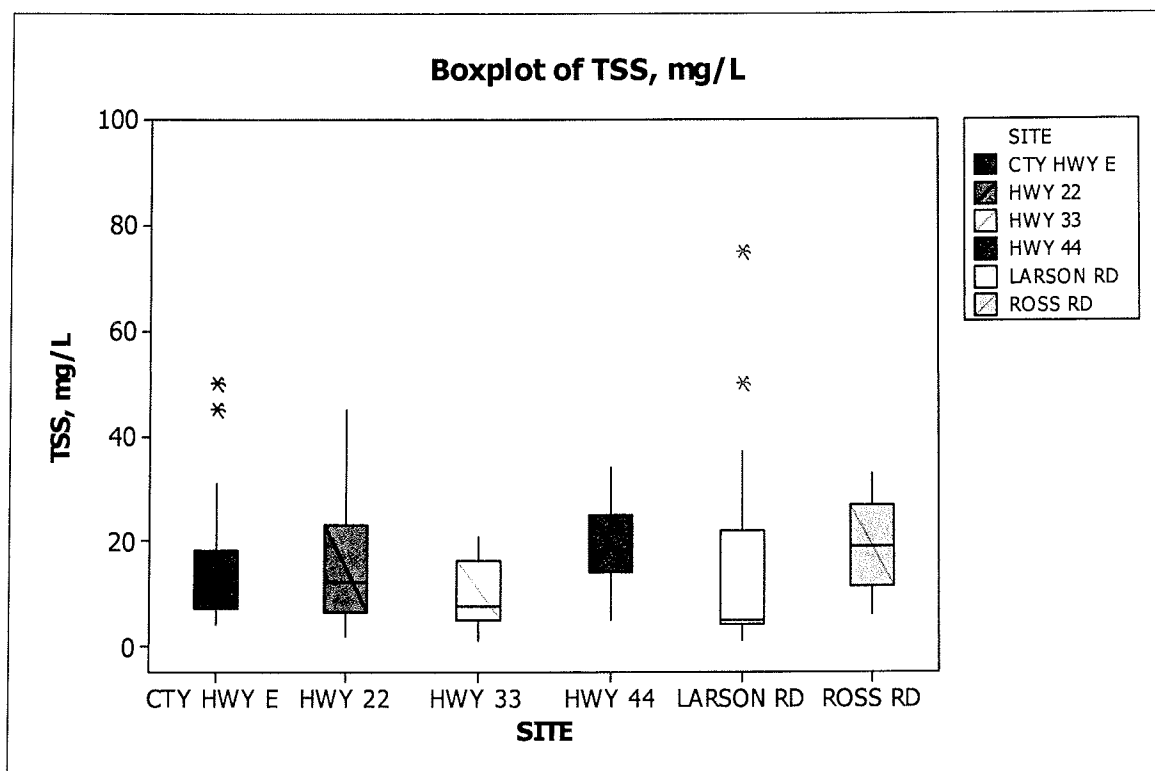
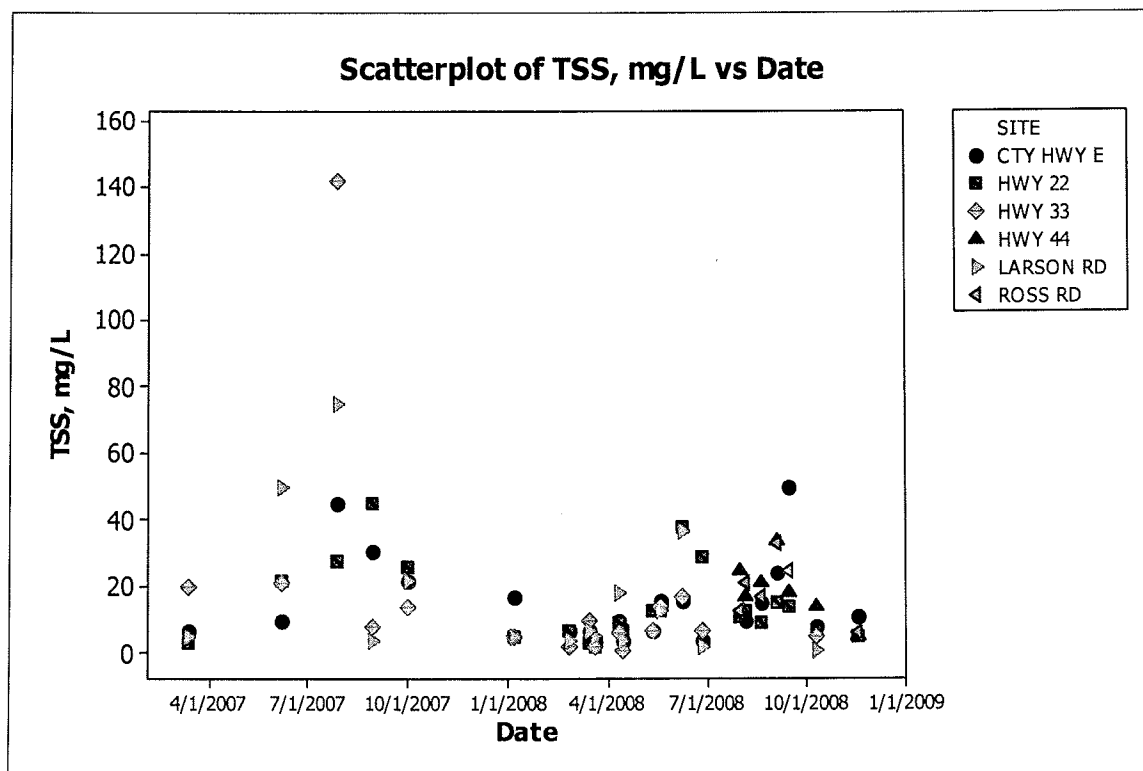


Figure 17. Park Lake Watershed Total Suspended Solids Concentrations Scatter plot and Box plot (2007-2009)

