

**Delivery of a Watershed Coordinator Development Program
Texas State Soil and Water Conservation Board
Clean Water Act §319(h) Nonpoint Source Grant Program
FY 2013 Workplan 13-04**

Quarter no. 1 From 01/01/14 Through 3/31/14

I. Abstract

This quarter has focused on scheduling trainings, conducting the initial contract kickoff meetings, and conducting the watershed modeling using LDCs and SELECT. The initial contract kickoff meeting was conducted January 2014. Work on updating the website <http://watershedplanning.tamu.edu/> has also continued to occur. Information continues to be posted on the website and through the watershed coordinators listserv. Initial planning has occurred by TWRI to schedule trainings through August 2014 and to conduct the Watershed Coordinators Roundtable on March 17th, 2014.

II. Overall Progress and Results by Objective and Task

TASK 1: PROJECT ADMINISTRATION

To effectively administer, coordinate and monitor all work performed under this project including technical and financial supervision and preparation of status reports. To maintain web-based watershed planning resources for Texas watershed coordinators.

Task 1.1: Project Administration –TWRI/IRNR will prepare electronic quarterly progress reports (QPRs) for submission to TSSWCB. QPRs shall document all activities performed within a quarter and shall be submitted by the 15th of January, April, July and October. QPRs shall be distributed to all project partners.

The following actions have been completed during this reporting period:

- a. The QPR for this first quarter was submitted by 4/13/14.

16% Complete

Task 1.2: TWRI/IRNR will perform accounting functions for project funds and along with SRS will submit appropriate Reimbursement Forms to TSSWCB at least quarterly.

The following actions have been completed during this reporting period:

- a. The contract was signed and the project period began 10/1/13 through 9/30/16.
- b. The accounts were set up at TAMU on November 14, 2013.
- c. TWRI/IRNR and SRS will submit the reimbursement forms at the end of this quarter.

16% Complete

Task 1.3: TWRI will host and maintain an Internet website for information sharing and use by watershed coordinators (<http://watershedplanning.tamu.edu/>). Information presented through the website will include:

- Project reports
- Short course, workshop, and roundtable agendas and participant lists
- Roundtable presentations generated, and roundtable agendas and summaries

- Schedule of upcoming programs
- Resources for Watershed Planning and Implementation
- Links to other training opportunities
- Links to EPA tools for Watershed Planning

The following actions have been completed during this reporting period:

- a. The Texas Watershed Planning Website can be found at <http://watershedplanning.tamu.edu/>
- b. TWRI has been reviewing and updating links to reports and resources as well as materials on the website including the November 2013 Short Course.
- c. The website includes the past QPRs, reports, and training materials
- d. The website includes links to other training opportunities
- e. The website includes the links to EPA tools for Watershed Planning
- f. The website over this quarter had 383 visits with 292 unique visitors and 948 Pageviews.

16% Complete

Task 1.4: TWRI will host coordination meetings or conference calls, at least quarterly, with Project Partners to discuss project activities, project schedule, communication needs, deliverables, and other requirements. TWRI will develop lists of action items needed following each project coordination meeting and distribute to project personnel.

The following actions have been completed during this reporting period:

- a. TWRI conducted a contract kickoff meeting with TSSWCB in College Station on January 21, 2014.
- b. TWRI was contacted by TSSWCB in January 28, 2014 to conduct and plan a watershed modeling using LDCs and SELECT training at the end of February 27 and 28, 2014.
- c. TWRI had multiple calls and emails with invited attendees to discuss the initial roundtable agenda “Improving Watershed Program Efficiency and Success” and select a date that worked best for all attendees.
- d. The Watershed Coordinators Roundtable was conducted in Temple on March 17th, 2014. Attendees list and Agenda are attached.

16% Complete

Task 1.5: TWRI will develop a final report that summarizes activities completed, conclusions reached during the project, and the extent to which project goals and measures of success have been achieved.

The following actions have been completed during this reporting period:

- a. Nothing to report this quarter.

