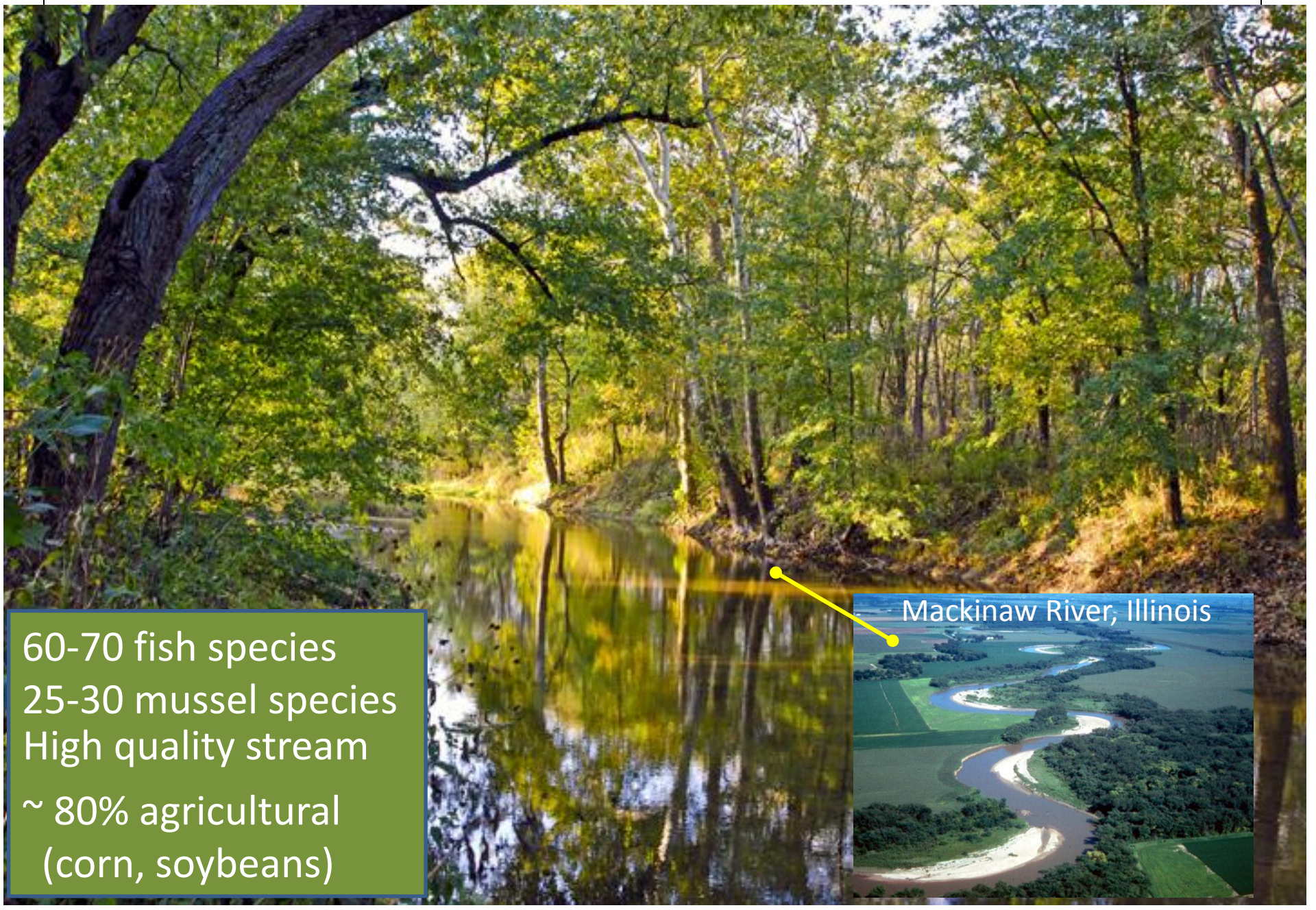
Outreach Strategies and Effectiveness on the Awareness and Adoption of Conservation Practices by Farmers in the Mackinaw River Watershed, Illinois