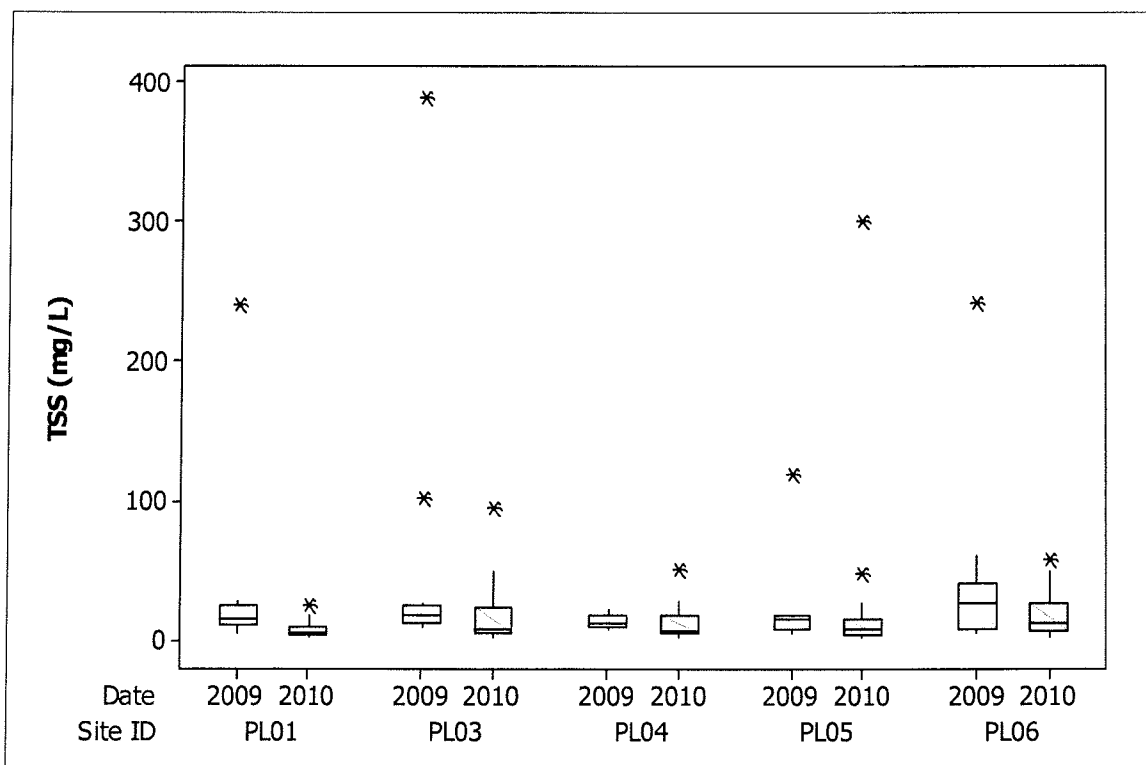
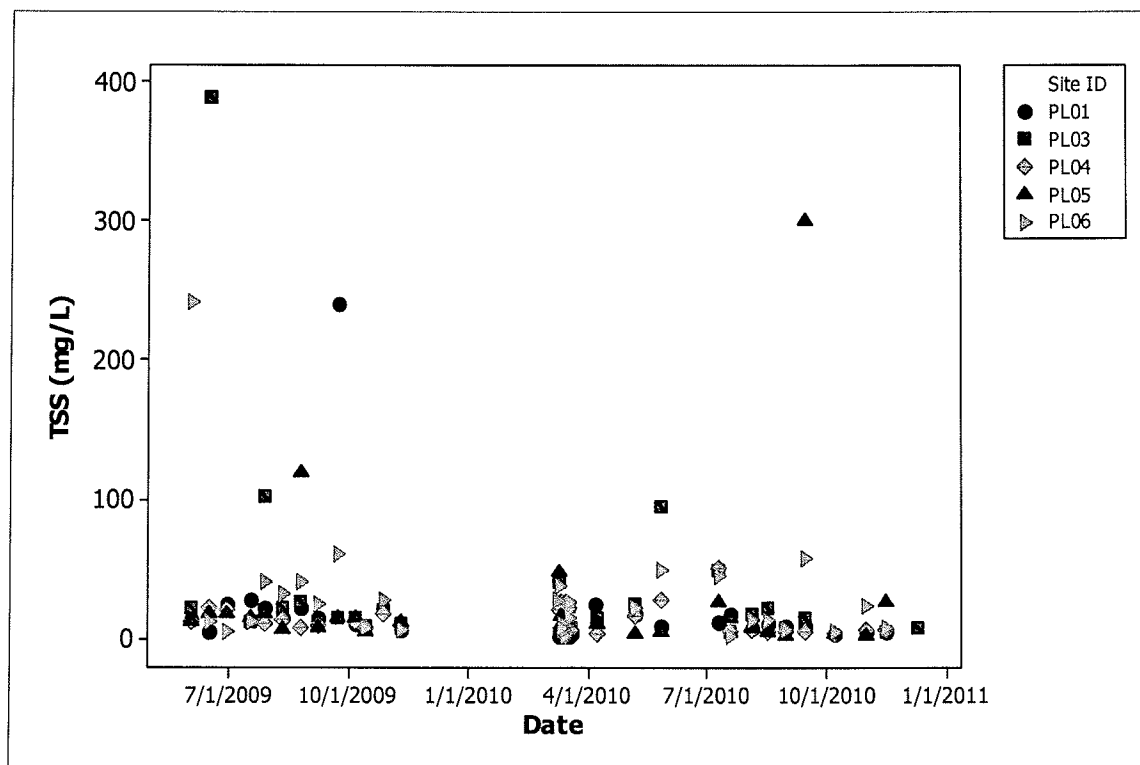


Figure 18. Park Lake Watershed Total Suspended Solids Concentrations Scatter plot and Box plot (2009-2010)

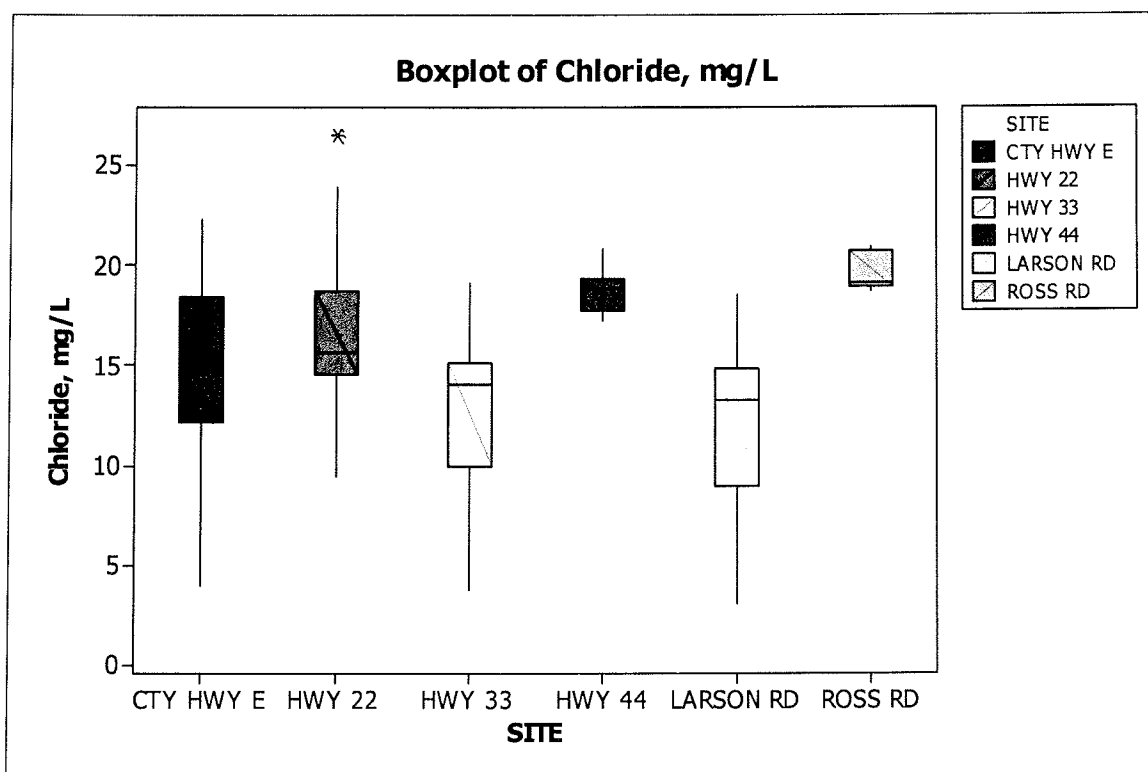
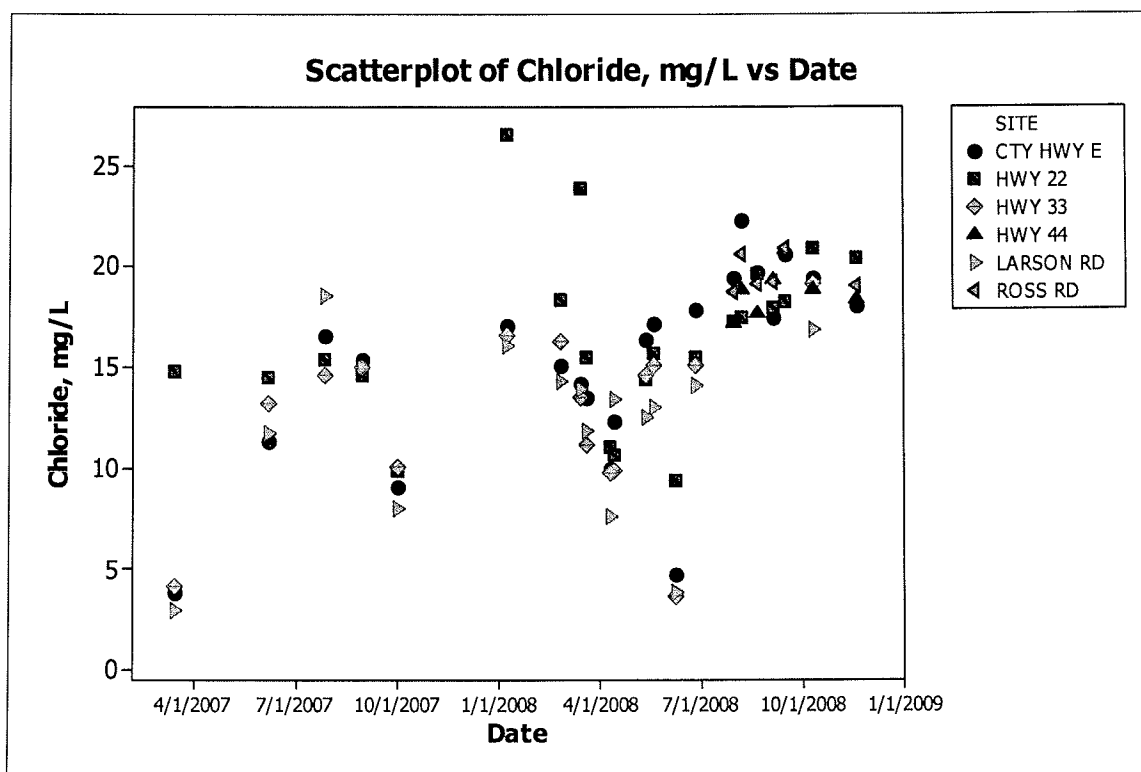