0% Complete

TASK 2: Professional Training, Roundtable, and Watershed Planning Short Course Coordination

Provide training, coordination, and professional development for watershed planners and coordinators throughout Texas and across the nation to ensure consistent, high quality WPPs are developed, implemented, and water quality improvements are achieved and sustained.

Subtask 2.1 TWRI will coordinate with Texas A&M University faculty, Tetra Tech staff, and others to provide professional development and training for water resource professionals and watershed

coordinators in Texas. Over the project duration, a minimum of ten professional training programs are planned on watershed modeling, stakeholder facilitation, watershed outreach, and other tools for watershed plan development and implementation (i.e. 3-4 trainings/year). It is expected that each course will provide training for at least 15-20 water resource professionals for a total of 150-200 participants. As possible, these will be held in conjunction with the Watershed Coordinator Roundtables described below. A minimum of 1 of each of the following training programs will be delivered:

- *Introduction to Modeling – 1 event*
- *Watershed modeling using LDC (Load Duration Curves) and SELECT (Spatially Explicit Load Enrichment Calculation Tool) – 1 event*
- *Stakeholder facilitation – 2 events*
- *Watershed outreach using “Getting in Step” – 1 event*
- *Practical Environmental Statistics – 1 event*
- *Fundamentals of Developing a Water Quality Monitoring Plan – 2 events*
- *Social Marketing Training – 2 events*

As funding allows, TWRI will work closely with TSSWCB and the Project Team, to ensure that the most appropriate and needed trainings are offered for a second time that best meet the needs of the State and the watershed coordinators. Additional trainings will be considered based on a Project Team and Coordinator recommendations.

The following actions have been completed during this reporting period:

- a. TWRI has scheduled a contract kickoff meeting to discuss the project in January 2014.
- b. TWRI has developed an initial schedule of trainings and roundtables. See Attached.
- c. TWRI has scheduled and advertised the Practical Environmental Statistics Course for August 25-29, 2014.
- d. TWRI coordinated with Dr. Karthi to plan and conduct the first training Watershed Modeling using LDC and SELECT February 27-28, 2014. (Attached is the Agenda, Signin Sheet, Evaluation and Questionnaire, and training materials).
- e. TWRI coordinated with instructor to plan and schedule a Social Marketing Training in College Station in June 2014, Getting in Step and Stakeholder Facilitation in San Antonio during July 2014, and the Practical Environmental Statistics week long course in College Station in August of 2014.

16% Complete

Subtask 2.2 TWRI will continue to coordinate with the TSSWCB, TCEQ, and EPA to organize and facilitate a total of six (6) semi-annual Watershed Coordinator Roundtables. These face-to-face Roundtables will build upon the fundamental knowledge conveyed through the WPSC and establish a continuing dialogue between watershed coordinators in order to facilitate interactive solutions to common issues being faced by watershed coordinators statewide. Periodically, TWRI, in conjunction with the Project Team will review the continued need for semi-annual Roundtables as well as their specific timing. As such, these Roundtables are tentatively planned to be held in January and July at various locations around the state.

The following actions have been completed during this reporting period:

- a. TWRI and TSSWCB held the Kickoff meeting and discussed and set the first roundtable of 2014.
- b. TWRI is working on developing ideas for the initial roundtable agenda and invitees of key attendees including multiple emails during January to discuss the initial roundtable agenda for 2014 that will be used to plan topics and issues for the remaining roundtables to present to TSSWCB.

- c. A doodle poll was initiated to select the best date for the group and the meeting was held in Temple at the Blacklands Center on March 17th, 2014.
- d. TWRI reviewed the results of the roundtable results from the breakout sessions during the January 2013 Achieving Success in your Watershed Roundtable and presented this summary to the group as well as to also build ideas for future roundtables.

16% Complete

Subtask 2.3 TWRI will continue to coordinate and offer Watershed Planning Short Courses (WPSC). TWRI, with assistance from the Project Team, will identify key speakers for the course, make arrangements for facilities, advertise the WPSC, conduct registration, and facilitate the delivery of a minimum of one Texas WPSC to water resource professionals in Texas, as well as other states. The WPSC agenda and speakers will be modified to better meet the needs of watershed coordinators based on the past course evaluation results (See Subtask 2.4).