Maria Lemke
The Nature Conservancy, Illinois

River restoration in Upper Mississippi River Basin



60-70 fish species
25-30 mussel species
High quality stream

~ 80% agricultural (corn, soybeans)

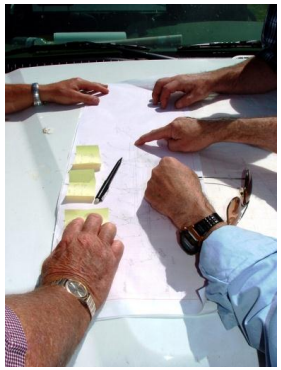
Mackinaw River Project Sites

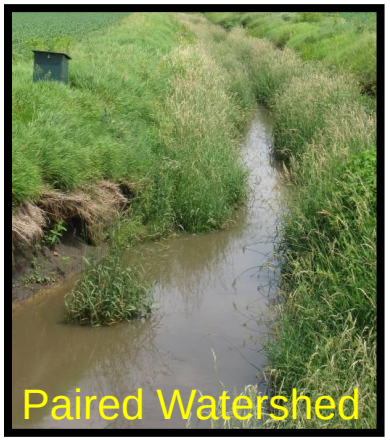
Illinois River

Mississippi River

Research and Demonstration Farm

Drinking Watershed Project





Lake Evergreen

Lake Bloomington

USGS gaging stations

Goals:

(1) Improve hydrology and water quality of the Mackinaw River watershed for mussels, fishes, and people who depend on it for water supply and recreation

(2) Reduce nutrient export from the Mackinaw River to downstream river systems

(3) Develop a model for hydrologic and water quality improvements that is economically viable, compatible with agricultural production, and scalable across the Upper Mississippi River Basin.

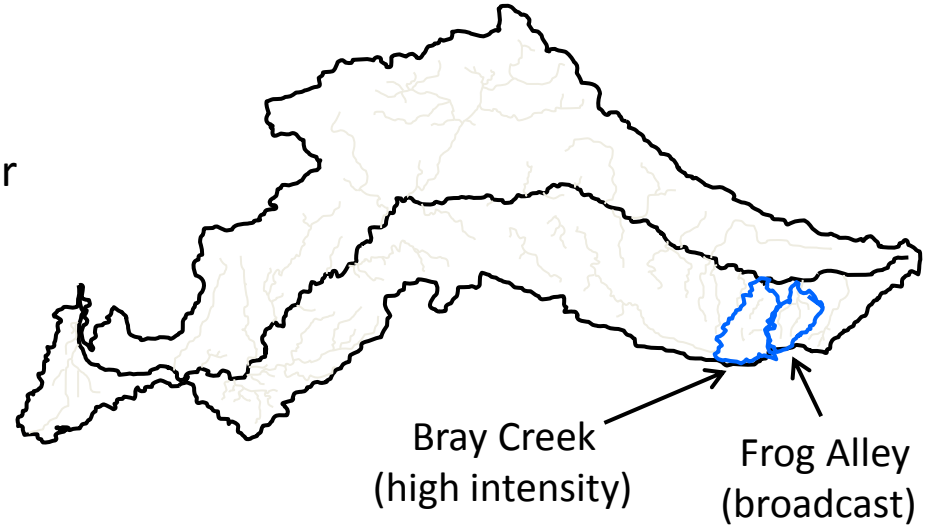
Questions:

(1) Does outreach increase awareness of cost-share programs and the application of conservation practices?

(2) How well do conservation practices work to improve water quality, hydrology, and biodiversity?

(3) What encourages landowners to apply conservation practices?