Figure 19. Park Lake Watershed Chloride Concentrations Scatter plot and Box plot (2007-2009)

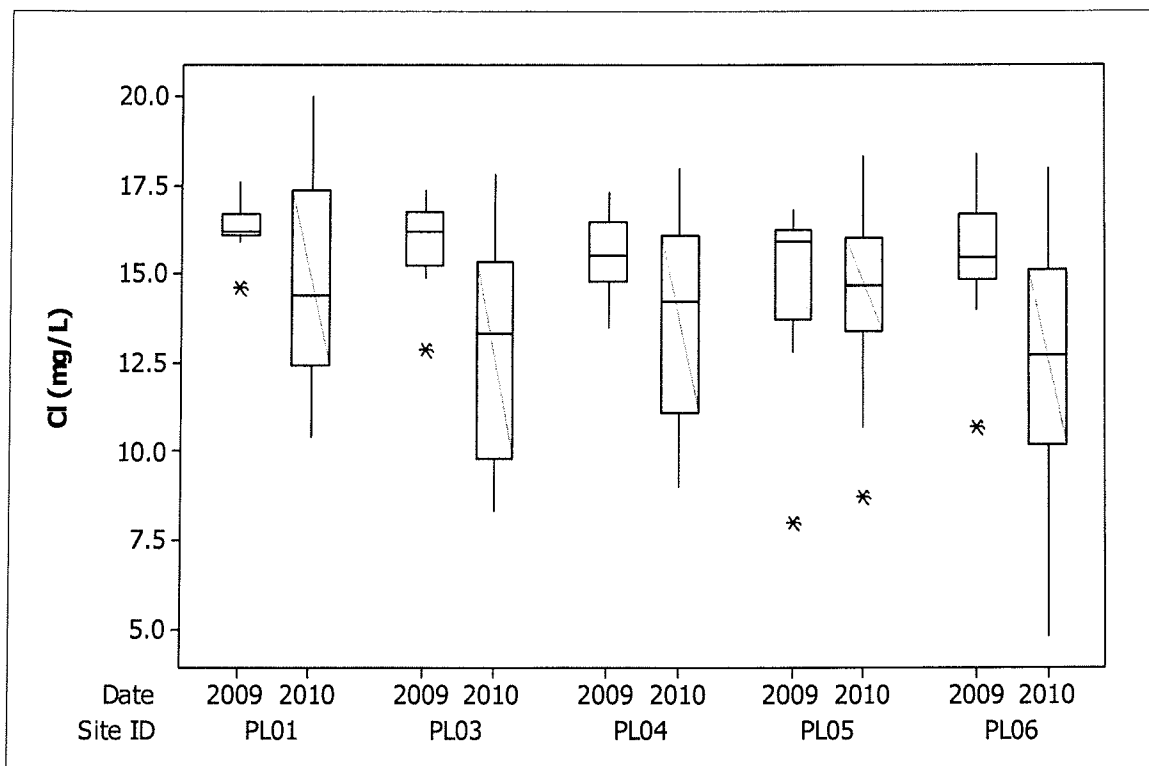
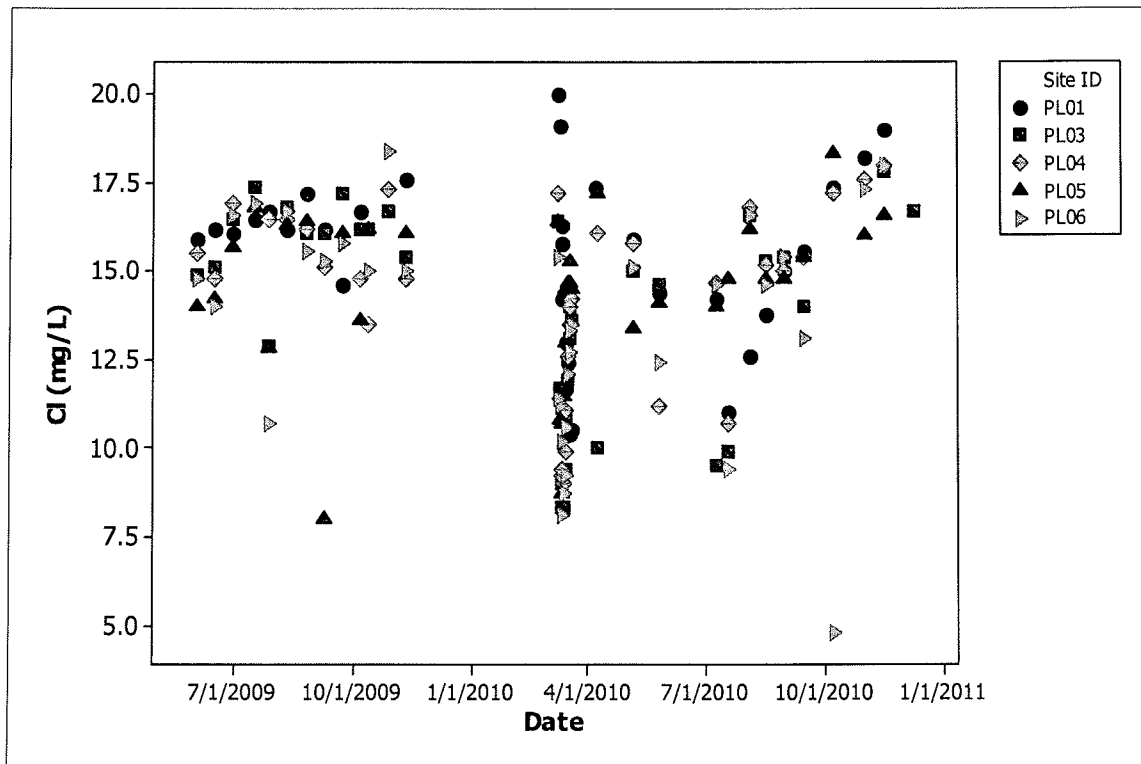