The following actions have been completed during this reporting period:

- a. Nothing to report this quarter.

0% Complete

Subtask 2.4 TWRI will oversee the administration of evaluations to gauge the knowledge gained, how effective the program was for each participant, and get input on future programs.

The following actions have been completed during this reporting period:

- a. Nothing to report this quarter.

8% Complete

Expected Work for the Next Quarter:

- TWRI will continue to work with TSSWCB to schedule trainings and roundtables.
- TWRI will work to schedule and coordinate the second watershed coordinators roundtable around July.
- TWRI will work to schedule and coordinate the appropriate trainings for 2014
- TWRI will continue to update the website with relevant materials, trainings, and links.
- TWRI will advertise upcoming scheduled trainings.

Appendices

Appendix A: Tentative Schedule of Trainings

Appendix B: Materials for Watershed Modeling Using LDCs and SELECT

Appendix C: Materials for Watershed Coordinator Roundtable – Invited Planning Roundtable

Appendix D: Materials for Applied Environmental Statistics Course

Training Event	Instructor	Workshop Date	Days	Location	Notes
Short Course	multiple	2015	5	Bandera?	
Texas Watershed Coordinator Roundtable	n/a	March 17, 2014	1	Temple	Invited attendees
Texas Watershed Coordinator Roundtable	n/a	Jul-14	1		
Texas Watershed Coordinator Roundtable	n/a	Jan-15	1		
Texas Watershed Coordinator Roundtable	n/a	Jul-15	1		
Texas Watershed Coordinator Roundtable	n/a	Jan-16	1		
Texas Watershed Coordinator Roundtable	n/a	Jul-16	1		
Intro Modeling Training	Srini	2015	1		
LDC/SELECT Model Training	Karthi	Feb 27-28, 2014	2	CS	Nikki has contacted Karthi
Getting in Step Training	MacPherson	Jul-14	1	San Antonio	Nikki has contacted MacPherson to schedule in July
Stakeholder Facilitation	MacPherson	Jul-14	1	San Antonio	Nikki will work to schedule in July
Stakeholder Facilitation	MacPherson	2016	1		
Social Marketing Training	Hays	June 18-19, 2014	1		Nikki has contacted Amy Hays to schedule
Social Marketing Training	Hays	2015	1		
Applied Environmental Statistics	Practical Stats	August 25-29, 2014	5	College Station	Kevin contacted to schedule and coordinate
Fundamentals of WQ Monitoring	Hauck	2015	2		
Fundamentals of WQ Monitoring	Hauck	2016	2		
Kickoff Meeting w/ TSSWCB	n/a	Jan 21, 2014		College Station	Nikki scheduled with TSSWCB
Quarterly Coord. Meeting w/ TSSWCB, TCEQ & EPA	n/a	Feb. 19, 2014		Conference Call	Kevin scheduled through Doodle Poll
Quarterly Coord. Meeting w/ TSSWCB, TCEQ & EPA	n/a	May 20, 2014		Conference Call	Danielle scheduled through Doodle Poll
Quarterly Coord. Meeting w/ TSSWCB, TCEQ & EPA	n/a	Aug-14			
Quarterly Coord. Meeting w/ TSSWCB, TCEQ & EPA	n/a	Nov-14			
Quarterly Coord. Meeting w/ TSSWCB, TCEQ & EPA	n/a	Feb-15			
Quarterly Coord. Meeting w/ TSSWCB, TCEQ & EPA	n/a	May-15			
Quarterly Coord. Meeting w/ TSSWCB, TCEQ & EPA	n/a	Aug-15			
Quarterly Coord. Meeting w/ TSSWCB, TCEQ & EPA	n/a	Nov-15			
Quarterly Coord. Meeting w/ TSSWCB, TCEQ & EPA	n/a	Feb-16			
Quarterly Coord. Meeting w/ TSSWCB, TCEQ & EPA	n/a	May-16			
Quarterly Coord. Meeting w/ TSSWCB, TCEQ & EPA	n/a	Aug-16			

Watershed Modeling using LDC and SELECT

Texas A&M University • College Station

Registration Form

(Please type or print) – Complete for Participant List

First Name: _____ Last Name: _____

Title: _____ Agency/Organization: _____

Address: _____

City: _____ State: _____ Zip: _____

Phone: _____ Fax: _____ Email: _____

Any special needs (dietary or other): _____

**

Registration fee includes: refreshments, course materials and a certificate of completion.

