



*Speaker Bios & Abstracts*



*The Illinois River: Working Locally—Reaching Globally*



**CONFERENCE  
PROGRAM**



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14TH BIENNIAL GOVERNOR'S CONFERENCE  
ON THE MANAGEMENT OF THE ILLINOIS RIVER SYSTEM



OCTOBER 1–3, 2013  
FOUR POINTS BY SHERATON  
PEORIA, ILLINOIS



## ◆ WELCOME ◆

Dear 2013 Conference Participants:

On behalf of the Planning Committee, we want to welcome you to the 2013 Governor's Conference on the Management of the Illinois River System. This fourteenth biennial conference continues a tradition begun in 1987, when then Governor James R Thompson joined with a group of concerned citizens to focus attention on the growing problems of erosion and sedimentation along the Illinois River and its tributaries. They believed bringing various state and federal organizations together in a common forum would help begin the process of discovering solutions to these problems. This biennial conference held in Peoria, continues to grow, benefiting from the strong support of Governor Pat Quinn. This year's conference theme is "The Illinois River: Working Locally – Reaching Globally", emphasizing the environmental and economic impact the Illinois River has on a global scale.

Some of the highlights you can expect from this year's conference:

- Illinois River Coordinating Council (IRCC) meeting held on Tuesday evening October 1st, 6:30-8:30 pm including a Public Forum for discussion, comments, and questions. The Mississippi River and Ohio and Wabash River Coordinating Council members have also been invited to attend.
- Watershed Conservation Tour on Tuesday, October 1st.
- RiverWatch Symposium on Tuesday, October 1st.
- Illinois Drought Workshop on Tuesday, October 1st.
- Plenary keynote speakers from The Nature Conservancy, Caterpillar Inc., Illinois Farm Bureau, Shauman Farm, U.S. Army Corps of Engineers, and the Mississippi River Distilling Company will give us a view of the environmental and economic activities in the Illinois River and their global reach.
- Twelve concurrent sessions allowing you to select from a wide array of topics of greatest interest to you.
- Ever popular "Integrated Digital Technologies Open House" on Wednesday, October 2nd where you can learn about digital information resources available from local, state, and federal organizations– all in one room!
- Extensive list of exhibitors waiting to show you their latest activities and education opportunities.
- Special riverboat cruise on the Spirit of Peoria Wednesday evening, October 2nd with opportunities to visit with local experts about interesting and unique locations that you'll pass by during the cruise!
- Great opportunities to network with Illinois River water and watershed resource experts!

On behalf of our Planning Committee, we truly hope you will find this conference to be informative, stimulating, and enjoyable!

Sincerely,



Christine Davis  
Conference Co-Chair  
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## ♦ Introduction & History of Governor's Conference ♦

In 1985, a group of concerned scientists, citizens and river activists began to focus new attention on the growing problems of sedimentation and erosion along the Illinois River and its tributaries. Collectively, this group of individuals formed the nucleus for the planning committee for the First Governor's Conference on the Management of the Illinois River System, which was held at the Hotel Pere Marquette, Peoria, IL on April 1-3, 1987. Governor James R. Thompson believed bringing various state and federal agencies and organizations together in a common forum would help begin the process of discovering solutions to these problems.

Since 1987, this conference has continued to be held on a biennial basis in Peoria - midway on the Illinois River between Chicago and Grafton. Governors Jim Edgar, George Ryan, Rod Blagojevich, and Pat Quinn have continued this strong tradition by providing a Governor's designation to this conference, thus demonstrating the high priority being placed upon our natural resources.

Over the past twenty-six years, the Governor's Conferences on the Management of the Illinois River System have served as an important forum to bring together local, state, and federal leaders to create awareness of the issues of soil erosion and sedimentation, identify important river research initiatives, develop working coalitions, apply conservation practices to the watershed, prepare new river and watershed legislation, and provide for state and federal funding to address the issues of the Illinois River System.

The foundations for the following programs can be directly attributed to successful interagency and multi-disciplinary cooperation, fostered at the Governor's Illinois River Conferences and subsequently implemented at the local, state and federal level:

- Development of low-cost streambank stabilization methods with state and federal funding
- Formation and development of numerous watershed treatment programs for landowners, funded through U.S. Department of Agriculture, U.S. Army Corps of Engineers, U.S. Environmental Protection Agency, U.S. Fish and Wildlife Service, Illinois Department of Agriculture, Illinois Department of Natural Resources, Illinois Environmental Protection Agency and local Soil and Water Conservation Districts. Examples include:
  - o USFWS Partners for Wildlife and Fish Program has assisted landowners in restoring over 6,000 acres of habitat along the Illinois River
  - o U.S. Army Corps of Engineers Habitat Restoration and Enhancement Projects completed at Swan Lake, Banner Marsh, Lake Chautauqua, Stump Lake, and Peoria Lake Islands
  - o USFWS established the 11,122 acre Emiquon National Wildlife Refuge of which the Service now owns 2,114 acres and The Nature Conservancy owns 7,063 acres
  - o IDNR completed land acquisition efforts at the Double T Fish and Wildlife Area, the Duck Ranch at Henry, IL; The Wetland Initiative's 2,500 acre Hennepin Hopper restoration effort
  - o The Audubon Society's purchase of Plum Island; and Ducks Unlimited Spring Lake acquisition and restoration.
- Formation and operation of the Illinois River Coordinating Council
- Development of the Integrated Management Plan for the Illinois River System
- Illinois Conservation 2000 Programs and Funding
- Illinois River Conservation Reserve Enhancement Program led by efforts of U.S. Congressman Ray LaHood - 123,000 acres presently enrolled
- Illinois Rivers 2020 Initiative
- Development of the Stream and Watershed Assessment and Restoration Program (SWARP).
- "Mud to Parks" Dredging & Re-Use of Sediment from the Illinois River
- Island construction on the Illinois River utilizing dredging sediment
- Illinois Partners for Conservation Program

The conference attendance has ranged from 150 to over 400 participants who represent a diversity of backgrounds, agencies, organizations, and communities. Each conference planning committee presented an agenda designed to continue the tradition of bringing the latest in developments and management techniques to those working towards protecting the Illinois River System for future generations. Dozens of local, state, and federal agencies and organizations currently serve as Conference Co-Sponsors and a number provide financial support of the conference. The following four individuals have faithfully served on the first eleven of the State Conference Planning Committees by sharing their knowledge and expertise: Bob Frazee, University of Illinois Extension; Steve Havera, Illinois Natural History Survey; Gary Clark, Illinois Dept. of Natural Resources; and Rick Mollahan, Illinois Dept. of Natural Resources and Illinois Environmental Protection Agency. Glenn Stout, University of Illinois Water Resources Center, provided leadership for organizing the First Governor's Conference on the Management of the Illinois River System by serving as the first Conference Chair. Subsequent conference leadership has been provided by:

1989 | Bob Frazee, University of Illinois Extension, Chair

1991-1995 | Bob Frazee, University of Illinois Extension and Roberta Parks, Peoria Area Chamber of Commerce, Co-Chairs

1997-2003 | Bob Frazee, University of Illinois Extension and Steve Havera, Illinois Natural History Survey, Co-Chairs

2005-2007 | Bob Frazee, University of Illinois Extension and Kim St. John, Natural Resources Conservation Service- Prairie Rivers Resource, Conservation and Development, Co-Chairs

2009 | Kim St John, USDA-Natural Resources Conservation Service and William P. White, University of Illinois, Institute of Natural Resource Sustainability, Illinois State Water Survey, Co-Chairs

2011 | William P. White, University of Illinois, Prairie Research Institute, Illinois State Water Survey; Christine Davis, Illinois Environmental Protection Agency; and Rick Mollahan, Illinois Department of Natural Resources, Co-Chairs

2013 | Christine Davis, Illinois Environmental Protection Agency and Laura Keefer, Illinois State Water Survey, Prairie Research Institute, University of Illinois, Co-Chairs

\*Original compilation by: Bob Frazee, University of Illinois Natural Resources Educator, E-mail: rfrazee@uiuc.edu, April 2007.

## • Conference Proceedings Information •

Conference Proceedings have been compiled by the University of Illinois Water Resources Center for each of the biennial Illinois River Conferences. The Illinois Rivers Decision Support System, affiliated with the Illinois State Water Survey at Champaign-Urbana, Illinois has a section of their webpage devoted to providing the Conference Proceedings for each of the past thirteen conferences at <http://ilrdss.sws.uiuc.edu>.

Included for each conference are the conference agenda, topics, speakers, printed presentations, conservation tours, exhibits, public forums, and related activities. Listed below are the date and location of the first thirteen Governor's Conferences on the Management of the Illinois River System.

1st | 1987 | April 1-3, 1987, Hotel Pere Marquette, Peoria, IL

2nd | 1989 | October 3-4, 1989, Hotel Pere Marquette, Peoria, IL

3rd | 1991 | October 22-23, 1991, Hotel Pere Marquette, Peoria, IL

4th | 1993 | September 21-22, 1993, Hotel Pere Marquette, Peoria, IL

5th | 1995 | October 10-11, 1995, Hotel Pere Marquette, Peoria, IL

6th | 1997 | October 7-9, 1997, Holiday Inn City Centre, Peoria, IL

7th | 1999 | October 5-7, 1999, Holiday Inn City Centre, Peoria, IL

8th | 2001 | October 2-4, 2001, Holiday Inn City Centre, Peoria, IL

9th | 2003 | October 7-9, 2003, Holiday Inn City Centre, Peoria, IL

10th | 2005 | October 4-6, 2005, Holiday Inn City Centre, Peoria, IL

11th | 2007 | October 2-4, 2007, Holiday Inn City Center, Peoria, IL

12th | 2009 | October 20-22, 2009, Hotel Pere Marquette, Peoria, IL

13th | 2011 | October 4-6, 2011, Hotel Pere Marquette, Peoria, IL

14th | 2013 | October 1-3, 2013, Four Points by Sheraton, Peoria, IL; Proceeding will be available to download from the Illinois Rivers Decision Support System (<http://ilrdss.sws.uiuc.edu>) by March 2014.

STATE OF ILLINOIS  
EXECUTIVE DEPARTMENT  
Proclamation

*WHEREAS, the Illinois River is a critical component of our state's geography, history, economy, and ecology; and,*

*WHEREAS, many attributes are threatened as a result of the cumulative effects of human activities that have significantly altered the Illinois River System; and,*

*WHEREAS, the State of Illinois is embracing an integrated approach to large river management and is working in a coordinated and continuous manner for the Illinois River; and,*

*WHEREAS, implementation of the Illinois River Coordinating Council, Conservation Reserve Enhancement Program, Partners for Conservation, Open Lands Trust Fund, Mud to Parks Capital Program, Illinois Wildlife Action Plan, Farm Bill Conservation Title, Designation of two Illinois River sites as Ramsar Wetlands of International Importance, National Streamflow Information Program, Partners for Fish and Wildlife Program, Illinois River Road National Scenic Byway, and Illinois Recreational Access Program are important milestones in efforts to protect the resources of the Illinois River; and,*

*WHEREAS, the theme of the 2013 Conference on the Management of the Illinois River System is focused on "The Illinois River: Working Locally – Reaching Globally"; and,*

*WHEREAS, the conference will be taking place October 1-3, 2013, at Four Points by Sheraton Hotel in Peoria, Illinois; and,*

**THEREFORE, I, Pat Quinn, Governor of the State of Illinois, do hereby proclaim October 2013 as ILLINOIS RIVER MANAGEMENT MONTH, and encourage all citizens to recognize the economic, recreation, social, and environmental benefits of conserving and managing to properly utilize and sustain the resources of the Illinois River System.**

*In Witness Whereof, I have hereunto set my hand and caused the Great Seal of the State of Illinois to be affixed.*



*Deese White*

SECRETARY OF STATE

*Done at the Capitol, in the City of Springfield,  
this TWENTY-FOURTH day of JUNE, in  
the Year of Our Lord two thousand and  
THIRTEEN, and of the State of Illinois  
the one hundred and NINETY-FIFTH*

*Pat Quinn*

GOVERNOR

# ◆ Conference Overview ◆

## TUESDAY, OCTOBER 1, 2013

- 8:15–9:00 AM | Registration and Continental Breakfast
- 9:00 AM–4:30 PM | Conservation Tour
- 9:00 AM–4:15 PM | RiverWatch Symposium
- 1:00–5:00 PM | Illinois Drought Workshop
- 1:00–6:15 PM | Registration and Exhibit Setup
- 6:00–6:30 PM | Illinois River Coordinating Council Reception
- 6:30–8:30 PM | Public Forum–Illinois River Coordinating Council

## WEDNESDAY, OCTOBER 2, 2013

- 7:45 AM–4:30 PM | Registration/Information Desk
- 7:45–8:30 AM | Continental Breakfast; Visit Exhibits
- 8:30–8:45 AM | Opening Remarks
- 8:45–10:00 AM | Plenary Session One
- 10:00–10:30 AM | Break; Visit Exhibits
- 10:30–11:30 AM | Plenary Session Two
- 11:45 AM–1:15 PM | Lunch/Feature Presentation
- 1:30–2:45 PM | Concurrent Sessions
- 1:30–4:30 PM | Interactive Digital Technologies Open House
- 2:45–3:15 PM | Break; Visit Exhibits
- 3:15–4:30 PM | Concurrent Sessions
- 5:15–8:00 PM | Evening Boat Cruise on the Spirit of Peoria

## THURSDAY, OCTOBER 3, 2013

- 7:45 AM–Noon | Registration/Information Desk
- 7:45–8:30 AM | Continental Breakfast; Visit Exhibits
- 8:30–9:45 AM | Concurrent Sessions
- 9:45–10:15 AM | Break; Visit Exhibits
- 10:15–11:30 AM | Concurrent Sessions
- 11:45 AM–1:15 PM | Lunch/Feature Presentation
- 1:15–1:30 PM | Closing Comments and Adjourn



# ◆ Conference Agenda ◆

## TUESDAY, OCTOBER 1, 2013

1:00–6:15 PM | **Lower Lobby**

Conference Registration and Exhibit Setup

6:00–6:30 PM | **Salon C**

Illinois River Coordinating Council Reception

Hors d'oeuvres and beverages (cash bar)

6:30–8:30 PM | **Salon C**

Public Forum—Illinois River Coordinating Council



Lt. Governor Sheila Simon invites members of the public to attend the 3rd quarter meeting of the River Coordinating Councils. This meeting will be a joint meeting between the Illinois River, Mississippi River and Wabash and Ohio Rivers Coordinating Councils and will include a public forum.

Lt. Governor Sheila Simon chairs three River Coordinating Councils charged with the mission of reviewing state and federal programs that impact the watersheds and working with local communities to raise awareness of and address watershed issues. The River Coordinating Councils meet quarterly around the state to engage the public and encourage partnerships.

## WEDNESDAY, OCTOBER 2, 2013

7:45 AM–4:30 PM | **Lower Lobby**

Registration / Information Desk

7:45–8:30 AM | **Salon A & B**

Continental Breakfast; Visit Exhibits

8:30–8:45 AM | **Salon D**

Opening Remarks

**Laura Keefer**, Conference Co-Chair, Illinois State Water Survey, Prairie Research Institute, University of Illinois at Urbana-Champaign

Welcome Address

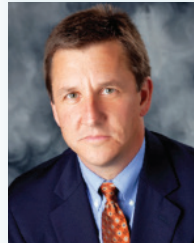
**Eric Turner**, City Councilman, City of Peoria

8:45–10:00 AM | **Salon D**

Plenary Session One

Working Locally ~ Reaching Globally; Linking Multiple Scales in Conservation and Industry

**Moderator: Mike Demissie**, Illinois State Water Survey, Prairie Research Institute, University of Illinois at Urbana-Champaign



*The Illinois River: It Plays in Peoria...and Shanghai, Bogota, Santarem, Libreville and Beyond*

**Michael Reuter**, The Nature Conservancy



*Global and Regional Economy*

**Michele Sullivan**, Caterpillar, Inc.

10:00–10:30 AM | **Salon A & B**

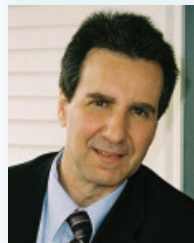
Break; Visit Exhibits

10:30–11:30 AM | **Salon D**

Plenary Session Two

Illinois in the Global Economy: World Food Demand, Production and Distribution

**Moderator: Lauren Lurkins**, Illinois Farm Bureau



*Illinois Agriculture & Global Trade*

**Mike Doherty**, Illinois Farm Bureau



*World Food Demand & US Competitive Challenges*

**Wendell Shauman**, Shauman Farm

11:45 AM–1:15 PM | **Salon C**

## Lunch / Feature Presentation

**Moderator: Marc Miller**, Illinois Department of Natural Resources



*The Great Lakes and Mississippi River Interbasin Study (GLMRIS)*

**David Wethington**, US Army Corps of Engineers

1:30–4:30 PM | **Conference Room I**

## Interactive Digital Technologies Open House

**Moderators: Andrew Phillips**, Illinois State Geological Survey, Prairie Research Institute, University of Illinois at Urbana-Champaign, and **Gary Johnson**, U.S. Geological Survey, Illinois Water Science Center

Every day more data and Web-tools that can help you accomplish your resource management goals come on-line. Visit the Interactive Digital Technologies Open House to spend one-on-one time with representatives from local, state, and federal organizations to get the low-down on the data and tools that are available to you. Invest a small amount of time now and learn how to 1) identify, acquire, and understand available data, 2) turn data into useful illustrations or maps, and 3) combine various data to answer your questions.