Figure 20. Park Lake Watershed Chloride Concentrations Scatter plot and Box plot (2009-2010)

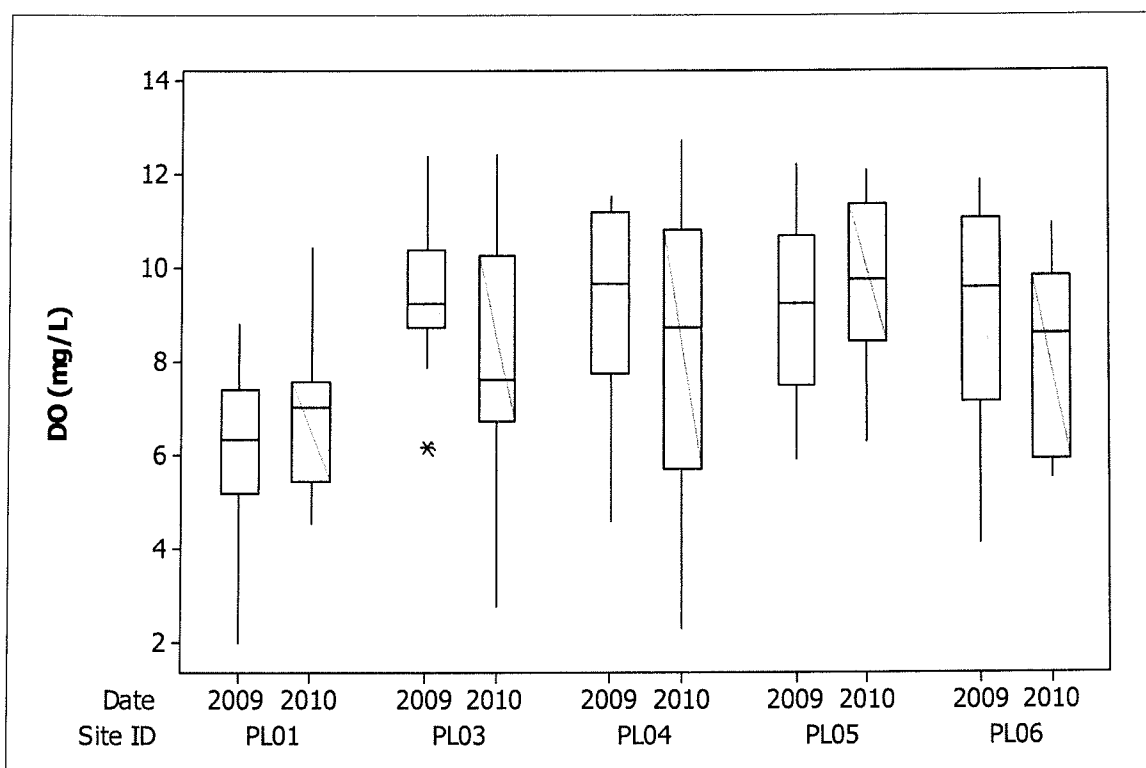
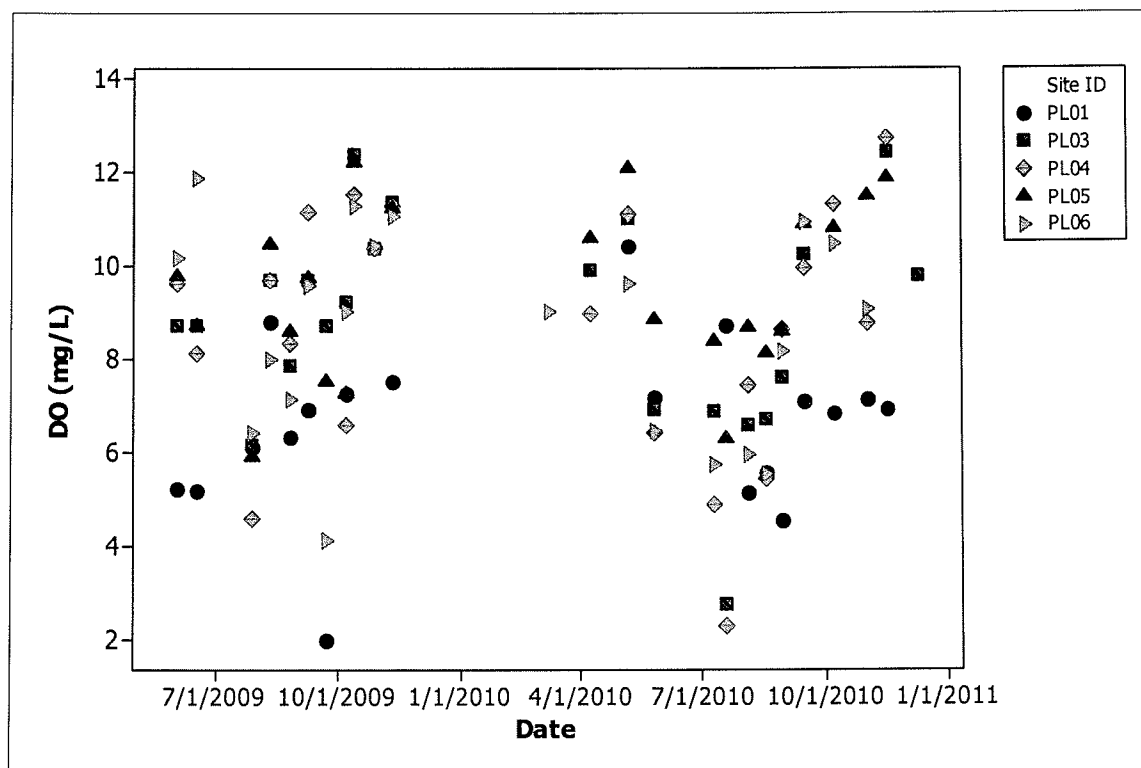


Figure 21. Park Lake Dissolved Oxygen Concentrations Scatter plot and Box plot (2009-2010)