****Please note:** to be eligible for this discounted rate, non-federal funds should be used for course registration.

_____ **Registration** @ **\$150.00** \$ _____

Total Fees Submitted \$ _____

PAY BY:

☐ **Purchase Order (government/state only)** If paying by purchase order, please fax or email your registration form to Texas Water Resources Institute and submit copy to your bookkeeper for payment processing.

☐ **Check** - payable to Texas Water Resources Institute, Account **06-215071-89533**

☐ **Credit Card – MasterCard, Visa or American Express accepted**
Mail or fax completed credit card authorization form (see below)

Send payment to:

Texas Water Resources Institute
ATTN: LDC/SELECT Workshop
1500 Research Pkwy., Suite A110
College Station, TX 77843-2118

Questions may be directed to:

Nikki Dictson
Phone: (979) 458-5915
Fax: (979) 845-0662
E-mail: n-dictson@tamu.edu

Tax I.D. 74-6000541

This registration form serves as an invoice. Separate invoices will not be mailed. There will be no refunds for cancellations. Substitutions are allowed, providing that notification is sent to Nikki Dictson (n-dictson@tamu.edu) in advance.

**Texas AgriLife Extension Service
Credit Card Authorization Form**

Please print or type:

Date: _____

Name (as it appears on card): _____
(Please print)

Registrant's Name(s) (*if different from above*): _____
(Please print)

Billing Address for Credit Card: _____

Description of Purchase: Registration for LDC/SELECT Workshop
Texas A&M University, College Station, Texas

Amount: \$ _____

_____**MasterCard** _____**Visa** _____**American Express**
(Please check type of credit card above)

Credit Card Number:	3 digit security code from back of card:
_____	_____

Expiration Date: _____

Signature: _____

Telephone Number: _____

Watershed modeling using LDC and SELECT

February 27-28, 2014

Texas A&M University • Centeq Bldg. • Lab 212

Agenda

Thursday, Feb 27

10 a.m. to 5:00 p.m.

- | | |
|------------------|---|
| 10–10:30 a.m. | Introductions & Workshop Overview [K. Wagner, TWRI] |
| 10:30–11:15 a.m. | Introduction to Load Duration Curves [R. Karthikeyan & A. Virani, AgriLife Research] |
| 11:15–12 p.m. | LDC Demonstration [R. Karthikeyan & A. Virani, AgriLife Research] |
| 12–1:00 p.m. | Lunch (<i>catered lunch provided or bring your own</i>) |
| 1:00–2:00 p.m. | Assignment: Estimating Pollutant Loads for Attoyac Bayou Using LDCs [Group] |
| 2:00–3:00 p.m. | Discuss LDC Assignment [Group] |
| 3:00–3:20 p.m. | Break |
| 3:20–5:00 p.m. | Introduction to BASINS and SELECT [R. Karthikeyan & A. Virani, AgriLife Research] |

Friday, Feb 28

9 a.m. to 3:30 p.m.

- | | |
|-----------------|--|
| 9–9:30 a.m. | Gathering animal density data for SELECT [K. Wagner, TWRI] |
| 9:30–11 a.m. | SELECT Demonstration [R. Karthikeyan & A. Virani, AgriLife Research] |
| 11–11:20 a.m. | Break |
| 11:20–12 p.m. | Assignment: Estimating Pollutant Sources for Little Brazos River Using SELECT [Group] |
| 12–12:45 p.m. | Lunch (<i>catered lunch provided or bring your own</i>) |
| 12:45–2:15 p.m. | Complete SELECT Assignment [Group] |
| 2:15–3:15 p.m. | Discuss SELECT Assignment [Group] |
| 3:15–3:30 p.m. | Wrap Up [N. Dictson, TWRI] |

Watershed modeling workshop set for Feb. 27-28 in College Station

View all articles by Paul Schattenberg →

February 5, 2014

COLLEGE STATION—The Texas Water Resources Institute and Texas A&M University department of biological and agricultural engineering will present a watershed modeling workshop Feb. 27-28 at the Centeq Building on the Texas A&M campus in College Station.