Both novice and advanced users are welcome. The presenters work with these tools daily; they know the tips and tricks to get the right results—right away! And if that's not enough to get you to step inside—check out the 'golden ticket' in your conference packet. You have a chance to win a really cool techy-gadget.

### Presentations:

*How to Access USGS Water Resources Data*

**Gary Johnson**, U.S. Geological Survey, Illinois Water Science Center

*NEW at the Geospatial Clearinghouse—LiDAR, Water Wells, Orthoimagery and Much More...*

**Dee Lund**, Illinois State Geological Survey, Prairie Research Institute, University of Illinois at Urbana-Champaign

*The Illinois River Decision Support System (ILRDSS)*

**Phil Graff**, Illinois State Water Survey, Prairie Research Institute, University of Illinois at Urbana-Champaign

*The National Map*

**Shelley Silch**, U.S. Geological Survey

*Resource Management Mapping Service (RMMS): A Tool for Watershed Stakeholders*

**Carolyn White**, University of Illinois at Urbana-Champaign

*Interactive Technology from the Midwestern Regional Climate Center*

**Zoe Zaloudek**, Illinois State Water Survey, Prairie Research Institute, University of Illinois at Urbana-Champaign

*Using Augmented Reality (AR) in Scientific Outreach*

**Kingsley Allan**, Illinois State Water Survey, Prairie Research Institute, University of Illinois at Urbana-Champaign

*LiDAR: Detail at Your Fingertips*

**Tim Prescott**, USDA Natural Resources Conservation Service

*Illinois' Source Water Protection Program GIS Update*

**Joe Konczyk**, Illinois Environmental Protection Agency

*Managing Geospatial Data in the Cloud*

**Eric Miller**, Tri-County Regional Planning Commission

*Demonstration of GIS Data and Functions used by Illinois Department of Transportation Facilities, Offices, and Bureaus*

**Curt Reynolds**, Illinois Department of Transportation

*Green Infrastructure Planning through the South Suburban Mayors and Managers Association GIS Atlas*

**Dennis Latto** and **José Alarcón**, South Suburban Mayors and Managers Association

1:30–2:45 PM

## Concurrent Sessions

Session A-1 | **Rooms III & IV**

*Illinois Waterways: Infrastructure Needs and Beneficial Use of Sediment*

**Moderator: Terry Weldin-Frisch**, Illinois Department of Commerce and Economic Opportunity

*A Decade of Experience with Beneficial Use of Sediment in Illinois*

**John Marlin**, Illinois Sustainable Technology Center, Prairie Research Institute, University of Illinois at Urbana-Champaign

*Leadership and Role of Business on Waterway Infrastructure Projects*

**Ben Brockschmidt**, Illinois Chamber of Commerce Infrastructure Council

*Innovative, Alternative Delivery Methods for Replacement of Locks and Dams*

**Thomas O'Hara**, CH2M Hill

Session B-1 | **Hamilton**

*Natural Resources 1—Identifying and Responding to Habitat Needs*

**Moderator: Andrew Casper**, Illinois Natural History Survey-Illinois River Biological Station

*Emiquon Complex Designated a RAMSAR Wetland of International Importance—A Local Global Achievement*

**Michelle Carr**, The Nature Conservancy

*Restoring the Vistas and Gems of the Eastern Tallgrass Prairie and Big Rivers Landscape*

**Gwen White**, Eastern Tallgrass Prairie & Big Rivers LCC

*The US Fish & Wildlife Service's Role in Management on the Illinois River*

**Bob Barry**, U.S. Fish & Wildlife Service

Session C-1 | **Salon D**

**The Wonders of Weather and Wetlands**

**Moderator: Randy Grove**, Illinois Department of Agriculture

*Understanding Central Illinois Weather*

**Chuck Collins**, WEEK 25/WHOI 19

*Implementing Tile-Drainage Treatment Wetlands to Reduce Nitrogen Loading at the Watershed Scale*

**David Kovacic**, University of Illinois at Urbana-Champaign

*Local Participants Enhancing Water Quality and The Mississippi River Basin Initiative-Upper Peoria Lakes Project*

**Eric Schenck**, Duck's Unlimited and **Eric McTaggart**, USDA-Natural Resources Conservation Service

2:45–3:15 PM | **Salon A & B**

**Break; Visit Exhibits**

3:15–4:30 PM

**Concurrent Sessions**

Session A-2 | **Rooms III & IV**

**Illinois River and Your Community**

**Moderator: Anaise Berry**, Illinois River Road National Scenic Byway

*Pulling Together Along the River*

**Colin Wellenkamp**, Mississippi River Cities & Towns Initiative

*Assessing Your Community's Capital*

**Carrie McKillip**, University of Illinois Extension

*Watershed Planning—Communities Along the Illinois River*

**AJ Harlan**, Walnut Creek Watershed and **Melissa Eaton**, Tri-County Regional Planning Commission

Session B-2 | **Hamilton**

**Natural Resources 2—Identifying and Responding to Habitat Needs**

**Moderator: Stephen Havera**, Illinois Natural History Survey, Prairie Research Institute, University of Illinois at Urbana-Champaign

*The Expanding Influence of the Long Term Resource Monitoring Program (LTRMP)*

**Levi Solomon**, Illinois Natural History Survey, Prairie Research Institute, University of Illinois at Urbana-Champaign

*Conservation Planning for Waterfowl in the Illinois River Valley—Local Management and Flyway Conservation*

**Heath Hagy**, Illinois Natural History Survey, Prairie Research Institute, University of Illinois at Urbana-Champaign

*Bald Eagles: A Conservation Victory*

**Drew Becker**, U.S. Fish & Wildlife Service

Session C-2 | **Salon D**

**Agricultural BMPs: Getting Back to Our Roots!**

**Moderator: Duane Friend**, University of Illinois Extension

*SOIL HEALTH: It's All About the Soil!*

**Roger Windhorn**, USDA—Natural Resources Conservation Service

*Nutrient Management Strategies in Illinois that Minimize Environmental Impact, Optimize Harvest Yield and Maximize Input Utilization*

**Dan Schaefer**, Illinois Council on Best Management Practices

*Cover Crops—A “Win-Win” Strategy for Farmers and the Environment*

**Doug Gucker**, University of Illinois Extension

5:15–8:00 PM | **Spirit of Peoria**

**Evening Boat Cruise on the Spirit of Peoria**

Music, Cocktails (cash bar) and Hors d'Oeuvres

5:15 PM | **Boarding**

5:45 PM | **Departure**

**Spirit of Peoria**,  
100 N. E. Water Street

See the Illinois River up close and personal! Join your colleagues for an evening of networking, entertainment, and good food on the *Spirit of Peoria*, a turn-of-the-century paddle wheeler. In fact, the *Spirit of Peoria* was built in Paducah, Kentucky in 1988 by the Walker Boat Yard. It is solely propelled by its stern driven paddle wheel, which is powered by two Caterpillar diesel engines. Many of the decorative fixtures are from much older steamboats.

Staff from state and federal agencies will be on deck during the cruise to answer questions and point out flora and fauna, conservation projects, and areas of interest—you just have to ask them...

Watch the river miles go by while listening to the music of Barry Cloyd. Barry is a Midwestern based, touring singer/songwriter/multi-instrumentalist. Barry has spent a lifetime creating a performance style that weaves the genres of Blues, Folk, Celtic, Original and Roots music into a unique blend all his own. Barry has produced multiple CDs including his first “The Wind and the Water”—need we say more?



## THURSDAY, OCTOBER 3, 2013

7:45 AM–Noon | **Lower Lobby**

Conference Registration / Information Desk

7:45–8:30 AM | **Salon A & B**

Continental Breakfast; Visit Exhibits

8:30–9:45 AM

Concurrent Sessions

### Session A-3 | **Rooms III & IV**

New Findings on the History of the Lower Illinois River Valley: Glaciers, Cultures, and Waterfowl

**Moderator: Kristan McKinsey**, Peoria Riverfront Museum

*Large Lakes; Big Floods; the Deglacial History of the Illinois River Valley*

**B. Brandon Curry**, Illinois State Geological Survey, Prairie Research Institute, University of Illinois at Urbana-Champaign

*Changes in the Land and Human Settlement Evolution at the Illinois/Spoon River Confluence, Fulton County, Illinois*

**Alan Harn**, Dickson Mounds Museum

*Birds of the Illinois River: A Century of Change*

**Jeffery Walk**, The Nature Conservancy

### Session B-3 | **Hamilton**

Aquatic Invasive Species: Asian Carp and More

**Moderator: Gary Johnson**, U.S. Geological Survey, Illinois Water Science Center

*Multi-Jurisdictional Approaches to Asian Carp in the Upper Illinois and Chicago Area Waterway System*

**Kevin Irons**, Illinois Department of Natural Resources

*Asian Carp Density and Movement in the Illinois River Waterway: Implications for Control*

**James Garvey**, Southern Illinois University–Carbondale

*Looking Forward: Risk Assessment Tools to Identify Future Invaders Before They Arrive*

**Reuben Keller**, Loyola University Chicago

### Session C-3 | **Salon D**

Current Status and Results of Monitoring in the Illinois River Basin

**Moderator: Arlan Juhl**, Illinois Department of Natural Resources

*Intensive Streamflow, Sediment, and Water Quality Monitoring of a Small Watershed in Bloomington, Illinois*

**Tim Straub**, U.S. Geological Survey

*Watershed Management Tool for Evaluating BMPs: Case Studies in the Mackinaw and Upper Sangamon Rivers*

**Laura Keefer**, Illinois State Water Survey, Prairie Research Institute, University of Illinois at Urbana-Champaign

*Sediment Budget and Trends for the Last 30 Years in the Illinois River Basin*

**Mike Demissie**, Illinois State Water Survey, Prairie Research Institute, University of Illinois at Urbana-Champaign

9:45–10:15 AM | **Salon A & B**

Break; Visit Exhibits

10:15–11:30 AM

Concurrent Sessions

### Session A-4 | **Rooms III & IV**

The Attorney General's Role in Protecting the River: The Historical Perspective and the Response to a Recent Threat

**Moderator: Michael Mankowski**, Illinois Attorney General's Office

*Water Quality Impacts of Transportation and Storage of Road Salt Along the Illinois River*

**Christine Zeivel**, Illinois Attorney General's Office

*The Attorney General and the River: A Historical Perspective*

**James Morgan**, Illinois Attorney General's Office

### Session B-4 | **Hamilton**

Illinois River Water Trail Designation—Roundtable Discussion

**Moderator: Elliot Brinkman**, Prairie Rivers Network

*Blue Trails Initiative Round Table Discussion*

**Staci Williams**, American Rivers, and **Anaise Berry**, Illinois River Road National Scenic Byway

### Session C-4 | **Salon D**

Future Monitoring Technologies: Data and Tools

**Moderator: Doug Blodgett**, The Nature Conservancy

*Current State of Suspended-Sediment Surrogate Technology*

**Ryan Jackson**, U.S. Geological Survey

*Arrival of LiDAR Enhanced Elevation Data for the Illinois River Valley: A First Look*

**Don Luman**, Illinois State Geological Survey, Prairie Research Institute, University of Illinois at Urbana-Champaign

*Eye in the Sky—The Use of Unmanned Aerial Systems (UAS) and Remote Sensing to Monitor Rivers and Associated Ecosystems*

**Nathan Smith**, Riverside Research

11:45 AM–1:15 PM | **Salon C**

## Lunch/Feature Presentation

**Moderator: Russ Crawford**, Tri-County Regional Planning Commission



*Mississippi River Distilling Company:  
Raising A Glass to Resources of the  
Riverside*

**Ryan Burchett**, Mississippi River Distilling Company



Matt Bowyer

1:15–1:30 PM | **Salon C**

## Closing Comments and Adjourn

**John Church**, The Conservation Foundation

## Exhibitors

(as of 9.12.13)

ecology + vision, llc.  
The Booksmith  
Heart of Illinois Sierra Club  
The Nature Conservancy  
Illinois Department of Agriculture  
Illinois Department of Commerce & Economic Opportunity  
Illinois Department of Natural Resources  
Illinois Environmental Protection Agency  
Illinois Farm Bureau  
Illinois-Indiana Sea Grant  
Illinois Lakes Management Association  
Illinois River Road National Scenic Byway  
Illinois Science Teachers Association  
Illinois Stewardship Alliance  
Lisa Madigan, Attorney General, State of Illinois  
Prairie Research Institute, University of Illinois at Urbana-Champaign

- Illinois Natural History Survey
- Illinois State Archaeological Survey
- Illinois State Geological Survey
- Illinois State Water Survey
- Illinois Sustainable Technology Center

River Action League, Bradley University  
Southern Illinois University–Carbondale  
Trees Forever  
University of Illinois Extension  
USDA Natural Resources Conservation Service  
U.S. Geological Survey

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(as of 9.12.13)

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## ♦ Tuesday's Activities ♦

### ***Watershed Conservation Tour***

TUESDAY, OCTOBER 1, 2013 | 9:00 AM–4:30 PM

Seeing is believing! The 2013 conservation tour will present our theme *The Illinois River: Working Locally–Reaching Globally* to you in living color. The tour will be by charter bus and will include seven stops at a variety of locations to present various conservation practices on working and refuge lands, interesting geologic formations, and industry, commerce and scenic vistas.

*Lunch and refreshments will be provided.*

### ***RiverWatch Symposium***

TUESDAY, OCTOBER 1, 2013 | 9:00 AM–4:00 PM

The RiverWatch Symposium will convene citizen scientists, educators, and stream stewards from around the state to share data and dialogue about stream issues. They will focus on the global nature of the economic engines that are our rivers. To that end, river volunteers from all over Illinois and regionally within the Mississippi River Watershed plan to come and share their experiences working on the rivers they love. Chad Pregracke, founder of Living Lands and Waters, one of the preeminent river stewards in the United States is our keynote speaker.

### ***Illinois Drought: Learning from the Past as We Move to the Future***

TUESDAY, OCTOBER 1, 2013 | 1:00–5:00 PM

During 2012, Illinois suffered a severe drought. At this workshop we hope to bring together agency personnel, resource managers, and researchers to explore the issue and identify the research needs that will help ease policy and management challenges in the future. Speakers will discuss the State's "Drought of 2012" report, forecasting and data needs, and agricultural impacts. Discussion at the workshop will lead to a white paper detailing research gaps and opportunities.

### ***Illinois Rivers Coordinating Council—Public Forum***

TUESDAY, OCTOBER 1, 2013 | 6:30–8:30 PM

Illinois' rivers have long been instrumental in shaping the culture, communities, and commerce of our state. These waters play a vital role in the economic development, recreation and quality of life for our citizens. This will be a consolidated meeting of the Illinois River, Mississippi River and Wabash and Ohio River Coordinating Councils. Among the Councils' responsibilities are the coordination of policy and initiatives within the state for the preservation and restoration of our watersheds. Included with these responsibilities are interrelated issues of economics, flooding, recreation, and tourism. The forum will include official business and an opportunity for the general public to discuss issues and concerns related to the management of rivers in Illinois.

### ***Interactive Digital Technology Open House***

WEDNESDAY, OCTOBER 2, 2013 | 1:30–4:30 PM

See the latest in computer-based technologies that you may find helpful in accomplishing your resource management goals. You will be able to get one-on-one expert advice to help you identify, acquire, and understand available data, turn that data into useful illustrations or maps, and combine various data to answer your questions. Both novice and advanced users are welcome. Come with questions, leave with results.



**Preconference Workshop • Tuesday • 1:00-5:00pm •  
Illinois Drought: Learning From the Past as We Move to the Future**

Following the Drought of 2012, it became apparent that part of Illinois' water management strategy could be addressed through stronger collaborations between practitioners and the research community. This workshop aims to strengthen those relationships and determine where future research will be most helpful.

## **Agenda**

- **Overview**—Dr. Brain Miller
- **Presentations:**
  1. Deficiencies in Illinois's Drought Response Authorities—Arlan Juhl
  2. Challenges in Forecasting and Monitoring the 2012 Drought —Dr. Jim Angel
  3. USGS Water Monitoring to Support the State of Illinois Governor's Drought Response Task Force during the Drought of 2012—Gary Johnson
  4. NRCS Needs and Recommendations for Drought Related Agricultural Research—Kerry Goodrich
  5. Drought Management Strategies for the Chicago Metro Area—Dr. Martin Jaffe
  6. The Value of Hydroclimatic Forecasts for Agricultural Drought Mitigation and Preparedness—Dr. Ximing Cai
- **Break**
- **Guided Discussion**
- **Next Steps**

## **Abstracts and Biographic Information**

**Overview**—Dr. Brain Miller, Illinois Water Resources Center/ Illinois-Indiana Sea Grant

Dr. Miller is a Wildlife Biologist and Natural Resource Social Scientist. He currently serves as Director of the Illinois-Indiana Sea Grant College Program and the Illinois Water Resources Center at the University of Illinois and is also an Adjunct Associate Professor at Purdue University in the Department of Forestry and Natural Resources.