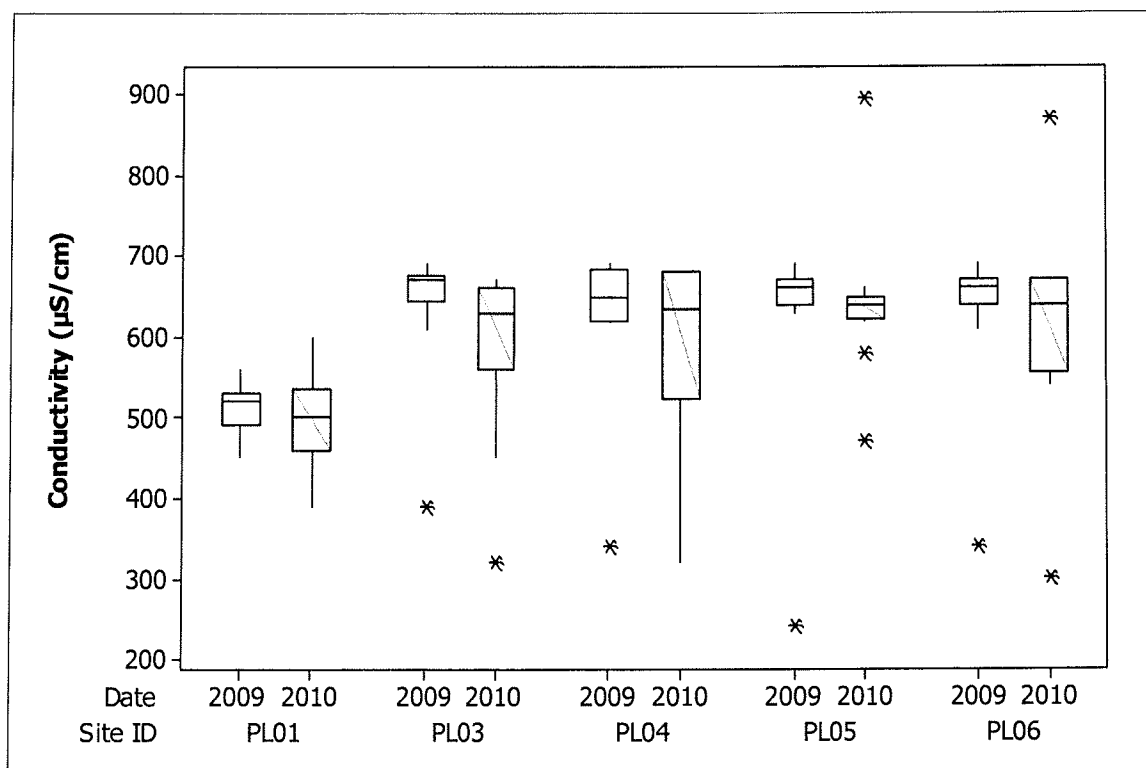
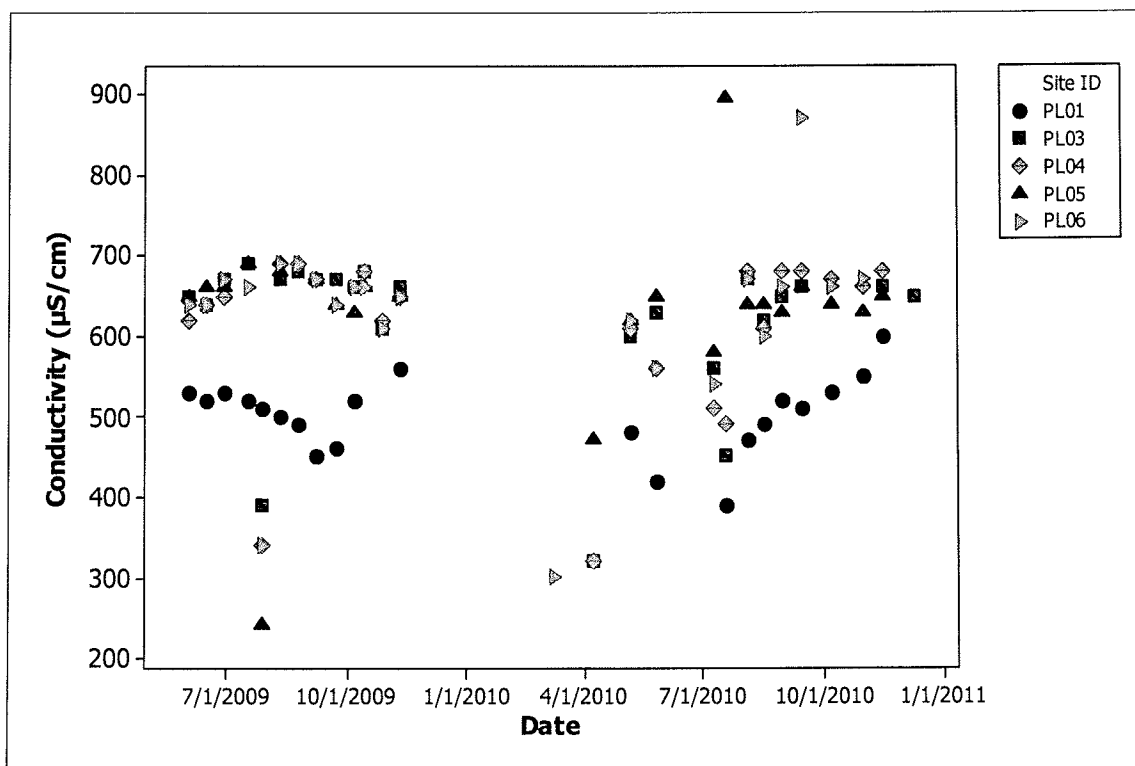


Figure 22. Park Lake Dissolved Oxygen Concentrations Scatter plot and Box plot (2009-2010)

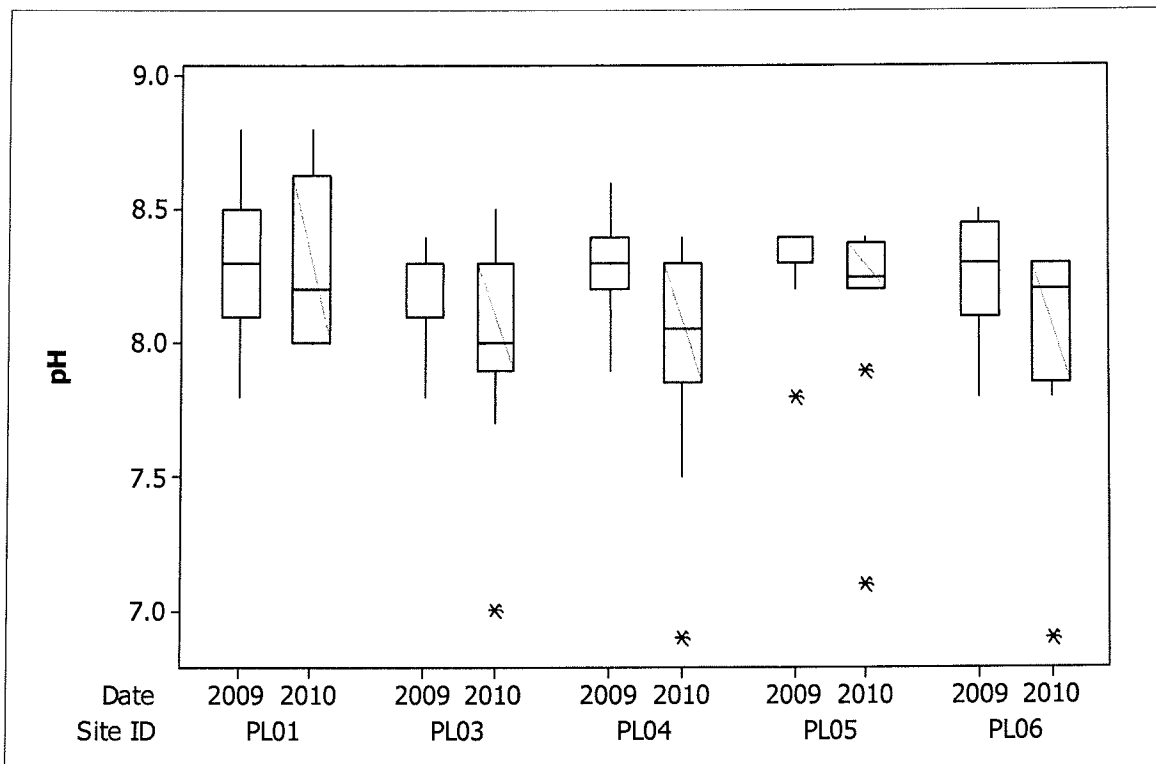
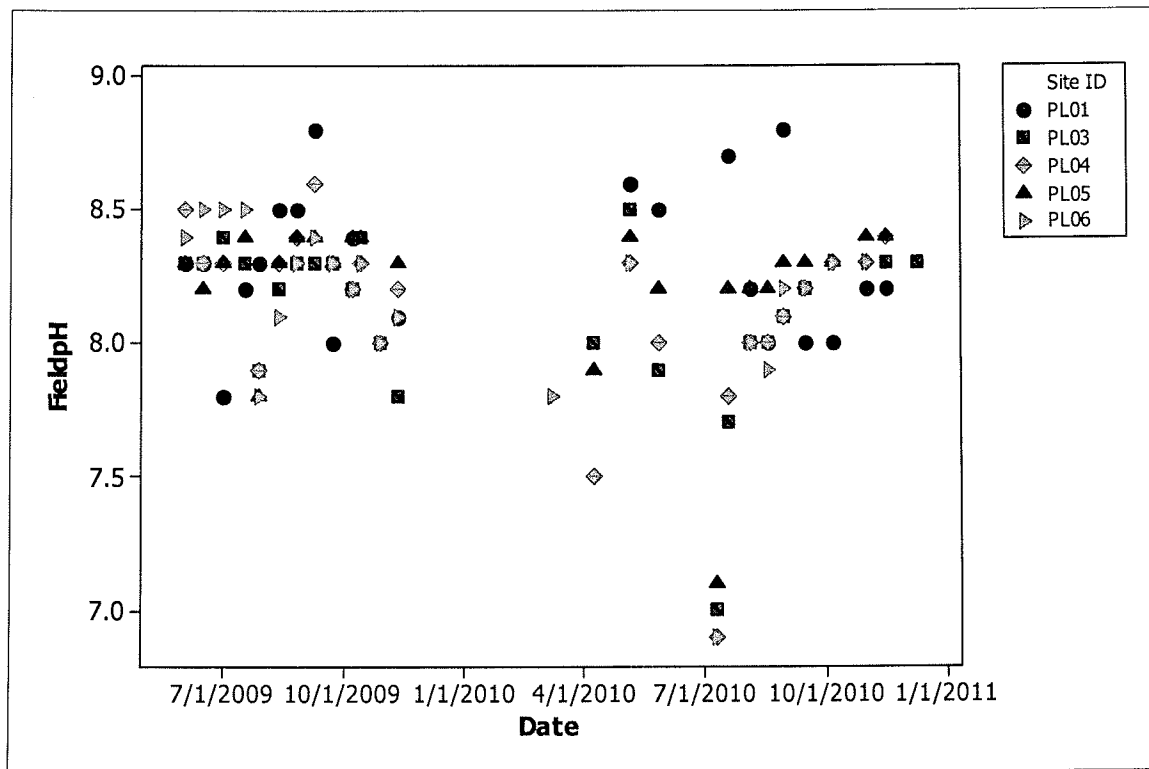