The workshop will include hands-on instruction regarding load duration curves and the use of the Spatially Explicit Load Enrichment Calculation Tool, or SELECT, and Better Assessment Science Integrating Point and Nonpoint Sources tool, also called BASINS. Sessions will be in Lab 212 of the building, from 10 a.m.–5 p.m. on Feb. 27 and from 9 a.m.–3:30 p.m. on Feb. 28.

“This two-day class is for individuals developing watershed protection plans and total maximum daily loads to estimate pollution sources and loads to rivers,” said Dr. Kevin Wagner, associate director of the Texas Water Resources Institute.

The institute is part of Texas A&M AgriLife Research, the Texas A&M AgriLife Extension Service and the College of Agriculture and Life Sciences at Texas A&M University.

Load duration curves give a graphical representation of stream flow and pollutant loading so that real data can be compared to a stream’s maximum allowable load, explained coordinators. SELECT provides a spatially explicit analysis of land use, land cover, animals, humans and other variables in watersheds to help assess actual and potential sources of bacteria.

During the workshop, associate professor Dr. R. Karthikeyan and graduate research assistant A. Virani, both of Texas A&M’s biological and agricultural engineering department, will provide lectures on the use of load duration curves to assess pollutant loads. They will also instruct on the use of the modeling systems to target priority areas for pollution remediation and for integrating geographic information systems, national watershed data and the newest environmental assessment tools.

“Participants will gain hands-on experience in the use of these tools,” Wagner said. “The course will include discussions on gathering data to populate these models and how modeling is critically linked with watershed-based planning efforts.”

The registration fee of \$150 includes refreshments, lunch on both days, course materials and a certificate of completion.

One Texas Water Resources Institute continuing education unit will be available to those who successfully complete the course.

For more information about watershed modeling, go to <http://select.tamu.edu/>.

For more information in the workshop or to register, go to <http://watershedplanning.tamu.edu/training/>.



A watershed modeling workshop focused on load duration curves and the use of the SELECT and BASINS modeling tools will be held 9 a.m. to 3:30 p.m. Feb. 27-28 at the Centeq Building on the Texas A&M University campus. (Texas A&M AgriLife Extension Service photo)

Watershed Modeling Using LDC and SELECT

Slip In A	#	First	Last	Agency/Organization
1	1	Brad	Neish	Houston Advanced Research Center
2	2	Blake	Allredge	Texas Agrilife Extension Service
3	3	Brian	Koch	TSSWCB
4	4	Kristina	Tolman	The Meadows Center @ Texas State Univ.
5	5	Jody	Cason	Texas Agrilife Research
6	6	Matthew	Hendrix	City of Denton: Watershed Protection
7	7	Tina	Hendon	Tarrant Regional Water District
8	8	Linda	Shead	Double Bayou Watershed Partnership
9	9	Afreen	Virani	Indusnet
10	10	R	Karthikeyan	Texas A & M
11	11	Thomas	Hall	Texas A & M
12	12			
13	13			
14	14			
15	15			
16	16			
17	17			
18	18			
19	19			
20	20			