### **1. Deficiencies in Illinois's Drought Response Authorities**—Arlan Juhl, Illinois Department of Natural Resources

Arlan Juhl earned his B.S. in Agricultural Engineering from Iowa State University in July 1973, where he specialized in Soil and Water. As a registered professional engineer in Illinois, he has 40 years of Water Resource Engineering experience. In 2006 Mr. Juhl received the John Wesley Powell Award from the U. S. Geological Survey for work in support of streamgaging and data collection, and in 2010 he was awarded the Lake County Stormwater Manager of the Year Award. Mr. Juhl serves as the Director of the Office of Water Resources in the Illinois Department of Natural Resources and co-chaired the Governor's 2012 Drought Response Task Force.

**Abstract:** The droughts of 2007 and 2012 provided state agencies with opportunities to better define the roles of government in responding to drought and identified areas of limited to no authority to respond. Illinois water laws are generally defined around eastern water law, and, under the presumption that there is more water than we need, encouraging drainage and use of water with some restrictions. With increases in agricultural irrigation, industrial use of surface and groundwater, and urban expansion, water usage in times of low water and drought present new challenges as water supplies experience greater usage. Conflicts arise in the use of waters, and Illinois is poorly equipped to address some of these conflicts. New data is required to better define the roles of government and to identify the impacts of water use conflicts.

## **2. Challenges in Forecasting and Monitoring the 2012 Drought**—Dr. Jim Angel, Illinois State Water Survey

Dr. Jim Angel has been the Illinois State Climatologist since 1997. He began working at the Illinois State Water Survey in 1984 and received his PhD in Geography from the University of Illinois in 1996. His areas of interest include drought, extreme rainfall events, Great Lakes storms, past and potential future climate change, and climate tool development. As state climatologist, he works with a range of users, including farmers, teachers, engineers, state and local officials, and the media. One thing he has learned over the years is that there is never a dull moment in Illinois when it comes to weather and climate.

**Abstract:** Droughts are notoriously hard to predict, and the 2012 Drought was no exception. Early forecasts for 2012 indicated dry conditions might prevail through summer but missed the magnitude of the dryness. New web-based products in 2012 enabled better and faster tracking of drought conditions. One of the most useful products was a hybrid of radar-estimated precipitation calibrated with rain gauge reports. The result is a higher-resolution and a more reliable measure of precipitation. Even so, several data and knowledge gaps remain in monitoring drought, including the impacts on crops and water supplies, as well as determining what it takes to recover from drought. This talk will review the forecast, new products, and data gaps revealed in the 2012 drought.

## **3. USGS Water Monitoring to Support the State of Illinois Governor's Drought Response Task Force during the Drought of 2012**—Gary Johnson, U.S. Geological Survey

Gary Johnson serves as the Chief of the Hydrologic Data Section of the USGS, Illinois Water Science Center in Urbana, Illinois. His current duties include oversight and administration of the entire streamflow gaging station network throughout the state of Illinois, with an annual budget of over \$3.4 million dollars. Gary has completed a variety of surface-water quantity, bathymetric, and surface-water quality projects. During his 24-year career, Gary has authored or co-authored over 30 USGS scientific reports. Gary holds a B.S. degree in General Engineering and a Master's degree in Public Administration, both from the University of Illinois.

**Abstract:** The U.S. Geological Survey (USGS) collects streamflow, groundwater levels, and water-quality data for the State of Illinois and the Nation. Much of these data are collected every 15 minutes (real-time) as a part of the national network so that water-resource managers can make decisions in a timely and reliable manner. Coupled with modeling and other water-resource investigations, the USGS provided these data to the State during the Drought of 2012.

## **4. NRCS Needs and Recommendations for Drought Related Agricultural Research**—Kerry Goodrich, U.S. Department of Agriculture

Kerry grew up on a small family farm in Eastern Utah, where he and his father raised alfalfa, small grains, dabbled in hog production, and had the straightest furrows in town without the use of GPS technology. Kerry earned his B.S. in Agronomy with a minor in Agricultural Economics from Brigham Young University in 1982. He began his career with the U. S. Department of Agriculture, Natural Resources Conservation Service as a Soil Conservationist in 1987. He worked for 5 years as a Soil Conservationist, 14 years as the State Agronomist, and 5 years as the Assistant State Conservationist for Field Operations in Ogden, Utah. He has been in his current position as the State Resource Conservationist for NRCS in Champaign, Illinois since May of 2012.

**Abstract:** NRCS has only one program that allows expenditures for emergency situations. The Emergency Watershed Protection Program addresses watershed impairments that pose imminent threats to lives and property due to natural disasters. All other NRCS financial programs do not allow for the redirection of funds during a drought.

NRCS can direct its funds to projects that may reduce drought impacts but are not sure if some are economically viable. For example, should NRCS design larger stock water ponds to reduce potential impacts of a drought? Is there other pasture infrastructure that could be funded that would reduce drought impacts and still be economical? Other research needs include the development of a methodology to determine changes in yield as precipitation changes. What impact does irrigation have on groundwater resources during a drought?



**5. Drought Management Strategies for the Chicago Metro Area**—Dr. Martin Jaffe, University of Illinois Chicago/ Illinois-Indiana Sea Grant

Martin Jaffe is an Associate Professor of Urban Planning and Policy at the University of Illinois at Chicago, where he teaches environmental and land use law and policy. He also holds an appointment as an Environmental Planning Specialist with the Illinois-Indiana Sea Grant College Program.

**Abstract:** Northeastern Illinois relies on a number of water supply resources, many of which (such as Lake Michigan and the deep aquifer system) are relatively resilient to drought impacts, while other resources (such as surficial aquifers and inland surface water sources) are more susceptible to droughts. Some innovative management strategies can include allowing communities facing drought risks to temporarily access more resilient water supply resources and to employ water utility rate structures that better promote water conservation programs imposed during droughts.

**6. The Value of Hydroclimatic Forecasts for Agricultural Drought Mitigation and Preparedness**—Dr. Ximing Cai, University of Illinois Urbana-Champaign

Ximing Cai is Professor and Ven Te Chow Faculty Scholar in Water Resources and Donald Biggar Willett Faculty Scholar in the Department of Civil and Environmental Engineering, University of Illinois at Urbana-Champaign. Before joining UIUC, he worked as a joint Research Fellow at the International Food Policy Research Institute and International Water Management Institute. Dr. Cai has worked as a consultant to the World Bank, the United Nations, and the OECD to solve international water resources management problems. He holds a Ph.D. in Civil Engineering from the University of Texas at Austin.

**Abstract:** This talk will present relevant work recently conducted in my group, which addresses the following questions: What is the value of short-term (1-2 weeks), season (3-6 months), and long-term predictions (30-50 years) predictions for drought mitigation and preparedness in the Midwest, especially for agriculture? In particular, will the drought frequency, intensity and duration be affected by climate change at a local scale? If so, what combination of strategic and tactical measures will move the societal system response from a vulnerable situation to a resilient one with minimum cost? Are current infrastructures and their operations enough to mitigate the damage of future drought, or do we need in-advance infrastructure expansion for future drought preparedness?

By addressing these questions, I wish to progress to more general topics: For the research community, what are the most urgent and realistic scientific and technological supports expected by stakeholders for drought damage reduction? For the stakeholder communities, how should the research findings that include useful information and some uncertainties be used in decision making so we can move forward?

**Moderator: Mike Demissie, Illinois State Water Survey**

**Michael Reuter**

The Nature Conservatory

Michael Reuter serves as director of The Nature Conservancy's North America Freshwater Program and the Great Rivers Partnership. In these roles, he has worked to promote programs and partnerships to advance the sustainable management of freshwater systems globally, including the Yangtze and Mekong rivers in Asia, the Niger and Ogooué rivers in Africa, the Colorado and Mississippi rivers in North America, and the Magdalena, Paraguay-Parana and Tapajós rivers in South America. Michael is especially interested in ways to improve decision-making in these complex and economically important systems by involving the people, communities, and companies who depend on them.

Michael serves on a variety of boards and committees, including the founding steering committee for America's Watershed Initiative, the executive committee for the Keystone Field to Market Alliance for Sustainable Agriculture, the board for the International Society for River Science, and the advisory committee for the Alliance for Water Stewardship in North America. Michael holds a B.S. degree in agricultural economics from Iowa State University and a Master of Liberal Studies from Bradley University. He lives in Peoria, Illinois, is married and has three children.

***The Illinois River: It Plays in Peoria...and Shanghai, Bogota, Santarem, Libreville and Beyond***

While the Illinois River gathers itself from mostly within the State of Illinois, the challenges we face in managing and restoring this great river system are often linked to political and economic forces that operate on national and global scales. This provides opportunities for the Illinois River community to share relevant lessons and ideas with managers facing similar challenges around the world. Indeed, the vast amount of credible scientific data on the Illinois River developed by various scientific institutions over the past century enables the experiences on this river to be particularly instructive.

Recognizing a need to call attention to the plight of great rivers around the world, and an opportunity to facilitate learning across these systems, The Nature Conservancy and Caterpillar Inc. joined forces in 2005 to create the Great Rivers Partnership (GRP). Today, with partners on six continents, the GRP is focused on conservation and sustainable development of eight great rivers and their basins. In the United States, this includes the Illinois River as part of the Mississippi River system.

Lessons shared from the Illinois River have been significant: the importance of science to inform planning; the development of integrated management plans, as initiated in the 1990s; the need for broad stakeholder engagement, facilitated today through the Illinois Rivers Coordinating Council.

At the same time, the Illinois River has much to gain from collaboration. Major challenges here – but also felt worldwide – include control of aquatic invasive species; the need for more integrated flood risk and floodplain management; sustainable solutions to water quality and sediment management; and securing capital and financing to address these challenges at a sufficient scale. The world needs successful examples of stakeholders coming together to protect and manage great rivers, and the Illinois River can continue to be a source of leadership.

**Michele Sullivan**

Caterpillar, Inc.

Michele L. Sullivan is President of the Caterpillar Foundation, the philanthropic arm of Caterpillar Inc. She also has administrative responsibilities for Social Activities and Services and Peoria-area Governmental Affairs.

Since joining Caterpillar as an Information Analyst in 1988, Sullivan has held numerous positions in the North American Commercial Division in Marketing and Market Introductions. A certified 6 Sigma Black Belt and 6 Sigma Master Black Belt, she has also served as Part Authorizations Division Manager with expanded responsibilities in global product support for the new product introductions.

Sullivan has been recognized as a 40 Under 40 Leader in Peoria and is a recipient of the prestigious 25 Women in Leadership Award. Recently, she was one of nine influential women honored for “making lasting differences in their communities and rising to the top of their professions.”

Sullivan serves on the board of the Community Workshop and Training Center, Greater Peoria LISC Board of Directors, is a member of the American Red Cross Corporate Advisory Council . She holds a bachelor’s degree and a master’s degree in Business Administration from Bradley University.

***Global and Regional Economy***

**About the Caterpillar Foundation:**

Founded in 1952, the Caterpillar Foundation has contributed nearly \$550 million to help make sustainable progress possible around the world by providing program support in the areas of environmental sustainability, access to education and basic human needs.

**Moderator: Lauren Lurkins, Illinois Farm Bureau**

**Michael J. Doherty**  
Illinois Farm Bureau

Mike Doherty has been serving as Senior Economist and Policy Analyst at the Illinois Farm Bureau since 2004.

Doherty is responsible for research and policy analysis of agricultural production and marketing systems. Doherty also provides analysis of external research projects, government policies, proposed legislation, biofuels markets, and other factors affecting the profitability of agriculture. Doherty served on the Midwest Governor's Association for biofuels policy development and provides a monthly economic outlook on the RFD radio network.

Before joining IFB, Doherty provided business planning, marketing, and financial analysis for value-added ag ventures, as part of a USDA Rural Development program. Prior to his experience with USDA-RD, he was a research associate in the Department of Economics at North Carolina State University and an educator for the North Carolina Extension Service.

Doherty earned his B.S. in Economics at Illinois State University and his M.S. in Agricultural Economics from Clemson University in South Carolina. He has been an advisor to foreign aid projects involving agriculture and rural development in Costa Rica, the Occupied West Bank (Palestine), the Dominican Republic, Mexico, Ecuador, and Paraguay.

Doherty was raised on a farm near Merna, Illinois, and currently resides in Normal.

### ***Illinois Agriculture & Global Trade***

A scan of Illinois as a 'grain and oilseed supplier to the world' and the economic dynamics of the past five to ten years will be covered in part one of this presentation, thus providing a framework for looking to the future.

Illinois is a leading state for the export of bulk agricultural commodities, thanks to its vast interstate highway and railway system, its navigable waterways, and its highly fertile soils. Tethered by Chicago to the north and St. Louis and Louisville to the south, Illinois remains one of the top exporters of corn, soybeans, and derived grain and oil seed products, as well as an exporter of some specialty crops. However, major economic and competitive shifts have occurred over the past 5 to 10 years in the makeup of end users of the primary commodities that Illinois produces.

In part two of the presentation, we will cover the challenges Illinois agriculture faces over the next seven years. Illinois agriculture faces unique challenges over the remainder of this decade and over subsequent decades, to remain competitive regionally, nationally, and internationally. Improved genetics and shifts in the intermediate and end-users of our bulk agricultural commodities are creating new dynamics. New biofuels markets coupled with dramatically increasing Asian food demand continue to create new combinations of factors that impact shipping. Intermediate- and long-term outlooks will help us envision where the Illinois River transportation system needs to be positioned in 2020. What changes can we predict will impact on our alternative transportation systems? How will these new demands interface politically and economically with our river systems? What flexibility combined with competitiveness will be required of our infrastructure? These are just a few examples of the important issues and questions we will cover in this presentation.

**Wendall Shauman**  
Shauman Farms

Wendell Shauman farms near Kirkwood, Illinois and has spent over 20 years serving on state and national boards: Illinois Farm Bureau, Illinois Soybean Association, Illinois Corn Marketing Board, and US Grains Council. Representing the Grains Council and promoting US corn exports, he has visited terminals and ports around the world while speaking to buyers of US grains. He has been involved with water issues serving on the Illinois and Mississippi River Coordinating Councils, chairing a task force report after the 1993 Flood, visiting the Hypoxia Zone with the Gulf of Mexico group, serving on an American Farm Bureau Water Quality Committee and participating in their Watershed Heroes program.

He holds degrees from Monmouth College BA in Chemistry and University of Nebraska-Lincoln MS in Agronomy and PhD in Genetics. With wife Janet, they have 3 children and 6 grandchildren.

***World Food Demand & US Competitive Challenges***

The world population is approaching 9 billion people with Asia being the area of most growth. In less than 10 years, China and India will add 300 million households with middle class incomes. With this purchasing power comes demand for improved diets. Food demand will increase for quantity, quality, safety and reliability of supply. While population growth is mostly in Asia, the Western Hemisphere will be called upon to be the major producer for much of this increased demand.

Besides production, timely, efficient, cost competitive delivery will be required. Much of the world's transportation system is being improved. This challenges the US to keep up with these larger modern changes.

The Illinois River as a major part of the Greater Mississippi River transportation network must play an important part in this system. This system is the "Highway to the World" for Cornbelt farmers.

**Moderator: Mark Miller**, *Illinois Department of Natural Resources*

**David Wethington**

US Army Corps of Engineers

Dave Wethington, P.E., is a Project Manager with the U.S. Army Corps of Engineers and a licensed engineer in the state of Illinois. Since 2002, he has served the Army and the nation by employing his engineering, management, and leadership skills to support the planning, design, and construction of Civil Works projects. Mr. Wethington's experience encompasses a range of the Corps ecosystem restoration, flood risk management, and federal navigation missions.

During his tenure with the Corps, Mr. Wethington served on a two-year assignment as a liaison to the U.S. Environmental Protection Agency, as well as on two developmental assignments with Corps Headquarters in Washington, D.C. Most recently, Mr. Wethington completed a five-month assignment working as a Legislative Affairs Liaison for the agency.

Mr. Wethington assumed program and project management responsibility for the Great Lakes & Mississippi River Interbasin Study (GLMRIS) at its inception in 2009. In this role, he leads a regional team of planners, economists, scientists, engineers, and technical experts in conducting a timely and efficient study of the options and technologies that could be applied to prevent the transfer of aquatic nuisance species, such as Asian carp, between the Great Lakes and Mississippi River basins, via aquatic pathways.