Figure 23. Park Lake pH Scatter plot and Box plot (2009-2010)

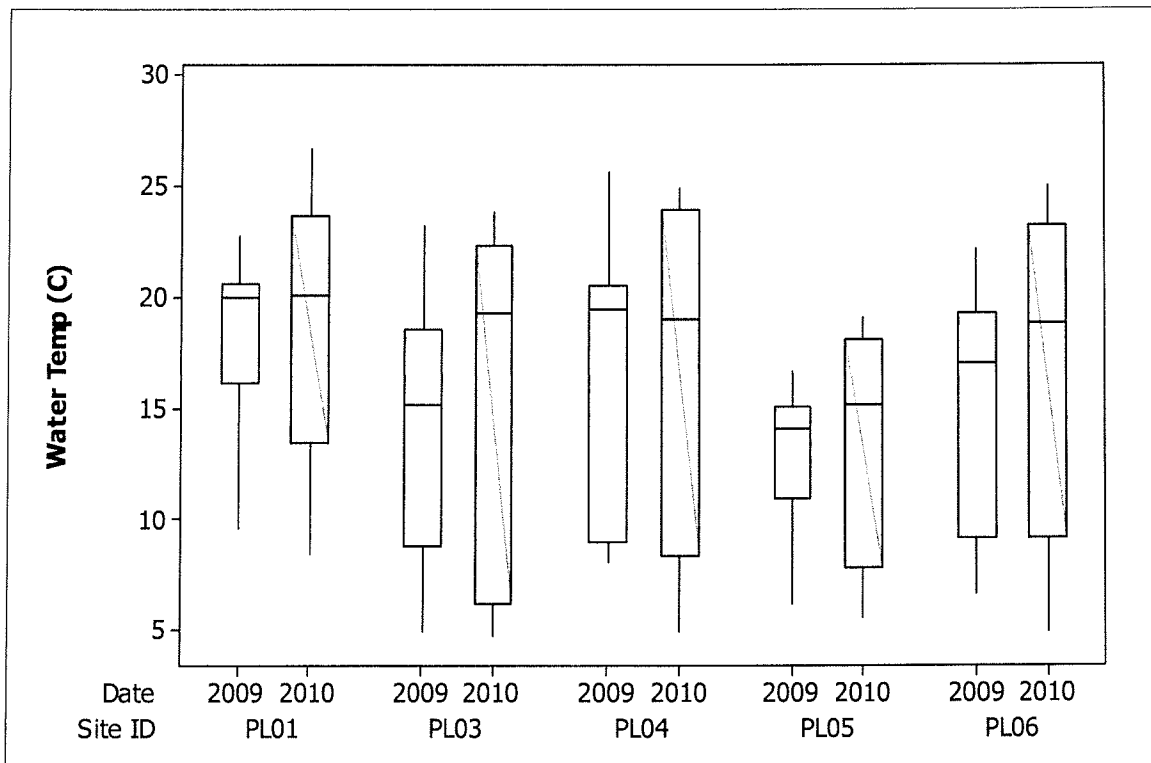
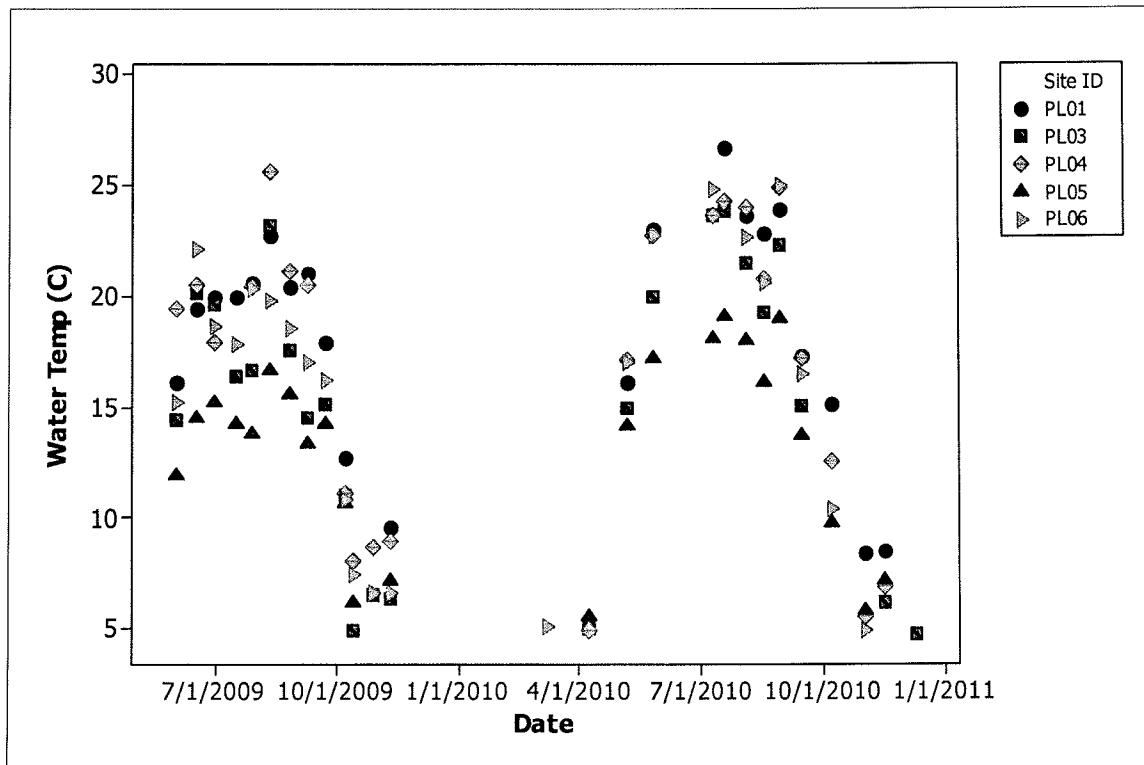