Training Questionnaire

Please indicate your affiliation			
1	Environmental Group		
	Academia		
	Consultant		
	Utility		
4	Government	1	City/County
		1	Regional
		2	State
			Federal
1	Other Non Profit		
Why is this training important and what do you hope to gain?			
I work as a GIS Analyst and use similar models for various projects. Our current project will use this software. I look forward to refining our NPS budney estimates and imporvoing the accuracy of our results			
Gain understanding of models for future use and to see how models were used in Granbury WPP development			
The city is honing a watershed protection plan we hope to use these models to show potential reductions from BMPs			
understanding of modeling and how it is used in watershed planning			
to get a better understanding of watershed modeling			
understand better the technical aspects of data needs and evaluation, hands on experience, help develop appropriate monitoring plan			
What watersheds are you working on or involved with?			
San Marcos			
Lake Granbury			
Hickory Creek, Cooper Creek, Pecan Creek, Clear Creek (Lewisville Lake)			
Trinity River			
Plum Creek, Geronimo/Alligator, Double Bayou, Cedar Bayou, South Central TX, etc			
Eagle Mountain Lake, Cedar Creek Reservoir, Richland-Chambers, Upper Trinity			
What are your greatest challenges in estimating the current loads, needed load reductions and scale and resolution			
N/A - already been done on watershed			
lack of physical data, adequate threshold prediction for phosphorus loading and subsequent chlorophyll levels			
getting a better understanding what and wehere and how much of pollution sources exist in specific watersheds			
lack of temporally and spatially appropriate data - specifically flow and bacteria			

Watershed Modeling Using LDC and SELECT Training
May 7-8, 2013

What tools or methods do you currently use for estimating the current loads, needed load
HSPF
SWAT
stakeholder input, existing data, data collected during projects, other existing resources
SWAT, QUALZE, WASP
What are your greatest needs in regards to estimating the current loads, needed load reductions,
scale:resolution
in order for TCEQ to improve, we were told we need to determine a threshold of impairment
probably filling data gaps
finding the appropriate level of data, data analysis to inform the relevant issues or answer the most relevant questions

May 7-8, 2013

Did this workshop meet your expectations?				
0	1 (Fell short of expectations)			
0	2			
1	3			
1	4			
6	5 (Exceeded expectations)			
What were the most valuable aspects of this workshop?				
I really learned a lot about calculating load duration curves and various forms of calc. e coli data. Understand how to interpret and create professional LDCs - which will be extremely useful for our WPP. SELECT seems like an excellent tool - I look forward to using it				
Hands on experience, access to experts, open discussion among students, flexibility of agenda and instructors in answering questions and meeting student's needs				
Overall very good, my expectations were exceeded				
I honestly came into this with little knowledge of what was going to be covered, but was thoroughly impressed. I liked it a lot				
Everything was valuable				
understanding the process of the model and running through the process				
examples, asking questions				
commitment, experience, and patience of the instructors, workshop manual, individual attention, and individual computer stations				
What were the least valuable aspects of this workshop?				
None come to mind!				
N/A				
Nothing				
downloading data, simple tasks (clip, project) would have liked walk through example of septic				
requires GIS experience to keep up on SELECT, my own lack of experience with some excel graphs and GIS				
Introduction to Load Duration Curves (R. Karthikeyan and B. Wagner)				
Excellent		Good	Average	Poor
6		1	1	
Comments				
Introduction to Load Duration Curves (R. Karthikeyan and B. Wagner)				
Excellent		Good	Average	Poor
8				
Comments				
LDC Demonstration (R. Karthikeyan and B. Wagner)				
Excellent		Good	Average	Poor

Watershed Modeling Using LDC and SELECT Training
May 7-8, 2013

	6	1		
Comments				
<i>Assignment: Estimating Pollutant Loads for Plum Creek using</i>	Excellent	Good	Average	Poor
	6	1		
Comments				
<i>Introduction to SELECT (R. Karthikeyan and Borel)</i>	Excellent	Good	Average	Poor
	7			
Comments				
<i>Gathering Animal DensityData for SELECT (Wagner)</i>	Excellent	Good	Average	Poor
	6	1		
Comments				
<i>SELECT Demonstration (R. Karthikeyan and Borel)</i>	Excellent	Good	Average	Poor
	5	1	1	
Comments				
<i>Assignment: Estimating Pollutant Sources for Plum Creek</i>	Excellent	Good	Average	Poor
	5	2		
Comments				
<i>Wrap Up (Dictson)</i>	Excellent	Good	Average	Poor
	4	1		
Comments				
Additional Comments				
Great Job!				