***The Great Lakes & Mississippi River Interbasin Study - GLMRIS***

New species have been introduced into the Mississippi River and Great Lakes basins during the last half of the 1900's and continue through present as a by-product of international trade. At the same time, environmental laws have changed the way municipalities and industries dispose of their waste products into rivers and streams, resulting in improved water quality in many freshwater environments, which has allowed aquatic organisms to disperse over a greater area. This greater dispersal was seen as positive when it restored native species to their historic range; however, it has been environmentally, economically, and socially problematic when it allowed non-native species to colonize new areas. These aquatic nuisance species (ANS) have the potential to threaten the diversity or abundance of native species, the ecological stability of infested waters, or the commercial, agricultural, aquacultural or recreational activities dependent on such waters.

The U.S. Army Corps of Engineers, in consultation with federal agencies, Native American tribes, state agencies, local governments and non-governmental organizations, is conducting the Great Lakes and Mississippi River Interbasin Study (GLMRIS). In GLMRIS the Corps is evaluating the range of options and technologies that may be applied to prevent the transfer of aquatic nuisance species between the Great Lakes and Mississippi River basins, via aquatic pathways. As part of this study, the Corps is conducting a detailed analysis of various ANS controls, including hydrologic separation. The presentation will outline the original purpose and intent of GLMRIS, as well as identify the impacts of intervening legislation – authorized in July 2012 – that shifted the scope and timeline for the study, resulting in the current production of the GLMRIS Report.

**Moderator: Terry Weldin-Frisch**, *Illinois Department of Commerce and Economic Opportunity*

**John Marlin**

Illinois Sustainable Technology Center, Prairie Research Institute  
University of Illinois at Urbana-Champaign

John C. Marlin joined the Illinois Sustainable Technology Center of the University of Illinois in May of 1993. He is currently a research affiliate. Over the years he worked on many river issues including the federal-state Illinois River Ecosystem Restoration Study. He assists the Illinois Department of Natural Resources with “Mud to Parks” projects, which involve the long distance transport of sediment from the Illinois River and other water bodies for use as topsoil.

Prior to joining WMRC, Marlin served 9.5 years on the Illinois Pollution Control Board, five of them as chairman. Board members are appointed by the governor and confirmed by the senate and exercise quasi-legislative and quasi-judicial powers. While at the Board, Marlin initiated the Illinois legislative and regulatory programs for managing scrap tires and associated mosquitoes.

From 1972 to 1983 Marlin was Executive Director of the Central States Resource Center, a conservation advocacy organization for a variety of issues primarily focused on water and transportation.

Dr. Marlin received a MS and PhD in Entomology from the University of Illinois at Urbana-Champaign.

***A Decade of Experience with Beneficial Use of Sediment in Illinois***

The beneficial reuse of sediment generated by various recreational, environmental and navigation projects is a priority with several agencies. Illinois has completed several projects over the past decade and is pursuing others, on both large and small water bodies.

The presentation will cover current projects where dredged material is being used as topsoil including Walton Lake at Litchfield, initiatives with the Fox Waterway Agency, East Peoria, Decatur, and projects in the Chicago area.

The results of some earlier work at the US Steel South Works Site in Chicago and the Banner Marsh Fish and Wildlife Area will be covered. Some lessons learned over the years will also be discussed.

Publications, videos and photos related to the WMRC sediment project are located at  
[http://www.istc.illinois.edu/special\\_projects/il\\_river/](http://www.istc.illinois.edu/special_projects/il_river/)

**Benjamin Brockschmidt**

Illinois Chamber of Commerce Infrastructure Council

As the Executive Director of the Infrastructure Council, Benjamin Brockschmidt focuses on the transportation systems and public works essential to sustaining the Illinois economy. This includes investing in our roads and bridges, freight and passenger rail service, waterway shipping, airports, as well as access to water and sanitary sewage treatment.

Benjamin came to the chamber from U.S. Rep. Tim Johnson's office where he had been since 2008. He worked with the Transportation & Infrastructure Committee which included vote recommendations and briefs on hearings and markups. He was Rep. Johnson's point staffer on transportation issues for the Illinois Republican Delegation. In addition, he advised local airports, transit operators, engineers, and construction companies on best methods to adapt to federal policy. Benjamin has also developed professional relationships with transportation stakeholders including IDOT, USDOT and private companies in Illinois.

Benjamin graduated from Illinois State University with a dual B.S. degree in Political Science & History and has a M.A. in National Defense and Security from the U.S. Naval War College

***Leadership and Role of Business on Waterway Infrastructure Projects***

America's waterways are an important part of our freight network. However, the majorities of the locks and dams in this network have reached or are quickly approaching the end of their usable lifespan. While historically it has been the responsibility of the U.S. Army Corps of Engineers to upgrade and maintain these facilities, the support and leadership of the business community is necessary. Benjamin will discuss the business community's role for maintaining and upgrading our waterways infrastructure.



**Thomas O'Hara**

Water Business Group, CH2MHill

Tom O'Hara is a Senior Program Manager within the Water Business Group of CH2MHill in St. Louis. He has been with CH2MHill since October 2011. During that time he has served as the Program Manager for Fargo Moorhead Diversion project and a senior adviser on water related projects in the Upper Midwest.

Prior to joining CH2MHill, Tom retired after a 26 year career as an Army officer. His last assignment was as the Commander of the St. Louis District of the United States Corps of Engineers. In that role, he commanded an 800-person engineering, construction, and water resources operations organization which was responsible for water based projects in an area that covered a large part of Missouri and Illinois including the first 80 miles of the Illinois River. O'Hara was also previously served as the Commander of the 27th Engineer Battalion of the U.S. Army in Fort Bragg, North Carolina and was the Deputy Commander for the St. Paul District. He served three combat deployments to Afghanistan and Iraq. He is married, has two grown sons and lives in O'Fallon, Illinois.

***Innovative, Alternative Delivery Methods for Replacement of Locks and Dams***

The Illinois River, and transportation on it, is critical to the economic viability of the State of Illinois, the Upper Midwest, and the Nation as a whole. Annually billions of dollars of commodities (agricultural, coal, aggregate, petroleum, bulk, containers) move through the Illinois River system. Movement on the river is one of the most efficient and environmentally friendly ways to move bulk commodities.

Continued use of river systems such as the Illinois River to transport commodities is dependent on the reliability and capacity of the system. Producers and shippers will continue to use the river for transportation if they can be confident that their products will cost effectively get to their destination as scheduled. One of the critical contributors to the reliability and capacity of the river system are the locks that maintain the navigation channel to a level that will enable barge traffic. Currently many of Illinois and Upper Mississippi River locks are over 70 years old and in dire need of major repair and expansion.

There are authorized federal projects to do these major repairs and expansions, but the Illinois River projects have received zero federal construction dollars. It is also not likely that these projects will be funded any time soon given the current federal budget limitations. It is therefore necessary to look for alternative (public private) funding models to advance these critical infrastructure and economic development projects. This presentation will address the background and some potential models that could be meet this need.

**Moderator: Andrew Casper**, *Illinois Natural History Survey,  
Illinois River Biological Station*

**Michelle Carr**

The Nature Conservancy

Michelle joins The Nature Conservancy after 16 years as an advisor in the investment management division at Goldman Sachs, where her clients included entrepreneurs, chief executive officers, families, foundations and endowments. From 2008 through 2012, she was a member of President Obama's National Finance Committee.

In Illinois, Michelle is leading efforts to advance freshwater, grassland and urban conservation initiatives. Key conservation efforts include the return of bison to Illinois' Nachusa Grasslands Preserve; a managed connection between the Illinois River and the Emiquon Preserve, the Conservancy's 6,700-acre wetland restoration project; and the establishment of green infrastructure that will help clean the City of Bloomington's drinking water supply. Additionally, she is working closely with conservation staff and partners to build an urban conservation strategy in the City of Chicago.

Michelle graduated from St. Louis University and holds a MBA from Vanderbilt University. Michelle currently serves on the board of directors for the National Museum of Health and Medicine Chicago and is a member of the Chicago Foundation for Women and Chicago Finance Exchange. She lives in Chicago with her husband and three children.

***Emiquon Complex Designated a RAMSAR Wetland of International Importance -  
A Local Global Achievement***

Last year, the Emiquon Complex was designated as the United States' thirty-second Wetland of International Importance under the Ramsar Convention on Wetlands, joining an elite group of distinguished wetlands that includes the Everglades, Okefenokee Swamp, Chesapeake Bay, and San Francisco Bay. The Ramsar Convention is an intergovernmental treaty adopted in the Iranian city of Ramsar in 1971. Currently, 167 countries are signatories to the treaty that provides a framework for "the conservation and wise use of all wetlands through local and national actions and international cooperation, as a contribution towards achieving sustainable development throughout the world."

The 14,000-acre Emiquon Complex straddles the Illinois River in Mason and Fulton Counties and is comprised of the US Fish and Wildlife Service's Chautauqua and Emiquon National Wildlife Refuges and The Nature Conservancy's Emiquon Preserve. To be designated a Wetland of International Importance, the complex had to meet at least one of nine qualifying criteria. In fact, the Emiquon Complex met or exceeded eight of the nine criteria.

In addition to further validating the many restoration and management successes at Emiquon to date, the Ramsar designation will assist the Emiquon Partners in promoting the partnership and helping build constituency for wetland conservation here and elsewhere. Participation in Ramsar-related activities also will provide networking opportunities to both gain knowledge and share lessons learned related to restoration and management of these important habitats that provide such a wide variety of benefits to nature and people.

**Gwen White**

Eastern Tallgrass Prairie & Big Rivers LLC

Gwen White is the Science Coordinator for the Eastern Tallgrass Prairie and Big Rivers LCC. She previously worked with DJ Case & Associates, at the Indiana Department of Natural Resources in fisheries and watershed management, and served in the US Peace Corps aquaculture program in Honduras. Gwen holds a doctorate in conservation biology from the University of Minnesota and a master's degree in zoology from the University of Maryland.

***Restoring the Vistas and Gems of the Eastern Tallgrass Prairie and Big Rivers Landscape***

The Eastern Tallgrass Prairie and Big Rivers Landscape Conservation Cooperative (ETPBR LCC) is dedicated to addressing the conservation challenges in a heavily modified and fragmented landscape stretching across the nation's heartland across 11 states from Ohio west to eastern Kansas, Oklahoma and Nebraska and north through Iowa into Minnesota. Highly productive soils support economic and social interests including crops, livestock, manufacturing, energy, growing urban centers and struggling small towns—and potentially rich ecosystems.

Sedimentation, channelization and flooding influences the midsection of several continental river systems, affecting resources from the Midwest to the Gulf of Mexico and calling for integrated agroecology, watershed and floodplain management. A few large restoration sites convey the historic vistas created by sweeping tallgrass prairie and rolling rivers. Scattered pockets of remnant prairie and free-flowing river segments are highly valued where they exist. While the highway view suggests corn and beans from one end to the other, the region is not homogenous. Precipitation, water laws, migration, human population density, and agricultural commodities differ across the region. Management uncertainties span climate change, invasives, declining upland grassland birds and pollinators, nutrient runoff, and water demands.

The LCC has identified four focal areas to develop a large-scale long-term Science Needs Agenda: 1) Prairie Restoration Techniques; 2) River Restoration Techniques; 3) Agroecology Conservation Practices; and 4) Urban Watershed Management. The LCC works with stakeholders to fill gaps in pragmatic science to guide conservation decisions that will restore the vistas and gems of the tallgrass prairie and big river ecosystems while supporting economically significant production, recreation, and quality of life resources.

**Bob Barry**

U.S. Fish & Wildlife Service, Illinois River National Wildlife & Fish Refuges Complex

Barry earned a BS in Avian Sciences from the University of California at Davis (1984) and an MS in Wildlife Management from Louisiana State University (1991). From 1985-88 he was on active duty in the US Army in a mechanized infantry unit at Ft. Polk, LA. Following grad school he worked as a biologist at the Corps of Engineers in Vicksburg, MS for two years preparing environmental assessments and impact statements. He then transferred to the U.S. Air Force and worked for nine years as a wildlife biologist at the 1.8 million acre Barry M. Goldwater Air Force Range in southwestern Arizona. In 2002 he transferred to USFWS as the wildlife biologist for DeSoto NWR in western Iowa, became an Assistant Refuge Manager at Lower Rio Grande Valley NWR in south TX in 2007, and is currently Refuge Manager for Illinois River National Wildlife and Fish Refuges Complex (Chautauqua, Emiquon & Meredosia NWRs) based in Havana, Illinois.

***The US Fish and Wildlife Service's Role in Management on the Illinois River***

Managed by the U.S. Fish and Wildlife Service, the National Wildlife Refuge System is the world's premier system of public lands and waters set aside to conserve America's fish, wildlife and plants. Since the designation of the first wildlife refuge in 1903, the System has grown to encompass more than 150 million acres, 561 national wildlife refuges (NWR) and other units of the Refuge System, plus 38 wetland management districts. There are currently six national wildlife refuges in the state of Illinois (Hackmatack, Chautauqua, Emiquon, Meredosia, Cypress Creek, and Crab Orchard) with over 82,500 acres of protected lands. In addition, parts of the Two Rivers (8,500 ac) and Upper Mississippi River (240,000 ac) refuges fall within the state. On the Illinois River, Chautauqua, Emiquon, Meredosia, and the Swan Lake unit of Two Rivers NWR provide protection and management of backwater lakes, sloughs, bottomland and upland forest and prairies. These refuges also provide opportunities for compatible outdoor recreation such as hunting, fishing, wildlife viewing, interpretation, environmental education, and photography. Management of refuge wetlands is directly affected by the Illinois River. Specifics about the Illinois River Refuges will be discussed.

**Moderator: Randy Grove, Illinois Department of Agriculture**

**Chuck Collins**

Chief Meteorologist, WEEK/WHOI/WAOE-TV

Chuck Collins has been Chief Meteorologist at WEEK/WHOI/WAOE- TV in Peoria since 2009, prior to that he was at WMBD-TV for 23 years. He is also the weather voice of WMBD radio and the agri-business weather voice on WIRL radio. Chuck has been in radio/TV for 37 years, 36 of those in Peoria working at various radio and TV stations. He has a degree in radio/TV from Lake Land College in Mattoon. In 1997, Chuck graduated from the Broadcast Meteorology Program at Mississippi State University. He is a three time winner of the Illinois Broadcaster's Association "Silver Dome Award" for Best Downstate Television Weather.

***Understanding Central Illinois Weather***

The old saying goes "In Illinois wait 15 minutes and the weather will change". That statement is truer than we think. In winter we see below zero temperatures with literally tons of snow. In the spring, we see violent thunderstorms and tornadoes. In summer we experience stifling heat and humidity and in autumn we have crisp, cool weather with beautiful foliage. Central Illinois is located in the mid-latitudes which makes our weather some of the most volatile on the planet. Forecasting Central Illinois weather is a challenge considering the state has different climates from one end to the other.

My goal is to educate conference attendees on ways our weather is forecast on a daily, weekly and long term basis and how weather cycles and global warming make forecasting an even bigger challenge.

**David Kovacic**

University of Illinois at Urbana-Champaign

David Kovacic is the director of the Wetland Ecology Laboratory (Department of Landscape Architecture, University of Illinois). He received his PhD from Colorado State University in 1983, and completed a postdoctoral fellowship at the Savannah River Ecology Laboratory (University of Georgia) in 1986. He entered the University of Illinois' Department of Landscape Architecture as an ecologist in 1986, teaching courses in ecology, restoration and sustainability. In 2012, he retired as an emeritus professor of ecology in the Departments of Landscape Architecture and Natural Resources and Environmental Sciences, University of Illinois.

Kovacic's current research focuses on methods of reducing nutrient loading to agricultural drainages. His work was the first to show that wetlands can be effective in reducing tile drainage nitrate loading in the Midwest, the major source of Gulf Hypoxia. In 2006, he served on the Gulf Hypoxia nutrient advisory committee co-sponsored by the USDA and USEPA to identify solutions to nitrate loading. He currently works with The Nature Conservancy, the Environmental Defense Fund, NRCS, the McLean SWCD, and the Lake Bloomington Water Treatment facility, and the IEPA to implement tile-drainage wetlands on a watershed scale to improve drinking water quality in Lakes Bloomington and Evergreen and other Illinois watersheds.

**Maria Lemke**

The Nature Conservancy

Maria Lemke received her bachelor's and master's degrees from the University of Oklahoma, where she studied the response and recovery mechanisms of aquatic insect communities to flooding and drying disturbances. She earned her Ph.D. from the University of Alabama where her research focused on population and production dynamics of wetland microcrustaceans. After moving to Illinois in 1999, Maria worked for several years at the Illinois Natural History Survey in Havana, Illinois, monitoring larval fish and zooplankton production in backwater lakes on the Illinois River. She has been with The Nature Conservancy for the last 11 years, working with partners to quantify the effectiveness of various agricultural conservation practices in the Mackinaw River watershed and conducting wetland research at Emiquon Preserve in central Illinois. Additional research activities include quantifying diversity and secondary production of aquatic invertebrates in floodplain and backwater habitats along the Illinois River.