Figure 24. Park Lake Water Temperature © Scatter plot and Box plot (2009-2010)

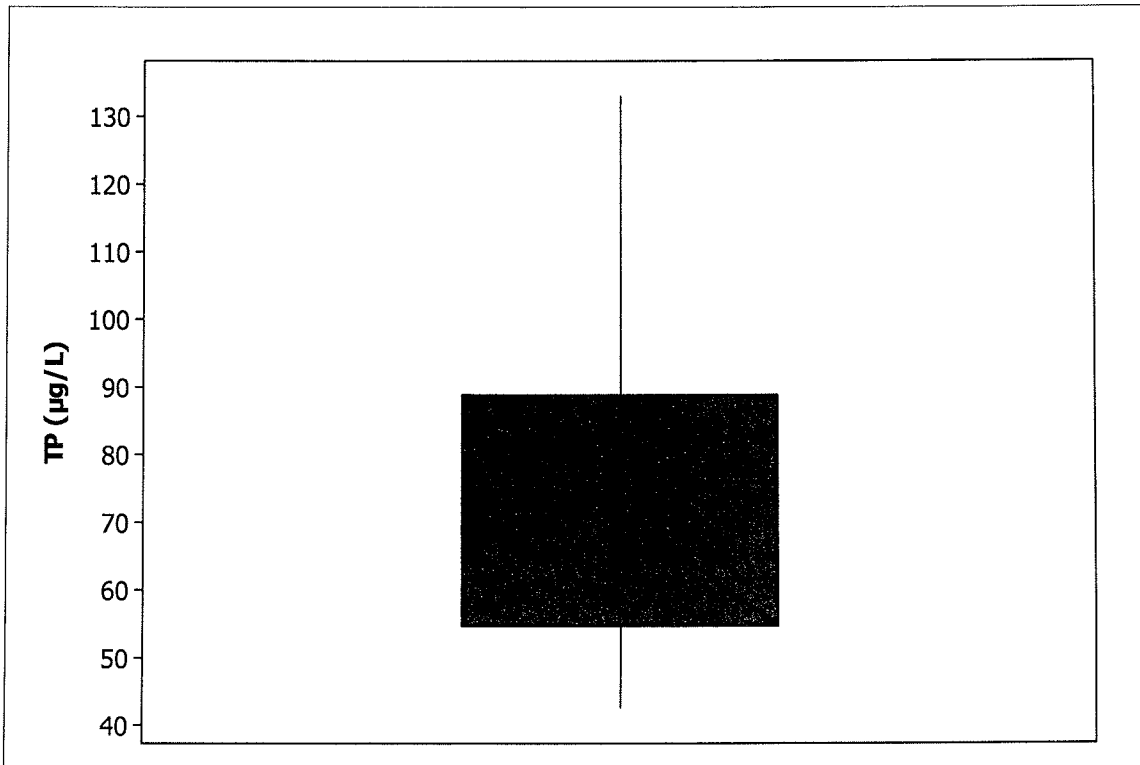


Figure 25. 2009-2010 Park Lake Total Phosphorous Box Plot

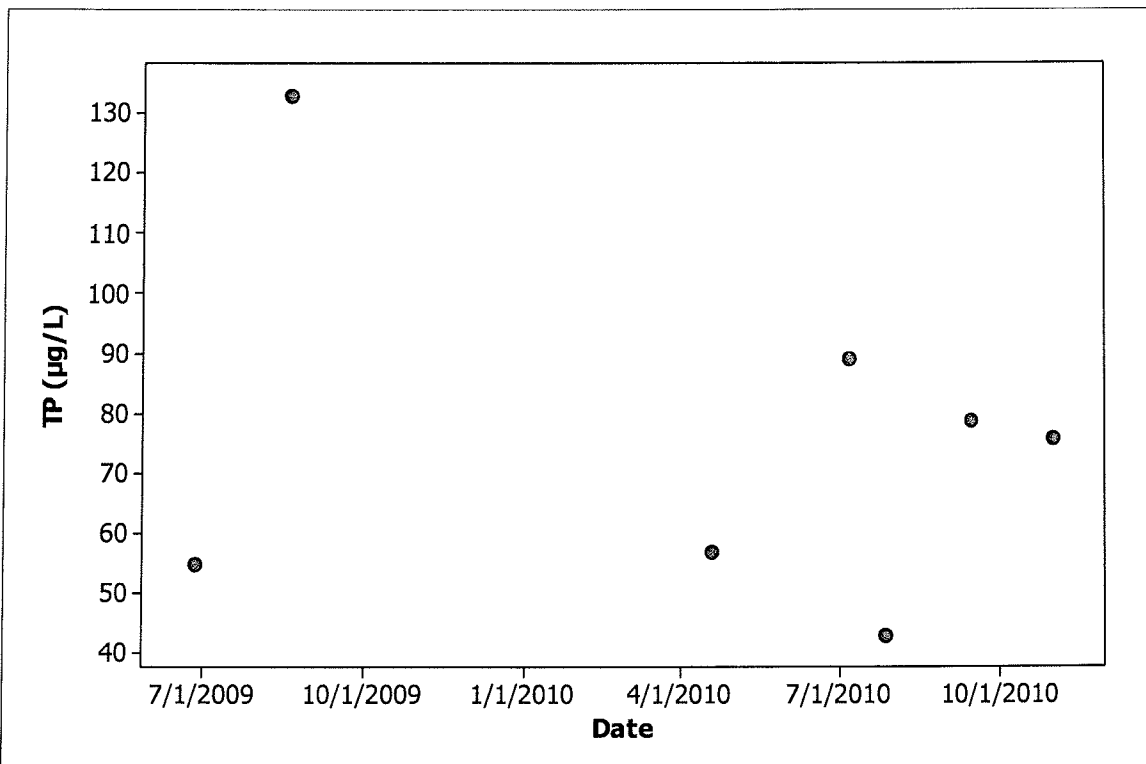


Figure 26. 2009-2010 Park Lake Total Phosphorous Scatter Plot