Texas Watershed Coordinator Roundtable
Improving Watershed Program Efficiency & Success

March 17, 2014
9:30 a.m. — 3:30 p.m.

Texas A&M AgriLife Blackland Research and Extension Center • TEDC Conf. Room
800 East Blackland Road, Temple, TX 76502

- | | |
|--------------------|--|
| 9:30 – 9:45 a.m. | Welcome & Introductions |
| 9:45 – 10:00 a.m. | Review Key Outcomes from January 2013 Roundtable Discussion on Achieving Success in Your Watershed |
| 10:00 – 12:00 p.m. | <i>Roundtable Discussion on Issue #1 – What can we do to improve efficiency?</i> |
| 12:00 – 12:40 p.m. | Catered networking lunch (or bring your own) [RSVP required] |
| 12:40 – 2:40 p.m. | <i>Roundtable Discussion on Issue #2 – What can we do to improve effectiveness?</i> |
| 2:40 – 3:00 p.m. | Summarize Actions, Outline Next Steps & Identify Leads |
| 3:00 – 3:25 p.m. | <i>Roundtable Discussion on Highest Priority Topics for Future Roundtables</i> |
| 3:25 – 3:30 p.m. | Wrap-Up <ul style="list-style-type: none">• Upcoming Trainings:<ul style="list-style-type: none">- Stakeholder Facilitation- Social Marketing- Applied Environmental Statistics• Next Roundtable<ul style="list-style-type: none">- Date: July 2014 |

From: Kevin Wagner
To:

Cc:
Subject: Roundtable on Improving Watershed Program Efficiency & Success
Date: Sunday, March 09, 2014 12:57:48 PM
Attachments: January 2014 Roundtable Agenda DRAFT2.docx

Good afternoon. Attached is the agenda for our Roundtable on *Improving Watershed Program Efficiency & Success* scheduled for March 17 from 9:30-3:30 in Temple.

We will be discussing:

1. What we can do to improve the efficiency of the watershed program
2. What we can do to improve the effectiveness of our watershed efforts
3. Priority topics for future Roundtables

For lunch we will only be breaking for 40 minutes. As such, we ordered sandwich trays from McAlister's (half wraps and half sandwiches). **Lunch will be \$10/person or feel free to bring your own. Let us know which option you prefer.** Also, for those eating McAlister's, let us know if you have any dietary restrictions.

Thanks everyone for your participation.

Best regards,

Kevin Wagner, PhD
Associate Director
Texas Water Resources Institute | Texas A&M Institute of Renewable Natural Resources

1500 Research Parkway, Suite 240 | 2260 TAMU | College Station, TX 77843-2260
Office. 979.845.2649 | Cell. 979.204.9101 | Fax. 979.845.0662
klwagner@ag.tamu.edu | twri.tamu.edu | irnr.tamu.edu

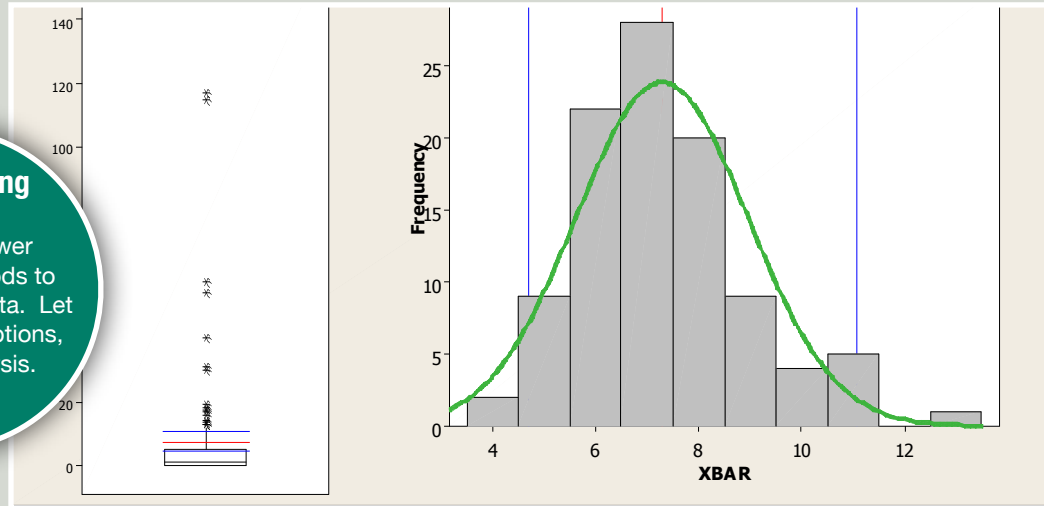
Texas A&M AgriLife Research
Texas A&M AgriLife Extension
Texas A&M University College of Agriculture and Life Sciences