***Implementing Tile-Drainage Treatment Wetlands to Reduce Nitrogen Loading at the Watershed Scale***

Tile-drained farmlands in the Midwest contribute 90% of the nitrate-N (860,500 Mg yr<sup>-1</sup>) and 79% of the total P (118,100 Mg yr<sup>-1</sup>) to the Mississippi River basin, and have been identified as the primary cause of Gulf hypoxia. Tile-drainage is required in over a third of the Midwest to support modern intensive agricultural production, however, tiles export an average of 25-50 kg of nitrate-N ha<sup>-1</sup> yr<sup>-1</sup> to surface waters. The Mackinaw River, in Central Illinois, is representative of the many tile-drained agricultural watersheds of the Midwest's Upper Mississippi River Basin. Two sub-basins of the Mackinaw feed Lakes Bloomington and Evergreen, supplying drinking water to 80,000 people in Bloomington/Normal, IL. Lake Bloomington historically exceeds EPA's 10 ppm drinking water nitrate standard and is listed as impaired due to excessive nitrate and phosphorus loadings. There is an urgent need to implement conservation practices that allow tile drainage to support agricultural production yet effectively reduce nutrient exports to reservoirs and streams. Research at the University of Illinois has shown that tile-drainage treatment wetlands covering 2.5% of the land area can remove 37-45% of the tile N load. In 2010, TNC, the Environmental Defense Fund, the City of Bloomington, McLean County SWCD, NRCS, and the Farm Service Agency established the Mackinaw River Drinking Watersheds Project (MRDWP), a project to implement the targeted establishment of wetlands to reduce N loading in Lakes Bloomington and Evergreen. Researchers at the University of Illinois and Illinois State joined with the MRDWP to address water quality issues in the watersheds. A watershed wetland implementation strategy for the 43,000 acre Lake Bloomington watershed using GIS, LiDAR topography, soils data, aerial color infrared and standard aerial photography will be discussed. In addition a conceptual program that provides support to landowners for tile-drainage wetland construction will be presented.

### **Eric Schenck**

Ducks Unlimited

Eric W. Schenck is the Regional Biologist for Ducks Unlimited (DU) with responsibility for implementing DU's conservation programs in Illinois. He has a B.S. in Wildlife Management from the University of Idaho, a M.F.S. in Forest Science from Yale University and more than 26 years of professional experience in wildlife conservation. During the past 13 years, Mr. Schenck has successfully delivered more than 50 projects in the Illinois River Valley that have conserved more than 15,000 acres of wetland habitat and that represent a conservation investment exceeding \$10 million.

### **Eric McTaggart**

USDA Natural Resources Conservation Service

Eric McTaggart grew up on a grain farm in east central Illinois near the town of Gilman located in Iroquois County. He graduated from Illinois State University with a bachelor degree in Agricultural Business in 2003. Since graduating from Illinois State University he has worked for the USDA Natural Resources Conservation Service. He has had the pleasure of working for the agency in Iroquois, Logan, Pike, Kendall, and currently Ford and Livingston County. He has gained a wide range of experiences and knowledge through his years of service in several diverse counties. He has always been interested in public service and growing up on a grain farm, agriculture was and still is a passion. Through NRCS he has been able to couple his passion for agriculture with public service. Eric is married to his wonderful wife Cory and they have two beautiful daughters Molly and Megan.

### ***Local Participants Enhancing Water Quality and the Mississippi River Basin Initiative-Upper Peoria Lakes Project***

Tributary creeks contribute approximately half of the sediment entering Upper Peoria Lake. In addition to filling the lake and causing problems with turbidity, phosphorous also is carried along with eroded sediment potentially causing additional concern about water quality. Water from these tributary creeks also can contain nitrogen run-off from croplands located in watersheds that drain into Upper Peoria Lake. High levels of nitrogen cause concern for local drinking water and contribute to problems with hypoxia in the Gulf of Mexico.

The Mississippi River Basin Initiative (MRBI) is a federal program administered by the USDA Natural Resources Conservation Service (NRCS). The MRBI's goal is to address nitrogen and phosphorous problems in targeted watersheds like the Illinois River. Under the MRBI, \$2.4 million has been approved for a Ducks Unlimited (DU) project to restore wetlands and purchase conservation easements on up to 500 acres of frequently flooded cropland surrounding Upper Peoria Lake. Wetlands restored under the MRBI will be designed to help trap sediment and remove excess nutrients like nitrogen and phosphorous.

DU's first MRBI project involves the restoration of 83 acres of wetland adjacent to Richmond Creek. The Richland Creek project is designed to divert a small portion of the flow from the creek into the restored wetland basin and will be used as a demonstration site to promote future wetland projects surrounding Upper Peoria Lake. However, easement rates, land eligibility criteria, and the willingness of NRCS to accept "non-standard" wetland restoration practices are likely to ultimately determine the future success of the MRBI program in the Upper Peoria Lakes area.

**Moderator: Anaise Berry, Illinois River Road National Scenic Byway**

**Colin Wellenkamp**

Mississippi River Cities & Towns Initiative

Colin Wellenkamp is Director of the Northeast Midwest Institute's Mississippi River Cities & Towns Initiative, which provides the only forum in the nation through which local leaders can advance the matters around river management for the entire 10-state length of the waterway .

Colin has extensive experience in representing the interests of public entities in Washington, DC. and has spent the last ten years advancing the causes around sustainability, transit growth, water system improvement, sustainable economic development, first responder resources, renewable energy, and private sector partnerships for sustainable projects.

Colin is a trained environmental scientist and has participated in some the nation's largest human health assessments involving water bodies in the Midwest; he has also worked with companies such as Union Pacific Railroad and General Motors in implementing environmental management standards to make their operations more sustainable.

Born and raised in Missouri, Colin has a B.A. in Environmental Studies from Saint Louis University, a J.D. from Creighton University School of Law, and a Master of Laws (LL.M.) in Sustainable Development Law from George Washington University Law School and is an adjunct professor of Public Policy at Washington Adventist University in Maryland.

**Kyle Moore**

City of Quincy

***Pulling Together Along the River - Local Voices Influencing River Management***

More than 3 million residents populate the 124 Mississippi River main stem cities and towns. The Mississippi River Cities & Towns Initiative, comprised of 55 cities, gives a common voice to those who depend most upon the River, and by virtue of doing so, spans political and economic interests. The River is an important natural resource and these local leaders focus on how to best integrate transportation, farming, industrial, municipal and environmental interests to launch lasting solutions to River management issues. Discussion will include why this initiative was created and how a local government-lead effort empowering the ten States and more than 100 cities that border the Mississippi River can act for their continued prosperity, sustainability, and economic growth.



**Carrie McKillip**

University of Illinois Extension

Carrie McKillip, a native of Knox County, holds an Associate of Arts from Carl Sandburg College, a Bachelor of Science from Southern Illinois University-Carbondale, and an MBA from Western Illinois University. Prior to joining Extension in 2006, McKillip spent 20 years in not-for-profit management, including six years in higher education administration and business development. She currently serves as co-chair of the University of Illinois Extension Community and Economic Development Team.

McKillip works directly with community groups and agencies in participatory community planning, strategic planning, community development, resource development, and business development education. Partnering with other state agencies and local communities, McKillip has facilitated the development of multi-jurisdictional Natural Hazard Mitigation Plans, and serves as a delegate to the Extension Disaster Education Network (EDEN). Additionally, she is leading the Extension portion of a partnership with Illinois State Water Survey in hosting and facilitating a FEMA-funded “Risk MAP” discovery process, which facilitates information-gathering on flooding risks based upon watersheds rather than political boundaries. She can also provide specialized training for not-for-profit agencies in program development, evaluation, fiscal management and board development.

***Assessing Your Community’s Capital***

Community Engagement can be a great vehicle for the planning process, and most communities strive to include the community as they are determining strategies for the future. Many methodologies, however, can get bogged down in negative energy and complaints. Very few of us have been in SWOT (Strengths, Weaknesses, Opportunities and Threats) sessions where Strengths and Opportunities took as much space as weaknesses and threats. Often times the SWOT leaves participants feeling defeated before the planning begins, or at the very least disheartened.

Another, more positive, approach to use in planning meetings is based upon the Community Capitals Framework (Flora, Flora and Fey, 2004). The seven community capitals represent assets in each community, and can form the basis of “accounts” for community development. This workshop will provide an outline participants can utilize in using this approach for community Engagement. Included will be forms and handouts that can be adapted to participant’s communities, as well as instructions for how to use the process in their communities to create a positive, dynamic engagement process with stakeholders.

**Melissa Eaton**

Tri-County Regional Planning Commission

Ms. Melissa Eaton is a Senior Planner for Tri-County Regional Planning Commission and has acted as lead environmental planner at TCRPC for eleven years. Ms. Eaton has facilitated the development of watershed and stormwater plans for the Peoria Lakes region in Central Illinois utilizing the insight and expertise of citizens, elected officials, and local, state, and federal agency staff. She has successfully secured and administered a number of state and federal grants to implement environmental education initiatives, conduct habitat management, and create policy to address urban development impacts in the Illinois River Watershed. In addition to watershed specific planning activities, Ms. Eaton also integrates environmental management practices into regional land use and transportation planning, and she currently oversees a \$2.5 million project to create a Regional Sustainability Plan that integrates multiple planning disciplines such as economic development, housing and natural resources. This program, known as Brilliant.Bright.Community was funded, in part through the U.S. Housing and Urban Development's Sustainable Communities Regional Planning Grant program and as co-author of the grant, the Peoria/Pekin Region was one of 46 communities in the nation awarded in the first year of this highly competitive program.

***Watershed Planning : Communities Along the Illinois River***

Tri-County Regional Planning Commission of Peoria, Tazewell, and Woodford Counties conducted a regional stormwater planning process in 2009 to guide local units of government in NPDES Phase II stormwater regulations through a regional approach to stormwater management. While most local governments are continuing their collaborative approach to stormwater regulation compliance, a lack funding and status quo development policy still remain a barrier to large scale changes in land use practices. In this presentation, you will learn what is working at the grassroots to policy level and you will learn the obstacles to implementing comprehensive stormwater policy in mid-size communities in the Illinois River Valley.

**Moderator: Stephen Havera**, *Illinois Natural History Survey, Prairie Research Institute, University of Illinois at Urbana-Champaign*

**Levi Solomon**

Illinois Natural History Survey, Prairie Research Institute  
University of Illinois at Urbana-Champaign

My name is Levi Solomon and I am a Large River Fisheries Ecologist with the Illinois Natural History Survey (INHS). I am a Fish Component Specialist for the Long Term Resource Monitoring Program (LTRMP) at the Illinois River Biological Station located in Havana, IL. I received a B.S. in Zoology from Southern Illinois University Carbondale followed by a Master of Natural Science degree from Southeast Missouri State University. I have spent nearly 7+ years focusing primarily on the Mississippi and Illinois Rivers while also working on wetlands, Ozark streams, floodplains and forests with both the Missouri Department of Conservation and the INHS. My professional interests include the ecology of large rivers, movement patterns of fishes, biology of native and invasive species, and importance of backwater and off channel habitat. I enjoy fishing, boating, canoeing and spending time outdoors.

***The Expanding Influence of the Long Term Resource Monitoring Program (LTRMP)***

The Long Term Resource Monitoring Program (LTRMP) is a component of the U.S. Army Corps of Engineers' (USACE) Upper Mississippi River Restoration - Environmental Management Program (UMRR-EMP) and is implemented by the USGS Upper Midwest Environment Sciences Center (UMESC) in cooperation with the five Upper Mississippi River System (UMRS) states of Illinois, Iowa, Minnesota, Missouri and Wisconsin. While focusing on the UMRS, the LTRMP has become a model for large river monitoring and research since implementation in the late 1980's. LTRMP standard sampling methodologies (for fish, water quality, vegetation, macroinvertebrates) have drawn the attention of researchers not only from across the United States, but also from across the world. In an effort to try to quantify the spread of LTRMP fish methodologies, a survey was recently submitted to researchers from across the Midwestern USA. 48% (108 of 227) of participating researchers are familiar with LTRMP fish methodologies, and 35% (79 of 227) have used them in their fisheries sampling. In addition, the LTRMP has attracted the attention of researchers from outside the USA. LTRMP personnel have hosted numerous foreign scientists and have been involved in an ongoing information exchange with scientist from the Yangtze River Basin in China.

**Heath Hagy**

Illinois Natural History Survey, Prairie Research Institute  
University of Illinois at Urbana-Champaign

Dr. Heath Hagy is the Director of the Forbes Biological Station and the Bellrose Waterfowl Research Center of the Illinois Natural History Survey. He grew up on a family farm in Oklahoma and received degrees from Southern Nazarene University, North Dakota State University, and Mississippi State University. He is currently leading research to describe habitat conditions for spring-migrating diving ducks, estimate the spatial response of ducks to hunting disturbances, estimate carrying capacity for and habitat selection by black ducks in the interior United States, and evaluate new aerial survey designs for waterfowl and aquatic plants.

***Conservation Planning for Waterfowl in the Illinois River Valley-Local Management and Flyway Conservation***

Wildlife scientists throughout North America are continuously faced with a simple, yet difficult to answer question: “How much habitat is enough?” Depending on the species of wildlife in question, it can be fairly difficult to determine how much habitat is required to support a population of individuals. In fact, for most wildlife species, we’re not even sure of the population sizes, much less their habitat requirements. Waterfowl are a notable exception to this rule, as annual population and harvest surveys provide estimates of population size while intensive, smaller-scale research identifies habitat requirements and factors that may limit population growth. The Illinois River Valley is an important stopover region for migrating waterfowl during fall and spring. Scientists from the Forbes Biological Station are currently conducting research to guide habitat conservation in the region, assist wetland managers in attracting more waterfowl and other waterbirds to their wetlands, and affect waterfowl conservation on a flyway scale. Some of these important projects include estimating spring energetic carrying capacity and diet of diving ducks while assessing new techniques to indicate quality foraging habitats, describing foraging thresholds for dabbling ducks to refine assumptions of energetic carrying capacity models, and testing new aerial survey methods to better estimate population size in complex landscapes. I will highlight waterfowl and wetlands research conducted by the Forbes Biological Station and describe the important linkages to habitat conservation at a local, regional, and flyway scale.

**Drew Becker**

U.S. Fish & Wildlife Service

Drew Becker is a fish and wildlife biologist with the U.S. Fish and Wildlife Service. He serves as the eagle biologist for Illinois, Iowa, and Missouri. He provides technical assistance to landowners, project proponents, and government entities regarding regulations and permits issued under the Bald and Golden Eagle Protection Act and the Migratory Bird Treaty Act. Drew received his B.S. (2007) and M.S. (2010) degrees in Natural Resources and Environmental Sciences from the University of Illinois. He previously worked for the National Park Service in Hawaii, focusing on endangered birds.

***Bald Eagles: A Conservation Victory***

Fifty years ago only 400 adult bald eagle pairs could be found in the lower 48 states. The demise of our national symbol was brought on by multiple factors including: habitat destruction/degradation, illegal shooting, and DDT. There are now over 10,000 breeding pairs of eagles in the lower 48, and Illinois is home to over 230 pairs. In 2007 bald eagles were removed from the federal list of threatened and endangered species. The population of eagles had expanded to the point that protection under the Endangered Species Act was no longer warranted. Bald eagles are indeed a conservation success story.

Perhaps nowhere in the U.S. was the recovery more dramatic as in the Midwest. Eagles are now a common sight along the Illinois River. Collectively we have brought eagles back from the brink of extinction. Perhaps many of the tools that were utilized to save eagles can be applied to other complex environmental problems we face today.

**Moderator: Duane Friend, University of Illinois Extension**

**Roger Windhorn**

USDA Natural Resources Conservation

Current Job: Resource Soil Scientist/Geologist with the USDA, Natural Resources Conservation Service in Champaign, Illinois. State-wide responsibility in Soils, Soil Technology, Geologic Investigations, and Watershed Erosion and Sedimentation

Education: B.S. Degree in Agricultural Science – University of Illinois; M.S. Degree in Agronomy (Soils) - University of Illinois

Special Experience: Spent 43 years in the Soil Management field. Have Mapped Soils, worked extensively in Soil Interpretations, prepared and written three Soil Survey Reports, Trained over 35 new Soil Scientists and spent last 16 years conducting Geologic Investigations.

***SOIL HEALTH: It's All About the Soil!***

Soil Health is the buzzword within the USDA and NRCS right now! Why? It is attempt to emphasize how important good soil conditions, that is soil health, is for the continued increase in demand that is being placed on our soils to produce food and fiber for a constantly growing US and world population. Our soils must be able to continue to produce high quality products in a non-degrading, sustainable, manner for many generations to come. Physical, chemical, and biological soil properties must be understood and managed properly to bring this about! SOIL HEALTH is all about THE SOIL!!!

**Daniel Schaefer**

Illinois Council on Best Management Practices

I was born and raised on a small farm in Crittenden Twp, Champaign County Illinois. I have had a lifelong commitment to agriculture on both the production and supply side. I am a Certified Professional Agronomist and Certified Crop Adviser in the state of Illinois with a MS degree in Crop Science from the University of Illinois. Because of my close proximity to the University of Illinois, I participate and have originated several farm level research projects. The projects deal with strip-till and deep placement of P&K, phosphorus stratification and crop removal, nitrogen rate studies and high yield soybeans. In January 2012, after 31 years in the retail ag supply business I joined the Illinois Council on Best Management Practices as the Director of Nutrient Stewardship and work mostly in six IEPA targeted watersheds. My job is to promote nutrient best management practices to retail fertilizer dealers and have them make the recommendations to the farmers. Our goal is to Minimize Environmental Impact, Optimize Harvest Yield and Maximize Input Utilization.