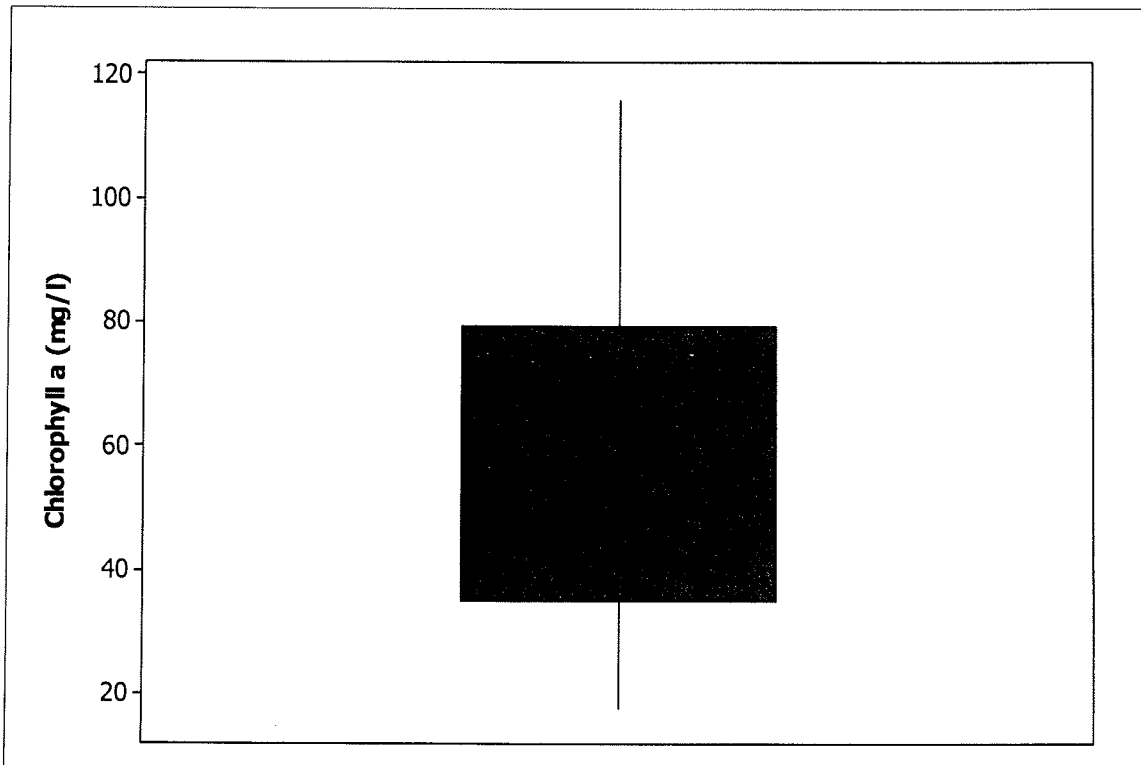


Figure 27. 2009-2010 Park Lake Total Chlorophyll a Box Plot

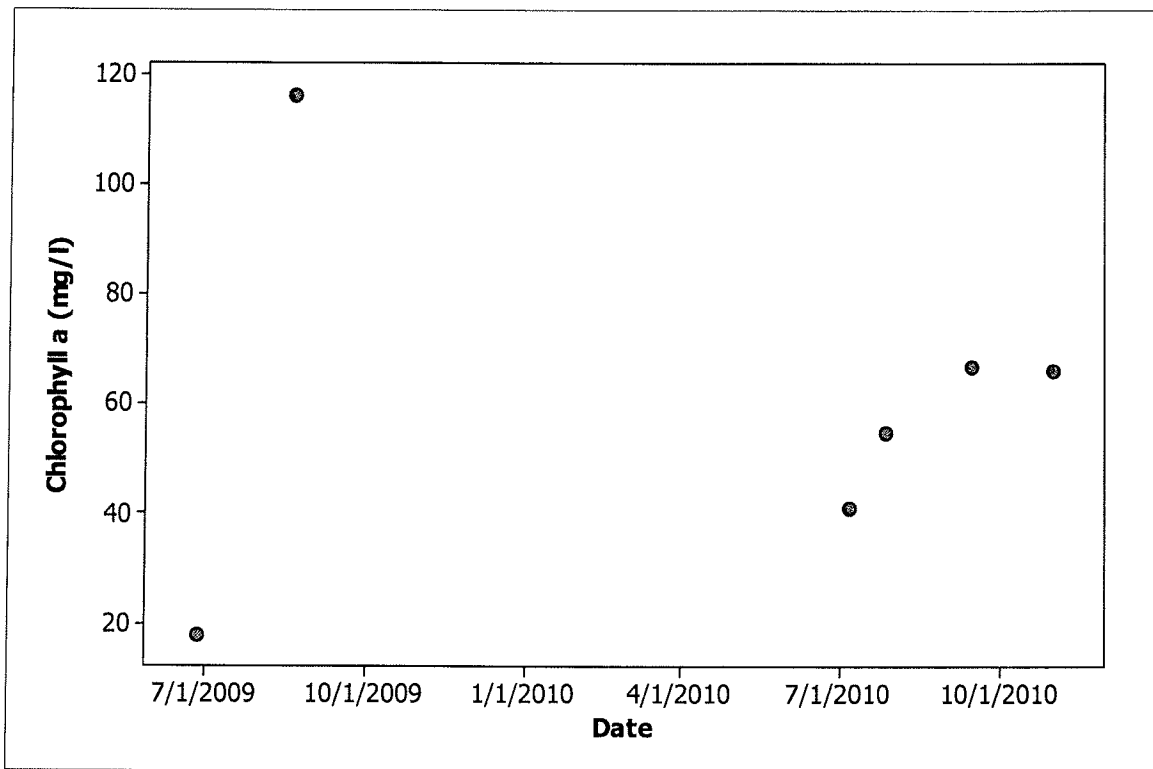


Figure 28. 2009-2010 Park Lake Chlorophyll a Scatter Plot

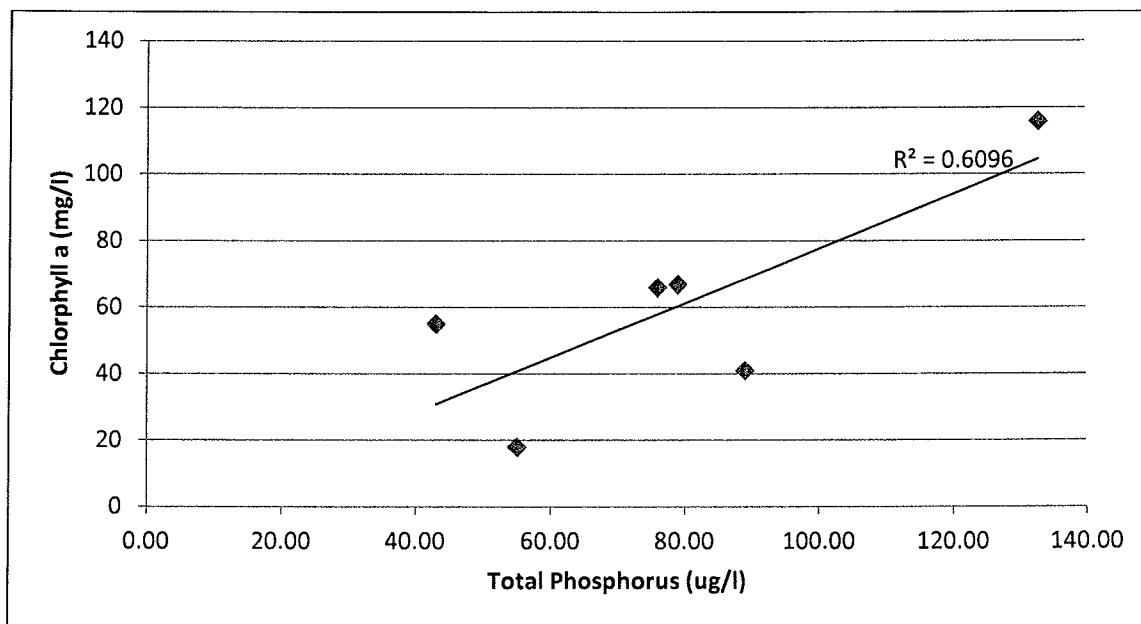


Figure 29. 2009-2010 Park Lake Chlorophyll a vs. Total P