= Practical Stats

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Bootstrapping

One of the newer statistical methods to analyze messy data. Let data, not assumptions, drive the analysis.



Applied Environmental Statistics

Statistics, down to earth

This 4.5 day course develops hands-on expertise for all environmental scientists who interpret data and present their findings to others. A complete understanding of how statistical methods work unfolds through applications to field-oriented problems in water quality, air quality, and bio contaminants. Statistical methods are explained in the light of data with nondetects, outliers, and skewed distributions. Methods for estimation and prediction are illustrated along with their common pitfalls. Emphases include nonparametric methods, including permutation tests and bootstrapping.

Course Content:

- ✿ Trend analysis -- is it getting better or worse?
- ✿ Confidence, prediction, tolerance & equivalence intervals.
- ✿ How hypothesis tests work.
- ✿ Parametric, nonparametric and permutation tests. When to use which.
- ✿ How to build a good regression equation.
- ✿ Dealing with outliers.
- ✿ When are transformations OK?
- ✿ How many samples do I need?
- ✿ and more.



Interactive and relevant

Student exercises follow each lecture to ensure that when you return to the office, so does your new knowledge

Applied Environmental Statistics

Course Outline

DAY 1

Describing Data in a Group

- Estimation
- Good graphs
- Dealing with outliers
- When to transform

How Hypothesis Tests Work

- Their common denominators
- Their jargon explained
- 1-sided and 2-sided tests

Statistical intervals

- Coping with uncertainty
- Coping with skewed data
- Confidence, prediction, tolerance intervals
- Bootstrapping

Contingency Tables

- Does the frequency change between groups?
- Use with censored data

DAY 2

Comparing Two Groups of Data

- Are means, medians different?
- Parametric and nonparametric tests
- Paired data
- The quantile test

How many observations do I need?

- Weaknesses of standard formulae
- Interactions between variation, power, and dollars
- Software available

Comparing Three or More Groups

- one- and two-factor ANOVA
- non-parametric alternatives
- multiple comparison tests: who's different?

Testing differences in Variability/Precision

- Characterizing differences in variability
- Levene's & Squared Ranks tests

Correlation

- Linear and monotonic correlation
- r, rho and tau
- Kendall's linear model

DAY 3

Linear Regression

- How to build a good regression model
- Measures of quality better than r-squared
- Hypothesis tests, confidence and prediction intervals
- Load estimation

Multiple Regression

- Dealing with multi-collinearity
- How to do better than stepwise selection
- Residual and probability plots

Which test to use?

Get the answer from the guide on our website.

= Practical Stats

Applied Environmental Statistics

Course Outline

DAY 4

Analysis of Covariance

- Do two lines differ?
- Seasonal changes
- Testing differences in slope and intercept

Trend Analysis

- Selecting a trend test
- Regression vs. nonparametric approaches
- Monotonic and step trends
- Dealing with seasonality
- Regional trends
- Seasonal Kendall test for trend

FINAL EXAM

Download the free course textbook
Statistical Methods in Water Resources,
published by the US Geological Survey
in 2002, can be downloaded from our
Books page at:
practicalstats.com/books/

DAY 5

Logistic Regression

- Regression for categorical responses
- Application to nondetects, ratings, and qualitative field methods
- Exercise: predicting atrazine detections in streams

Equivalence Tests

- Differences from standard statistical tests
- Testing for differences that are "big enough"
- Equivalence between groups, trends