***Nutrient Management Strategies in Illinois that Minimize Environmental Impact, Optimize Harvest Yield and Maximize Input Utilization***

Glaciations in the Upper Midwest created an abundance of rich but poorly drained agricultural soils. Modern production agricultures would not be possible over much of Illinois without artificial drainage. Improved drainage benefits agricultural production by lowering high water tables, which reduces crop stress from poor aeration and allows for timely field operations. This results in increased yields with less variability. Agricultural drainage includes both surface (ditches) and subsurface (tile) drainage. Subsurface drainage installation, in particular, has continued to expand recently with increases in precipitation, commodity prices and land values, along with technological advances that make installation easier and less costly. While subsurface drainage clearly benefits agricultural production, there are concerns about environmental goals. Dan has worked for 30 years as an agronomist, helping customers increase their yields through better crop management practices.

Today, Illinois agriculture is faced with serious challenges: we must increase our yields to feed a growing population and we must also accept our growing responsibility to keep nutrients for the crop and minimize impact on the environment. In order to prevent regulations we are changing the way we sustain agriculture research, applied on-farm research, and providing outreach needed to ensure that Illinois growers are maximizing yield and minimizing environmental impact. We will discuss and describe these activities and their success in Illinois. For more information: Illinois Council on Best Management Practices, <http://illinoiscbmp.org/> and Keep it for the Crop by 2025, <http://www.kic2025.org>.

**Doug Gucker**

University of Illinois Extension

Doug Gucker is the Local Food Systems & Small Farms Extension Educator in Unit 17 (DeWitt, Macon & Piatt Counties). Doug grew up in Baltimore, MD and after college returned to Illinois to farm his grandparents' farm.

Doug's educational background includes B.S. degrees in Agronomy ('75) and Biology ('73) from Virginia Polytechnic Institute and State University and a M.S. degree in Agronomy ('95) from the University of Illinois. Besides having been a small farmer in Illinois for 30 years, Doug has worked in the crop protection industry and in soil and water conservation in the Lake Decatur watershed. In addition, Doug is a Certified Crop Adviser (CCA).

***Cover Crops- A "Win-Win" Strategy for Farmers and the Environment***

Currently in central Illinois, the agricultural landscape is covered with summer annual crops, corn and soybeans, which leave the soil surface bare for seven months of the year. This annual cropping pattern leads to a situation where the soils are more subject to the forces of erosion and nutrient losses.

Cover crops are getting a lot of attention in the "Corn Belt" as a way to "perennialize" these annual crop rotations. In doing so it provides continuous living cover on the land, which reduces nutrient and soil losses into surrounding bodies of water. Doug will be discussing the results of the Macon County Cover Crops Demonstration project and its benefits to the farmer, cooperators and environment.



**Moderator: Kristan McKinsey, Peoria Riverfront Museum**

**B. Brandon Curry**

Illinois State Geological Survey, Prairie Research Institute,  
University of Illinois at Urbana-Champaign

B. Brandon Curry is a Senior Geologist at the Illinois State Geological Survey. He earned PhD and MS degrees in Geology from UIUC and Purdue University, respectively. His main interests are in reconstruction of past environments using tools available in sedimentology, geomorphology, and paleolimnology. He has participated in ISGS geologic mapping programs since the late 1980's, and recently completed a surficial geology map of Kane County, Illinois.

***Large Lakes; Big Floods; the Deglacial History of the Illinois River Valley***

During the Quaternary Period, the geomorphology of the Illinois River valley evolved as its function varied over time from proglacial stream valley, subglacial discharge locus, sluiceway for jökulhlaups (large meltwater floods), and slackwater lake basin. Here, we will focus on the latest events that sculpted the valley, starting with deglaciation of the Lake Michigan lobe, an ice stream from the south-central part of the vast Laurentide Ice Sheet. Evidence of large discharge events along the Illinois River valley include eye-shaped islands (lemniscate loops), scoured uplands, moraine-breaching channels, and fluted bedrock surfaces. The deglacial chronology of the Lake Michigan lobe indicates two temporal windows when meltwater was prevalent. The oldest window is 22.0 to 18.5 cal ka, and the floods associated with this period are known as the Kankakee Torrents. The oldest radiocarbon age that is unequivocally related to a large deglacial flood is about 18.9 ka; it was obtained from tundra plant fossils archived in basal lake sediments that fill the Oswego channel. The channel was formed by overflow of a proglacial lake across the Marseilles Morainic System. Heading downstream from the Oswego overflow channel, the next well-documented site that documents flooding is at Emiquon. Here, lacustrine sediments suggest two periods of high water; an earlier phase dating from about 18.4 to 17.5 ka, and a later phase from about 15.8 to 13.1 ka. During the early lake phase, water depths may have been as great as 15 m or more. The earlier phase corresponds temporally with a readvance and decay of the Lake Michigan lobe while it formed the Woodstock Moraine. The later lake phase at Emiquon is likely associated with erosion of the Chicago Outlet across the Valparaiso/Lake Border morainic systems. This erosion event formed channels at Emiquon that eroded to bedrock, but are nested in older lake sediment.

Slackwater lake depth was controlled, in part, by the Savanna-Deer Field terrace located at the mouth of the Illinois River. Hiatuses in the radiocarbon ages obtained from organics (needles, wood fragments) from Emiquon match OSL ages from dune sands at Manito, Illinois, dating at about 16.6 ka and 12.3 ka. The relationship of these relatively moist and dry events to global climate change is not clear, likely due to very steep ecotone/climatic gradients leading away from the decaying ice sheet. Another poorly constrained/understood phenomenon related to slackwater lake conditions is the effect of isostatic rebound, especially as the forebulge pulsed across the region starting at 23 ka, and peaking at about 10 ka.

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**Alan Harn**

Dickson Mounds Museum

Alan Harn serves as Assistant Curator of Anthropology at the Dickson Mounds Branch of the Illinois State Museum Lewistown, where he has conducted research into the prehistory of the Central Illinois River Valley for more than 50 years. In addition to his long contribution as an archaeologist and museum educator at Dickson Mounds, he is a scientific illustrator and has generated broad national recognition for the Museum through his forensic expertise in high profile crime scene investigations. Alan is the author of more than 80 books, monographs, and scientific papers dealing with archaeology, physical anthropology, human settlement and subsistence patterns, prehistoric social organization, paleo-environmental reconstruction, and zoology. He recently has turned his attention toward the completion of a long-awaited volume summarizing 85 years of archaeological investigations conducted at the Dickson Mounds site.

***Changes in the Land and Human Settlement Evolution at the Illinois/Spoon River Confluence Fulton County, Illinois***

Although eons of Emiquon organisms have slipped into a nearly windowless past in a landscape modified by man for some 11,000 years, beneath the site surface lies a uniquely preserved record of how Emiquon once appeared. Scientific research toward redefining Emiquon's past has been ongoing since the University of Chicago's pioneering archaeological investigations in the early 1930s. Twenty-eight archaeological excavations have been carried out among the 129 human habitation sites and 29 mortuary locations at Emiquon, with the faunal and floral refuse humans discarded often providing salient portraits of Emiquon's environmental past. Complementing these investigations, some 850 geological excavations and deep sediment corings have been undertaken in a series of transects across the landscape. The paleo vegetation, invertebrate remains, and human byproducts recovered from the sediments provide unprecedented data about hydrological evolution, landform assemblage development, and climatic shift to indicate how the Emiquon environment developed and changed through time.

**Jeffery Walk**

The Nature Conservancy

Jeff Walk is the Director of Science for the Illinois Chapter of The Nature Conservancy. He earned his Ph.D. from the University of Illinois at Urbana-Champaign studying grassland birds. He was an assistant professor at the University of Dubuque for two years before returning to Illinois to draft the Illinois Wildlife Action Plan as a research scientist for the Illinois Natural History Survey. Dr. Walk and colleagues at the University of Illinois recently published their findings from the oldest bird survey in North America in the book, *Illinois Birds: A Century of Change*. Jeff also serves on the Board of Directors for Illinois Audubon Society and on the Illinois Endangered Species Protection Board.

***Birds of the Illinois River: A Century of Change***

Illinois is one of the few places in North America with quantitative data on bird populations dating earlier than the 1960s. Thanks to historic efforts from Illinois Natural History Survey scientists including Stephen Forbes, Alfred Gross, Richard and Jean Graber, and Frank Bellrose, we have a clear picture of how the composition and abundance of bird communities across the state and within the Illinois River valley have changed from the early 1900s to present. Abundance of migratory waterfowl is considerably less than a century ago, with diving ducks in particular being much less abundant in recent decades compared to the mid-20th century. By contrast, populations of fish-eating birds, including herons, egrets, cormorants, pelicans, eagles, are substantially greater than the historical references. Other birds that have either recovered or colonized the Illinois River valley include wood ducks, Canada geese and black-necked stilts. Birds that depend on emergent and submersed aquatic vegetation have declined as these habitat types have become scarce in the Illinois River valley. On-going floodplain restoration projects, such as The Nature Conservancy's Emiquon Preserve, have resulted in dramatic concentrations of nesting and migratory birds.

**Moderator: Gary Johnson, Illinois Water Science Center,  
U.S. Geological Survey**

**Kevin Irons**

Illinois Department of Natural Resources

Kevin Irons has a B.S. in Biology from Northland College. After attending Michigan State University, Kevin accepted a position with the Illinois Natural History Survey (INHS) in Havana, Illinois in 1991.

Kevin served as a large river ecologist at INHS's Illinois River Biological Station as well as a fisheries specialist for the Long-Term Resource Monitoring Program, until 2010. Kevin has authored or co-authored over 47 technical reports and peer reviewed publications during this time. His writing focus included: long-term monitoring summaries and comparisons, native fish population dynamics, as well as papers on several non-native species including round gobies, white perch, and Asian carps.

Kevin currently serves as chair of the Upper Mississippi River Conservation Committee, co-chairs both the Asian Carp Regional Coordinating Committee Monitoring and Response Workgroup and the Council of Great Lakes Governors-Aquatic Invasive Species Task Force.

Since 2010, Kevin has been employed by the Illinois Department of Natural Resources as the Aquatic Nuisance Species Program Manager as well as the Aquaculture Program Manager. Duties include managing and coordinating efforts with State and Federal partners to prevent Asian carps from getting access to the Great Lakes and establishing populations there, as well as implementation of the Illinois State Comprehensive Management Plan for Aquatic Nuisance Species.

***Multi-Jurisdictional Approaches to Asian Carp in the Upper Illinois and Chicago Area Waterway System***

Agencies from bi-national, federal, state, provincial, local, and non-governmental agencies are collaborating in a state-of-the-science approach to stop the expansion of two aquatic nuisance species into the Great Lakes. Bighead and Silver Carp spread from the southern states throughout the Mississippi River watershed (including the Missouri, Ohio, and Illinois rivers) since their introduction into the US in the mid-1970s. Although monitoring efforts began documenting this issue as early as the 1990s, a concerted effort with national support began in 2010. The Asian Carp Regional Coordinating Committee organized multi-jurisdictional agencies from non-government, local, state, federal and even Canadian entities to manage the spread of these species. From multi-million-dollar response efforts using pesticides to regimented monitoring and communication efforts, these groups are working together in unprecedented ways to prevent these aquatic nuisance species access to the next great ecosystem. The coordinated efforts are providing a model framework for future responses in a multi-jurisdictional and multi-disciplinary-natural resource world. This framework embraces incident command and rapid responses, coordinating funding and support, as well as coordinating roles and responsibilities, and maximizing safety to prevent Asian carp establishment in the Great Lakes.

**James Garvey**

Southern Illinois University-Carbondale

Dr. Jim Garvey received his PhD at The Ohio State University and is currently the Director of the Center for Fisheries, Aquaculture, and Aquatic Sciences and Professor of Zoology at Southern Illinois University Carbondale. He has produced nearly 100 publications, including peer-reviewed journals, books, technical reports, magazines, and popular literature. His research interests are broad, revolving around aquatic ecology, animal conservation, and invasive species. He has served the American Fisheries Society at both the state and national levels and works closely with resource managers in state and federal agencies.

***Asian Carp Density and Movement in the Illinois River Waterway: Implications for Control***

Understanding Asian carp population dynamics in rivers and risk of invasion into new water bodies such as the Great Lakes require information about demographics, density, and movement. Researchers from Southern Illinois University Carbondale, Illinois Natural History Survey, and Illinois Department of Natural Resources have collected data in the Illinois River from the Chicago Area Waterway System (CAWS) to the confluence with the Mississippi River during 2011 through 2012. Demographics information including growth, mortality, and age of adult Asian carp was determined to assess the effects of environment and fishing on populations. Density was quantified using a combination of electrofishing, mark-recapture, and hydroacoustics. Movement was quantified using acoustic transmitters implanted in adult fish and a receiver array extending from the Mississippi River to the CAWS. Asian carp growth and condition were low relative to historical data, suggesting that high densities were reducing individual success. Recruitment for both 2010 and 2011 appeared to be low – another sign of high densities and poor environmental conditions. Asian carp dominated fish biomass, contributing to > 60% of the mass of fish in the river. Movement of Asian carp into the Illinois River and among reaches within the river depending on discharge. Movement was greater in 2011, a high discharge year than 2012, a drought year. Greater than 40% of the Asian carp in the Illinois River originate from the Mississippi River. Management of Asian carp in the Illinois River and reducing their probability of moving into the CAWS should consider control in the lower river plus the Mississippi River, which serves as a source for the invader.

**Reuben Keller**

Loyola University Chicago

Reuben Keller is an Assistant Professor in the Institute of Environmental Sustainability at Loyola University Chicago. He began working on invasive aquatic species during his undergraduate degree in Australia, where he spent a year researching the impacts of the invasive oriental weatherloach fish on local ecosystems. In 2001 he moved to the U.S. to begin his Ph.D. in David Lodge's lab at the University of Notre Dame. While there, his work focused on the development of risk assessment tools for aquatic species, and the integration of these tools with economic models to determine best policy.

After completing his Ph.D. in 2006 Keller held post-doctoral positions at Cambridge University, Notre Dame, and the University of Chicago. In 2011 he began as faculty at Loyola University Chicago. His research is focused on identifying the ways that non-native freshwater species are moved across the globe and how species invasions can be prevented. He works extensively with economists to integrate the ecology of invasions with information about trade so that the most rational solutions for invasion prevention can be found. He also works closely with managers to ensure that the results of his work are useful and can be implemented.

***Looking Forward: Risk Assessment Tools to Identify Future Invaders Before They Arrive***

Freshwater invasive species cause large environmental and economic damages and their populations are usually difficult to control and impossible to eradicate. This means that the most efficient way to avoid harm from these species is to prevent their introduction. However, not all aquatic species pose a risk of invasion, and many provide benefits in trade. Hence, the ideal approach to prevention would be to accurately determine prior to introduction which species are likely to be invasive, and which benign, and to focus available resources on keeping out high risk species. Risk assessment tools are being developed for this purpose, and have been shown to have high performance at discriminating between high and low risk species.

The Illinois River has aquatic connections to the Great Lakes and Mississippi River Basins. This means that species introduced to either of these systems can potentially reach the Illinois River. We have been working to develop risk assessment tools for fishes, crayfishes, plants, reptiles and amphibians in the Great Lakes. We will make these tools publicly available and hope to facilitate their adoption across the Basin. Because of the climatic similarity between the Great Lakes and Illinois River, many of the tools should be directly applicable not just to the Great Lakes, but to the Illinois River itself. This presentation will discuss the need for a coordinated response to the threat from new invasive species, how risk assessment tools are developed, and how they can be used to support management and policy.

**Moderator: Arlan Juhl, Illinois Department of Natural Resources**

**Tim Straub**

U.S. Geological Survey

Tim Straub has earned Civil and Environmental Engineering degrees from the University of Illinois (BS and MS) and Colorado State University (PhD). He works for the USGS on various projects including hydraulic and hydrologic modeling, and sediment transport and river mechanics.

**Amy Walkenbach**

Illinois EPA

Amy Walkenbach received BS and MS in Botany from Eastern Illinois University and manages the Watershed Management Section which includes the Section 319 Nonpoint Source Pollution Control Program, Illinois Green Infrastructure Grant Program and the Total Maximum Daily Load Program for the Illinois Environmental Protection Agency.

**Don Roseboom**

U.S. Geological Survey

Don Roseboom has a BS in biology from Monmouth College and a MS in chemistry from Bradley University. He is a hydrologist and stream restoration specialist for the USGS. Don also has a joint appointment with Colorado State University where he works with Dr. Chester Watson on stream assessments leading to restoration designs and project implementation.

