-- Course Curriculum --

"Water Quality Short Course"

(ISE 471)

Boone County Extension Office
Columbia, Missouri
April 10-12, 2007

If not available or available elsewhere, it will be indicated

TIME	TUESDAY, APRIL 10, 2007	
8:00 - 8:15	Welcome and Course Overview	Bob Ball, NRCS
8:15 - 8:45	Nonpoint Source Management Plan: Issues & Opportunities	Greg Anderson, MDNR
8:50 - 9:30	Water Quality Standards, The 303(d) List, and TMDLs	Phil Schroeder, MDNR
9:30 - 9:45	***BREAK***	
9:45 - 10:15	Cropland Erosion, Sediment Delivery, & Deposition (NOT AVAILABLE)	Clayton Lee, NRCS
10:20 - 11:00	Phosphorus in the Environment (CONTACT DR. LORY)	Dr. John Lory, UMC
11:05 – 11:55	Nitrogen in the Environment	Dr. Peter Scharf, UMC
12:00 - 1:15	***LUNCH***	
1:15 - 2:00	Macroinvertebrate Sampling & ID	Tim Rielly, MDC
2:00 - 2:15	***BREAK***	
2:15 – 2:30	Water Quality Indicators Guide (Overview)	Bob Ball, NRCS
2:30 - 4:30	Field Trip to Grindstone Creek	Tim Rielly, MDC / Mary Clark, MDNR
4:30 - 5:00	Water Quality Indicators Guide (Using the WQIG) DOWNLOAD AVAILABLE AT http://www.id.nrcs.usda.gov/technical/wq_indicators_guide.html)	Clif Baumer, NRCS

TIME	WEDNESDAY, APRIL 11, 2007	
8:00 - 8:40	Lake and Reservoir Dynamics	Dan Obrecht, UMC
8:45 - 9:25	Conservation Effects Assessment Program	Dr. John Sadler, USDA-ARS
9:30 - 10:00	Pesticides & Pest Management: Impacting the Environment	Paul Andre, MDA
10:00 - 10:15	***BREAK***	
10:15 - 10:45	Web-Based Tools for Environmental Planning	Chris Barnett, CARES
10:50 - 11:25	On-Site Sewage Disposal: Rules & Regulations	Jim Gaughan, DOHSS
11:30 - 12:00	Microbial Source Tracking: Emerging Technology for Water Quality	Dr. Andy Carson, UMC
12:00 - 1:15	***LUNCH***	
1:15 - 2:00	Stream Dynamics I: Ecology Biological Significance of Degraded Water Quality	Dr. Doug Novinger, MDC
2:00 - 2:15	***BREAK***	
2:15 - 3:15	Stream Dynamics II: Morphology	Ange Corson, MDC
3:15 – 4:30	Conservation Buffers and Pollution Reduction	Dr. Michael Gold/Ranjith Udawatta, UMC
4:30 - 5:00	Latest on CAFO Regulations and Livestock Manure	Charlie Fulhage, UM-Ext

TIME	THURSDAY, APRIL 12, 2007	
8:00 - 8:40	Urban Erosion & Sediment Pollution	Dr. Allen Thompson, UMC
8:40 - 9:15	What's Coming Downstream	Liz Grove, Clarence Cannon Wholesale Water Supply
9:20 - 10:00	WRASP, SIP and Water Quality Standard (IF INTERESTED IN OBTAINING THE DVD GO TO www.erc-env.org)	Abby Welschmeyer, Betty Wyse and Candy Schilling ERC and MCGA
10:00 - 10:15	***BREAK***	
10:15 - 11:00	Missouri Groundwater Assessments	Jim Vandike, MDNR
11:05 - 11:40	Water Quality Monitoring: Data Collection & Analysis	Miya Barr, USGS
11:45 - 12:15	Watershed Management Assessment Through Modeling: SALT and CEAP	Dr. Claire Baffaut, FAPRI
12:15 - 1:15	***LUNCH***	
1:15 - 1:45	Watershed Management Planning	Dan Downing, UM-Ext
1:50 - 2:30	Locating Assistance to Improve Water Quality (INFORMATION AVAILABLE AT THE FOLLOWING WEBSITES: http://www.mowin.org/, http://cares.missouri.edu/index.asp, and http://msdisweb.missouri.edu/)	Frank Wideman, UM-Ext
2:30 - 2:45	Course Evaluation and Wrap-Up	Bob Ball, NRCS

Follow-up from Dan Obrecht:

Converting Pounds To Micrograms Per Liter

1 pound = 4536g = 453,600,000 micrograms

To aid in the understanding of what a pound of phosphorus per acre watershed translates to in terms of in-lake phosphorus concentration I've come up with the following scenario based on a nearby lake:

The lake - 15 acres, average depth 10.1 feet and a volume of 152 acre/feet
The watershed – 136 acres of agriculture (crop and pasture)

If the watershed lost 1 pound of phosphorus per acre as runoff and it ended up in the lake we would be adding 136 pounds of phosphorus to the lake. Once you do the calculations to get the phosphorus into micrograms and the lake volume into liters of water, you end up with an in-lake phosphorus concentration of 329 micrograms per liter. We generally consider a phosphorus concentration of 100 micrograms per liter as being the point where we are moving into extreme levels.