***Intensive Streamflow, Sediment, and Water Quality Monitoring of a Small Watershed in Bloomington, Illinois***

The City of Bloomington, Illinois, restored Kickapoo Creek to a more natural state by incorporating green infrastructure—specifically flood-plain reconnection, riparian wetlands, meanders, and rock riffles at a 90 acre park within The Grove residential development. A team of State and Federal agencies and contractors are collecting data to monitor the effectiveness of this stream restoration in improving water-quality and stream habitat. The U.S. Geological Survey (USGS) is collecting and analyzing water resources data; Illinois Department of Natural Resources (IDNR) is collecting fish population data; Illinois Environmental Protection Agency (IEPA) is collecting macroinvertebrates and riparian habitat data; and Prairie Engineers of Illinois, P.C., is collecting vegetation data. The data collection includes conditions upstream, within, and downstream of the development and restoration. This presentation will focus primarily on sediment monitoring, but will also briefly discuss the streamflow and water quality monitoring. The monitoring effort includes a U.S. Environmental Protection Agency (USEPA) National Nonpoint Source Pollution (NPS) monitoring project using funds under Section 319 of the Clean Water Act, which were distributed through the IEPA. Additional monitoring and/or implementation funds were provided by the USEPA, IEPA, City of Bloomington, IDNR, USGS, and the U.S. Department of Agriculture, Natural Resources Conservation Service.

The 480-acre development was designed by the Farnsworth Group to reduce peak storm-water flows by capturing runoff in the reconnected flood plains with shallow wetland basins. Also, an undersized park bridge was built at the downstream end of the park to pass the 20 percent annual exceedance probability (historically referred to as the 5-year flood) flows, but detain larger floods. This design also helps limit sediment deposition from sediments transported in the drainage ditches in the upper 9,000 acres of agricultural row crops. Maintaining sediment-transport capacity minimizes sediment deposition in the restored stream segments, which reduces the loss of riparian and wetland-plant communities and instream habitat. Two additional goals of the restoration were to reduce nutrient loads and maintain water quality to support a diverse community of biotic species. Overall, 2 miles of previously managed agricultural-drainage ditches of Kickapoo Creek were restored, and the park landscape maximizes the enhancement of native riparian, wetland, and aquatic species for the park's trail system.

**Laura Keefer**

Illinois State Water Survey, Prairie Research Institute  
University of Illinois at Urbana-Champaign

Laura Keefer is a Fluvial Geomorphologist at the Illinois State Water Survey, Prairie Research Institute and been there for 27 years. Her current research interests focus on the processes of erosion and sedimentation. She also directs the Illinois Benchmark Sediment Monitoring Program (BSMP) activities and data analyses. Laura is experienced in hydrologic, hydraulic, sediment, and nutrient studies around the state which includes the over 20 years studying the Upper Sangamon River, Lake Decatur watershed.

**Elias Bekele**

Illinois State Water Survey, Prairie Research Institute  
University of Illinois at Urbana-Champaign

Dr. Elias Bekele is a research hydrologist at the Illinois State Water Survey, Prairie Research Institute. He has PhD in Civil Engineering and extensive experience in watershed modeling and water resources systems analysis. Currently, Dr. Bekele is the lead PI responsible for developing watershed management models to evaluate the water quality impacts of selected best management practices in tributary watersheds of Lake Decatur, in a collaborative effort to prepare total maximum daily load implementation plans.

***Watershed Management Tool for Evaluating BMPs: Case Studies in the Mackinaw and Upper Sangamon Rivers***

Implementation of watershed Best Management Practices (BMPs) could serve as crucial control measures to reduce nonpoint source pollutants from agricultural watersheds, as well as restoring and protecting water quality in streams and rivers. Successful BMP implementations, however, greatly depend on the watershed management tools employed. In partnership with The Nature Conservancy, the Illinois State Water Survey developed watershed management models for evaluating the effectiveness of BMPs such as constructed wetlands, grassed waterways and filter strips for selected subwatersheds in the Mackinaw River watershed.

These decision support models combined the utilization of an optimization algorithm for cost-effective selection and placement of BMPs with watershed models for simulating the hydrologic and water quality impacts of applied BMPs. Building on that experience, ISWS is currently working with Agricultural Watershed Institute and Illinois Environmental Protection Agency to develop watershed management tools that will be used to prepare a Total Maximum Daily Load (TMDL) implementation plan for two tributary watersheds of Lake Decatur (Upper Sangamon River), namely Big Ditch and Big-Long Creek watershed.

These tools will be calibrated with 15 years of hydrologic and nutrient data collected in the Lake Decatur watershed. The lake, which is the major source of public water supply for the City of Decatur, has been experiencing water quality problems mainly from nonpoint source pollutants from runoff. This presentation discusses the results of these watershed management tools in protecting water quality in Illinois streams and rivers.



**Mike Demissie**

Illinois State Water Survey, Prairie Research Institute,  
University of Illinois at Urbana-Champaign

Dr. Demissie is Director of the Illinois State Water Survey, a division of the Prairie Research Institute at the University of Illinois at Urbana-Champaign, Illinois. He is responsible for leading and managing over 150 professional and support staff that are engaged in data collection, research and public service in the field of water and atmospheric resources. His long-term research at the Water Survey has focused on problem solving in the general area of watershed science with emphasis on watershed processes and restoration. He has conducted research addressing issues such as ecology of large rivers; stream flow hydraulics; erosion and sediment transport; lake sedimentation; hydrology and hydraulics of floods; and hydrology of wetlands. He has published over 150 journal articles, reports, and conference proceedings.

Dr. Demissie received his B.S. degree in Civil Engineering from the University of Iowa, and M.S. and PhD in Civil Engineering from the University of Illinois at Urbana-Champaign.

Dr. Demissie is a registered Professional Engineer in Illinois. He is a Fellow of the American Society of Civil Engineers and a Diplomate of the American Academy of Water Resources Engineers. He is also a member of the International Water Resources Association, and the International Association of Hydrological Sciences.

***Sediment Budget and Trends in Sediment Delivery for the Last 30 Years in the Illinois River Basin***

The Illinois River drains nearly half of the state. Many major streams in Illinois drain into it. The Illinois Waterway with its system of locks and dams links Chicago and the Great Lakes to the Mississippi River, and thereby to the Gulf of Mexico. This linkage has a significant transportation and commercial value for the state and the nation. In addition, with its numerous backwater lakes, wetlands, and floodplain forests, the Illinois River Valley provides a significant habitat for fisheries, waterfowl, birds, and other animals, making it an important ecological resource.

The Illinois River's environment has been subjected to many of the impacts associated with the developments in the watershed, including waste discharges from urban areas, water-level control for navigation, and sediment and chemical inflow from agricultural lands. The water quality of the river was severely degraded for several decades prior to the 1970s when environmental regulations were enacted to control pollutant discharges. Since then the river water quality has been gradually improving. However, problems associated with erosion and sedimentation still persist and are recognized as the primary environmental problem in the Illinois River Valley (Illinois State Water Plan Task Force, 1987). The main sources of sediment to the Illinois River Valley are watershed erosion, streambank erosion, and bluff erosion. The contribution of watershed erosion to the sedimentation problem in the Illinois River Valley can be quantified by analyzing the sediment yields of tributary streams that drain into the valley.

The Illinois State Water Survey has been assessing the trends in sediment delivery to the Illinois River and the resulting sedimentation rates and patterns in the Illinois River Valley since the 1970's. The results of the latest assessment of the sediment budget and trends in sediment delivery will be presented in this paper.

Concurrent Session A-4 ♦ Thursday ♦ 10:15-11:30am ♦ Rooms III & IV  
The Attorney General's Role in Protecting the River:  
The Historic Perspective and the Response to a Recent Threat

**Moderator: Michael Mankowski, Illinois Attorney General's Office**

**Christine Zeivel**

Environmental Enforcement Bureau, Illinois Attorney General's Office

Christine Zeivel has been an Assistant Attorney General with the Attorney General's Office since 2009 and represents various environmental agencies within the State of Illinois, including IEPA, IDNR, and IDPH. While Christine handles all facets of civil environmental enforcement, including land, air and water cases, she is currently the primary AAG handling civil enforcement actions against road salt producers and storage facilities for their alleged water pollution violations in the State of Illinois, including Peoria County. Christine received her B.A. in Legal Studies with a minor in Environmental Studies from University of Illinois, and received her J.D. from Chicago-Kent College of Law, with certificates in Environmental Law and Public Interest Law.

***Water Quality Impacts of Transportation and Storage of Road Salt Along the Illinois River***

The Illinois River serves as the primary mode of transportation for road salt applied to Illinois roads, and bulk storage facilities are routinely located either on the river or close to its ports. These massive accumulations of salt contain high concentrations of pollutants, including chloride, iron and cyanide, and pose a great threat to both surface water and ground water that feeds the river system. Since road salt became the primary solution to deicing roads in the 1940s, its use has been debated due to the environmental impact of its application. However, the transportation and storage of road salt prior to application has historically received little attention. This presentation will focus on the use, transportation, storage, environmental impact and regulation of road salt in Illinois and current efforts taken by the Attorney General's Office and IEPA to protect the Illinois River and its watershed from the hazard posed.

Concurrent Session A-4 ♦ Thursday ♦ 10:15-11:30am ♦ Rooms III & IV  
The Attorney General's Role in Protecting the River:  
The Historic Perspective and the Response to a Recent Threat

**James Morgan**

Illinois Attorney General's Office

Mr. Morgan started his career with the Attorney General's Office in October of 1982 as the last person hired under the administration of Tyrone Fahner. He has served under Neil Hartigan, Roland Burris, Jim Ryan, and Lisa Madigan. During his career, Mr. Morgan has handled a variety of cases affecting Illinois' rivers from enforcement actions on behalf of the Illinois Environmental Protection Agency and the Illinois Department of Natural Resources, to cleanup cost recovery actions and natural resource damage recovery actions under federal and state statutes, to challenges to federal actions under the National Environmental Policy Act. Mr. Morgan graduated in 1979 from the University of Evansville with a B.S. in Environmental Science and from the University of Illinois in 1982 with his J.D.

***The Attorney General and the River: A Historical Perspective***

As the chief legal officer for the State, the Attorney General has been actively involved in litigation related to the use and protection of Illinois' rivers. Looking at that involvement we can see the evolution of the State's relationship to its rivers. The earliest cases focused on opening the rivers to navigation and other uses while the later cases focus more on protecting and restoring the rivers. This review will also discuss the Attorney General's statutory and common law authority to protect the public's interests in the rivers.

**Moderator: Elliot Brinkman, *Prairie Rivers Network***

***Blue Trails Initiative Round Table Discussion***

**Staci Williams**

American Rivers

Staci joined the staff of American Rivers in May of 2009 as the Waccamaw River Blue Trail Organizer, working with communities to enhance recreational opportunities, improve local codes and ordinances, and protect riverside land within the Waccamaw National Wildlife Refuge. Recently, she coordinated efforts to secure the Waccamaw River Blue Trail's designation as a National Water Trail by the Department of the Interior and is currently partnering with local stakeholders to pursue the National Blueways designation for the Lower Pee Dee watershed. She previously served as a Project Director for Conservation Voters of South Carolina, focusing on land use issues and sustainable development. An Iowa native, Staci received her B.A. from the University of Northern Iowa.

Staci currently serves as a board member for the Horry County Parks and Open Board and the City of Conway's Bike, Hike and Paddle Committee. In 2012, she received the Trail Advocate of the Year award for South Carolina at the International Trails Symposium.

[www.americanrivers.org](http://www.americanrivers.org)

**Anaise Berry**

Illinois River Road National Scenic Byway

Anaise leads the development efforts and serves as Executive Director of the Illinois River Road National Scenic Byway, a program of the North Central Illinois Council of Governments. The Illinois River Road, which follows the Illinois River between Ottawa and Havana and recognized for its natural intrinsic qualities, is one in a collection of roadways across the United States that have been designated by the U.S. Department of Transportation Federal Highway Administration as one of America's Byways®.

As Executive Director, Anaise manages all aspects of the Byway program, including infrastructure and program development and marketing, designed to heighten awareness of the byway region and grow the Byway region's visitor-based economy. In addition, Anaise is responsible for community outreach, grant writing, and fundraising for the Byway to ensure continued funding for Byway-related projects and organizational sustainability. Efforts include small business economic development as it relates to fostering the growth of small and/or authentic byway-related businesses throughout the corridor that will add to the visitor's experience as well as strengthen local economies.

Anaise also serves as President of the National Scenic Byway Foundation, the lead not-for-profit organization representing and advocating for America's Byways®.

[www.illinoisriverroad.org](http://www.illinoisriverroad.org)

**Moderator: Doug Blodgett, *The Nature Conservancy***

**Ryan Jackson**

Illinois Water Science Center, U.S. Geological Survey

Dr. Ryan Jackson is a hydrologist with the USGS Illinois Water Science Center in Urbana, Illinois. Ryan specializes in use of hydroacoustic instrumentation and autonomous technology for measurement of velocity and water quality distributions in rivers, lakes, and estuaries. Ryan's work supports ongoing research into use of hydroacoustic instrumentation for measurement of suspended sediment concentration, evaluation of Asian carp spawning habitat in Great Lakes tributaries, mixing in Great Lakes freshwater estuaries and rivermouths, understanding nearshore transport of contaminants near swimming beaches, and transport of contaminants in highly unsteady urban waterways. Ryan is also one of the primary authors of the Velocity Mapping Toolbox, a suite of post processing tools for ADCP data and a member of the multi-agency Sediment Acoustic Leadership Team (SALT).

***Current State of Suspended-Sediment Surrogate Technology***

Methods are rapidly advancing to estimate sediment characteristics in aquatic systems using acoustic metrics. The advantages of hydroacoustic metrics as surrogates of suspended sediment include greater accuracy due to high temporal resolution, a large sample volume, environmental robustness, a technology that is now ubiquitous in streamflow monitoring, and simultaneous velocity measurement. In tested fluvial, estuarine, and marine systems, this approach is effective for continuous monitoring of suspended-sediment concentrations, and possibly particle-size categories, bedload transport, and bed-material composition.

However, best methods have not been determined for measuring acoustic attenuation and adjusted backscatter amplitude and for computing suspended-sediment concentration and other sediment characteristics.

This talk will focus on the current state of suspended-sediment surrogate technology, primarily with respect to acoustic methods, and report on the ongoing efforts of the multi-agency Sediment Acoustic Leadership Team (SALT) to develop standardized techniques and practices for suspended sediment monitoring using hydroacoustic technology.

**Donald Luman**

Illinois State Geological Survey, Prairie Research Institute  
University of Illinois at Urbana-Champaign

Donald Luman has a Ph.D. from the University of Illinois at Urbana-Champaign and is a Principal Geologist at the Illinois State Geological Survey, which is a division of the Prairie Research Institute at the University of Illinois. He also has an adjunct faculty position at the University of Illinois, Department of Geography. Don's specialties include remote sensing with an emphasis on land use/land cover analysis, geologic mapping, and for the past seven years has been conducting investigations based upon LiDAR technology. Prior to joining the ISGS in 1993, Don conducted research and taught remote sensing and GIS at the university level in Illinois for twenty years, and assists in the coordination of mapping remote sensing research activities at the ISGS. For more than 25 years, Don has worked closely with the U.S. Geological Survey Geospatial Liaison office for Illinois regarding statewide partnership activities pertaining to topographic mapping, digital orthoimagery, land cover data inventory, and related digital data activities on behalf of the State of Illinois.

***Arrival of LiDAR Enhanced Elevation Data for the Illinois River Valley: A First Look***

Enhanced elevation information acquired in 2011 using airborne Light Detection and Ranging technology (LiDAR) for approximately 300 miles of the Illinois River Valley has recently been delivered to the Illinois State Geological Survey (ISGS) as part of the multiagency Illinois Height Modernization Program. To date, LiDAR-source elevation data have been collected for approximately two-thirds of the state's 102 counties, as well as a majority of the floodplain area of the Mississippi, Wabash, and Illinois Rivers. ISGS serves as the in-state point-of-contact for quality assuring, archiving and distribution of publicly accessible LiDAR for Illinois, and processed data derivatives are available for free download through the ISGS Clearinghouse website < <http://www.isgs.uiuc.edu/nsdihome/webdocs/ilhmp/>>.

Prior to the collection of LiDAR data, the best available elevation information for the Illinois River Valley has been U.S. Geological Survey, National Elevation Dataset (NED) raster-based digital elevation model data (DEM). The majority of these NED data possess a 1/9th arc-second resolution, with the remaining floodplain area at a 1/3rd arc-second resolution (horizontal grid spacing approximately 3x3 meters and 10x10 meters, respectively). The 1/9th arc-second data was acquired in 1995 and 1999 by the USGS as part of a post-Great Flood of 1993 initiative, while the lower resolution 1/3rd arc-second elevation source data ranges from 1946-1980.

LiDAR is delivered as a vector-based 'point cloud', which comprises nearly 15 billion ground elevation points for the Illinois River Valley LiDAR project. For comparison, processing these point cloud data to a 'bare earth' DEM results in a grid with a horizontal resolution of less than 1x1 meter. While the Illinois River Valley NED data can accurately support generation of 10-ft and 5-ft (less common) contours, LiDAR's enhanced vertical accuracy means that the bare earth point cloud can support the generation of 2-ft contours, sufficient to support a variety of ecosystem applications and investigations.

**Nathan Smith**

Riverside Research

Nathan Smith is the lead software engineer in the Computational Science and Engineering Laboratory at Riverside Research where he is also the technical lead on a research program studying the application of unmanned aerial systems to agriculture. Nathan is also involved in the research and development of computational physics engines and applications of design optimization. Prior to joining Riverside Research, Nathan also conducted research in ad hoc wireless communications systems and simulations at Motorola Labs. Nathan received his BS in Applied Computer Science from Illinois State University in 2000 and his MS in Computer Science from the Illinois Institute of Technology in 2013.

***Eye in the Sky-The Use of Unmanned Aerial Systems (UAS) and Remote Sensing to Monitor Rivers and Associated Ecosystems***

Technological advances in remote sensing and unmanned aerial systems have created compelling new possibilities for their application in ecological monitoring of rivers, wetlands, and other ecosystems. UAS-based remote sensing offers the ability to quickly and at relatively low cost gather and process sensor data to generate actionable information for ecosystem management. However, successful UAS mission planning and execution involves a delicate balance of trade-offs regarding air vehicle type, sensor payload, payload stabilization systems and techniques, navigation electronics, sensor data processing and analysis, and many other factors. Applying many “lessons learned” from its ongoing research in UAS-based remote sensing for precision agriculture, Riverside Research will identify and discuss the sequence and procedures for conducting successful UAS-based remote sensing missions for research as well as for practical applications such as ecological monitoring of various ecosystems.

**Moderator: Russ Crawford, Tri-County Regional Planning Commission**

**Ryan Burchett**

Mississippi River Distilling Company

Ryan Burchett is an owner and distiller at Mississippi River Distilling Company in LeClaire, Iowa. Ryan and his brother Garrett opened this family business in December of 2010 and have been growing their brands ever since. The native Iowans make vodka, gin and whiskey from grains purchased directly from farmers within 25 miles of the distillery. Ryan left his position as chief meteorologist at KWQC-TV in Davenport to pursue the family business full time. The distillery distributes their products at retailers across Illinois, in 10 other states and at their distillery in LeClaire.

***Mississippi River Distilling Company: Raising A Glass to Resources of the Riverside***

Meet the owner of Mississippi River Distilling Company as he tells the unique story of his “grain to glass” distillery in LeClaire, Iowa. This small distillery takes a sustainable approach to everything they do. The grain, the water and the spirits are all born on the banks of the river. Working side by side with local farmers and industry, all of the byproducts are reused for production of other items in the community. Learn how this old fashioned approach to small business has put a small river community on the map and brought worldwide attention to the excellent resources of the river.



Wednesday ♦ 1:30 - 4:30pm ♦ Conference Room 1  
Interactive Digital Technologies Open House

Every day more data and Web-tools that can help you accomplish your resource management goals come on-line. Visit the Interactive Digital Technologies Open House to spend one-on-one time with representatives from local, state, and federal organizations to get the low-down on the data and tools that are available to you. Invest a small amount of time now and learn how to 1) identify, acquire, and understand available data, 2) turn data into useful illustrations or maps, and 3) combine various data to answer your questions.

Both novice and advanced users are welcome. The presenters work with these tools daily; they know the tips and tricks to get the right results—right away! And if that's not enough to get you to step inside—check out the 'golden ticket' in your conference packet. You have a chance to win a really cool techy-gadget.

**Moderators: Andrew Phillips, Illinois State Geological Survey, Prairie Research Institute, University of Illinois at Urbana-Champaign**  
**Gary Johnson, Illinois Water Science Center, U.S. Geological Survey**

**Gary Johnson**

Illinois Water Science Center, U.S. Geological Survey

Gary Johnson serves as the Chief of the Hydrologic Data Section of the USGS, Illinois Water Science Center in Urbana, IL. His current duties include oversight and administration of the entire streamflow gaging station network throughout the State of Illinois, with an annual budget of over \$3.4 million dollars. Gary has completed a variety of surface-water quantity, bathymetric, and surface-water quality projects. During his 24-year career, Gary has authored or co-authored over 30 USGS scientific reports. Gary holds a BS degree in General Engineering and a Masters degree in Public Administration, both from the University of Illinois.

***How to Access USGS Water Resources Data***

Abstract not available at time of publishing.

**Dee Lund**

Illinois State Geological Survey, Prairie Research Institute,  
University of Illinois at Urbana-Champaign

Dee Lund is an Assistant Geologist and GIS specialist for the Illinois State Geological Survey (ISGS) at the Prairie Research Institute at the University of Illinois at Urbana-Champaign. She is part of the group working on the Illinois Height Modernization Program. Ms. Lund is currently developing a map application that will provide easy access to data for benchmarks and other geodetic markers around Illinois. Prior to joining the ISGS in 2001 Ms. Lund was an archaeologist and map illustrator for the Wisconsin State Historical Society - Museum Archaeology Program. Dee has a B.A. in geology and anthropology from the University of Minnesota - Duluth.

***NEW at the Geospatial Clearinghouse—LiDAR, Water Wells, Orthoimagery and Much More...***

The Illinois Geospatial Data Clearinghouse hosted on the Illinois State Geological Survey website has a wealth of geospatial data from around the State of Illinois. The Clearinghouse has recently had several updates in regards to new data availability and visually in the display and accessibility of the data. Stop by and learn how to access LiDAR data, water well data, orthoimagery and more.

**Phil Graff**

Illinois State Water Survey, Prairie Research Institute,  
University of Illinois at Urbana-Champaign

***The Illinois River Decision Support System (ILRDSS)***

Bio and abstract not available at time of publishing

**Shelley Silch**

U.S. Geological Survey

***The National Map***

Bio and abstract not available at time of publishing

Wednesday ♦ 1:30 - 4:30pm ♦ Conference Room 1  
Interactive Digital Technologies Open House

**Carolyn White**

University of Illinois at Urbana-Champaign

Dr. Carolyn S White is currently Project Manager in the CyberInfrastructure and Geospatial Information Laboratory (CIGI) at the University of Illinois in Champaign-Urbana (<http://www.cigi.illinois.edu>). For a decade she has been managing the development of web-based GIS decision support. She is also engaged in some of the hands-on GIS and IT aspects in the projects, as well as providing one-on-one help to users requesting assistance. Previous affiliations for this work include the College of ACES and the Department of Computer Science.

Dr. White came to the University of Illinois in 1980 after receiving her PhD at the University of Arizona. For almost two decades she served as Manager/Acting Director/Assistant Director of a lab providing statistical support for instructors and their students as well as researchers across the University of Illinois campus. In the early 1990s she became smitten with the opportunities geographic information systems (GIS) provide for visually displaying census data in a map and its relationship with other data. The next step was moving to integrate this with web-based GIS.

Involvement in the development of the Resource Management Mapping System (RMMS) was life changing since it prompted learning about issues in watershed management and water quality.

***Resource Management Mapping Service (RMMS): A Tool for Watershed Stakeholders***

Public and governmental watershed stakeholders will find RMMS the GO-TO place for data on water quality issues. RMMS combines data from the Illinois State Geological Survey data clearinghouse (<http://www.isgs.uiuc.edu/nsdihome>) with data published by the Census Bureau, FEMA, ESRI, USDA-NRCS and data created at IDNR and IEPA in one location and in one coordinate system. The user can choose from over 70 data layers to view multiple layers in their web browser. [(IE is the preferred browser in the current version.)]

Over the past two years the IEPA Bureau of Water has expended great effort to expand the number of data layers at RMMS which are created via RMMS, as well as including data from other entities – other state agencies as well as consortiums such as Conservation Easements from NCED. Open the Resource Protection Layers tab at RMMS to see this expanded set of data.

The number of reports the user can generate has also been expanded to reflect the increased number of layers IEPA is now creating at RMMS. These reports can be aggregated at different levels – such as 10 or 12 digit watershed, county, legislative district, Illinois or Kaskaskia River basin, watershed-based plan, Watersheds TMDL, AUID, TMDL Watersheds. The tool to generate these reports is labeled Public Reports on the tool bar.

A new tool has been added that allows the user to query 305(b) lakes or streams for specific – or a combination of – water contaminants or sources. This tool is labeled Causes/Sources.

The area calculation tool has been revised so that more information is available in the reports.

RMMS provides the user many other tools to assist in decision support and communication. A few of these tools include creating a buffer of a specified length, a drill-down identify tool displaying the attributes of each layer at a given point, finding all records with a specific attribute, annotating a map with text and symbols, saving the map created for inclusion in a document, emailing the map and comments to others.

During the sessions at the Interactive Digital Technologies Open House, we will provide informal demonstrations to help maximize the experience with RMMS to meet your needs.

<http://rmms.illinois.edu>

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Interactive Digital Technologies Open House

**Zoe Zaloudek**

Illinois State Water Survey, Prairie Research Institute,  
University of Illinois at Urbana-Champaign

Zoe joined the Midwestern Regional Climate Center (MRCC) in March 2010 as a shared GIS Specialist. Her main focus was the creation and automation of daily temperature and precipitation maps for the Midwest Climate Watch. She has also developed web mapping applications for the MRCC using Flex. In addition, Zoe works with the Illinois State Climatologist to make maps depicting extreme weather events.

Zoe first began working at the Illinois State Water Survey in May 2005 as a GIS intern for FEMA's Floodplain Map Modernization project. She continues to work with floodplain mapping, as the other portion of her work time is spent with FEMA's Risk Mapping, Assessment, and Planning program (Risk MAP). For this project, she works on a team developing Digital Flood Insurance Rate Maps (DFIRMs) and other flood risk products.

*Interactive Technology from the Midwestern Regional Climate Center*

Abstract not available at time of publishing.

**Kingsley Allan**

Illinois State Water Survey, Prairie Research Institute,  
University of Illinois at Urbana-Champaign

Kingsley Allan is the GIS Manager for the Coordinated Hazard Assessment and Mapping Program (CHAMP) at the Illinois State Water Survey located on the Urbana campus of the University of Illinois. The ISWS is a FEMA Cooperating Technical Partner (CTP) along with Illinois DNR. These agencies took full statewide responsibility for the Map Modernization Program. The ISWS is actively involved in RiskMAP, and will soon begin FEMA Letter of Map Revision (MT-2) review for the state of Illinois. Kingsley is a Certified Floodplain Manager, GIS Professional, HAZUS Trained Professional, former ESRI Authorized Instructor, and past president of the Illinois GIS Association. For 20 years he has worked in map making, modeling, 3D visualization, web services, and database building for a variety of projects. He holds a B.A. degree in Geography from Utah State University, and a Certificate in Business Administration from University of Illinois.

*Using Augmented Reality (AR) in Scientific Outreach*

Augmented Reality (AR) refers to the creation of a digital layer that appears overlaid onto the real world when viewed through a digital device such as a smart phone, or Google Glass. Marketers are adopting AR, but the scientific community has hardly begun to image the applications and benefits. This exhibit will provide a brief overview of the technology, show the AR enhancements made to a poster, and demonstrate the process associated with creating an AR layer using the Aurasma platform. Anyone who engaged with public outreach and education will find this interesting.

**Tim Prescott**

USDA Natural Resources Conservation

*LiDAR: Detail at Your Fingertips*

Bio and abstract not available at time of publishing.

**Joe Konczyk**

Illinois Environmental Protection Agency

Joe Konczyk is a geologist and mapping specialist with Illinois EPA's Groundwater Section, specializing in GIS software applications and geologic modeling programs. Joe also performs field evaluations for the Division of Public Water Supplies, which includes field mapping, water sampling and other data collection. In addition, he provides many colleagues with database and mapping analysis and graphical information services. Joe received his BS in Geology from Bradley University in 1997, and has done graduate work in hydrogeology at SIUC.

*Illinois' Source Water Protection Program GIS Update*

The 1996 amendments to the federal Safe Drinking Water Act (SDWA) required states to develop and implement a source water assessment program (SWAP). Source water protection (SWP) is a proactive approach to protecting our critical sources of public water supply and assuring that the best source of water is being utilized to serve the public. It involves implementation of pollution prevention practices to protect the water quality in a watershed or wellhead protection area serving a public water supply. Along with treatment, it establishes a multi-barrier approach to assuring clean and safe drinking water to the citizens of Illinois.

Pollution prevention, like preventive medicine, starts with awareness. Thus, source water assessment is the cornerstone essential to the development and implementation of source water protection plans and includes the following:

- Delineating the source water protection area (e.g., watersheds and wellhead protection areas);
- Inventorying potential contamination sources;
- Determining the susceptibility of the source water to contamination
- Providing recommendations to protect the source water; and
- Providing this information to the public.

The Source Water Assessment Program, as implemented by Illinois EPA, will help communities make important decisions about how to protect their drinking water. By working to ensure safe drinking water supplies, the health and economy of the community, as well as the preservation of natural resources, will be greatly improved. In addition, investments in drinking water treatment will be sustained for a longer time period.

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**Eric Miller**

Tri-County Regional Planning Commission

Eric W. Miller is the Program Manager with Tri-County Regional Planning Commission in Peoria, IL. Mr. Miller has been associated with GIS development in the region since beginning of his career with the Commission in 1989. He has managed numerous GIS projects for the Commission including the startup of PeoriaGIS a multi organizational GIS consortium in Peoria County. Also, he was involved with the development small city GIS startups in the Village of Morton, and the Cities of East Peoria and Pekin.

Over the years Mr. Miller has served in many capacities with the Commission including Transportation Planner and Director of Planning. Mr. Miller earned a B.S. Degree in Applied Geography from Illinois State University. He has been with TCRPC for 22 years.

***Managing Geospatial Data in the Cloud***

ArcGIS Online is a collaborative, cloud-based mapping and GIS platform that lets members of an organization create, share, and access maps, applications, and data. It allows users to create web based maps quickly and without application development (programming) skills. In addition, it provides base map information that can be combined with existing organizational data to provide access to users within and external to an organization. It also provides a powerful mobile component that allows users to access maps and data on phones and tablet devices in the field for data collection projects. TCRPC uses ArcGIS Online to complement and extend its current GIS environment to serve the needs of local government in the region and to provide information to the general public.

**Curt Reynolds**

Illinois Department of Transportation

***Demonstration of GIS Data and Functions used by Illinois Department of Transportation Facilities, Offices, and Bureaus***

IDOT uses GIS for various lines of business applications. Webbased GIS systems provide information to the traveling public and businesses using roadways for transportation in Illinois. IDOT offices and bureaus statewide use GIS for analysis and visualization of all types of information. GIS is an essential component for managing data and processes for traffic safety, roadway inventory, planning, environment roadway operations, and many other functions within the agency.

During the open house, an IDOT GIS specialist will be available to answer questions and demonstrate some of the GIS data and functions used by IDOT facilities, offices, and bureaus.

**Dennis Latto and José Alarcón**

**South Suburban Mayors and Managers Association**

***Green Infrastructure Planning through the South Suburban Mayors and Managers Association GIS Atlas***

Bio and abstract not available at time of publishing.

## ◆ Conference Co-Chairs ◆

### **Christine Davis**

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Chris is a Project Manager for the Nonpoint Source Unit in the Watershed Management Section of the Bureau of Water at Illinois EPA's Springfield Headquarters. Chris routinely works with non-profit organizations and local governments to successfully implement site-specific and watershed-wide nonpoint source pollution control practices, projects and programs.

Her job includes many "other duties as assigned", such as being lead staff to update the Illinois Nonpoint Source Management Program, coordinating documentation of nonpoint source needs for the State of Illinois in the Clean Watershed Needs Survey and serving as a co-chair for this conference.

Prior to working with Illinois EPA, Chris was a Resource Conservationist for the Macon, Sangamon and Macoupin County Soil & Water Conservation Districts for more than eight years. During that time, she developed and delivered a variety of environmental education programs for students and adults and devoted a great deal of her time developing conservation farm plans and designing conservation practices for local agriculture producers.

Chris has a Bachelor of Science degree in Agronomy from Western Illinois University and has invested thousands of volunteer hours to support environmental organizations in central Illinois.

### **Laura Keefer**

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Laura is a Fluvial Geomorphologist and Principal Investigator at the Illinois State Water Survey, Prairie Research Center, University of Illinois since 1986. She develops, manages, and implements research studies in surface water hydrology with particular emphasis in the monitoring, investigation and assessment of sediment transport and water quality in Illinois watersheds. She has authored or co-authored over 4 dozen technical reports and presents research results at local, state, and national conferences. Laura has devoted time to technically advise many watershed planning committees in Illinois.

Prior to working for the Illinois State Water Survey, Laura was a Hydrologic Aide at the U.S. Geological Survey in Urbana, Illinois.

Laura has been on the Conference Planning Committee since 2003 and this is first conference as co-chair. She has also served as program chair for the 13th Annual Illinois Lake Management Association Conference in 1998.

Laura has a Bachelor of Science in Geology and Master of Science in Geography (Fluvial Geomorphology), both from the University of Illinois at Urbana-Champaign.

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River Action League, Bradley University  
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◆ Notes ◆