Outreach: 2000-2003

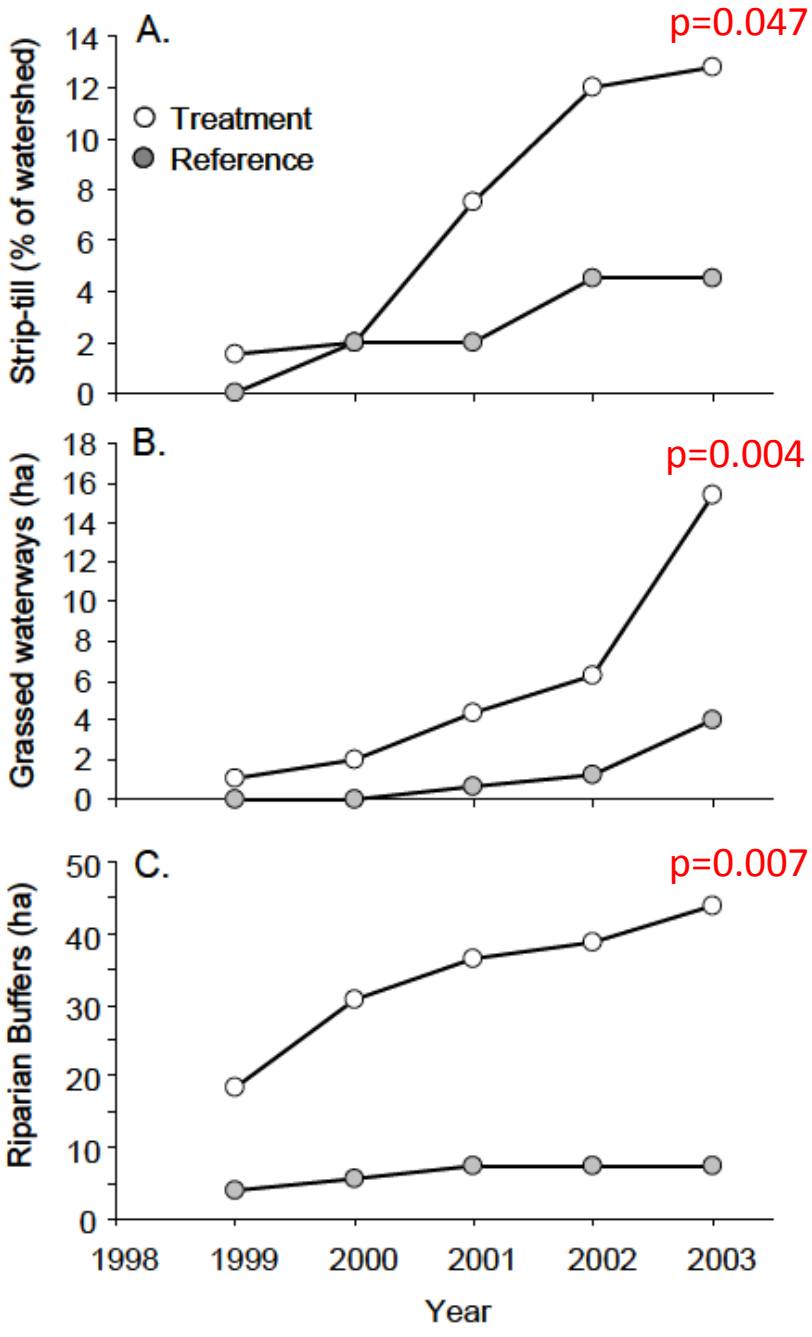


Bray Creek: High intensity

Frog Alley: Broadcast

- Flyers, newsletters: Information on conservation programs
- County-wide workshops, field demonstrations, tours: Strip-till, habitat restoration, cost-share programs
- County-wide promotion of CPP cost-share programs (strip-till, grassed waterways)
- County-wide program through CPP: Paid $10 per acre to producers that adopted strip-till (40 or 80 acres)

- Introductory newsletter, schedule of outreach events
- One-on-one site visits
- Workshops: no-till
- Tours: constructed wetlands
- Additional $10 per acre to adopt strip-till



Lemke et al., 2011 JEQ 40:1215-1228

Surveys: 2000 – outreach - 2003

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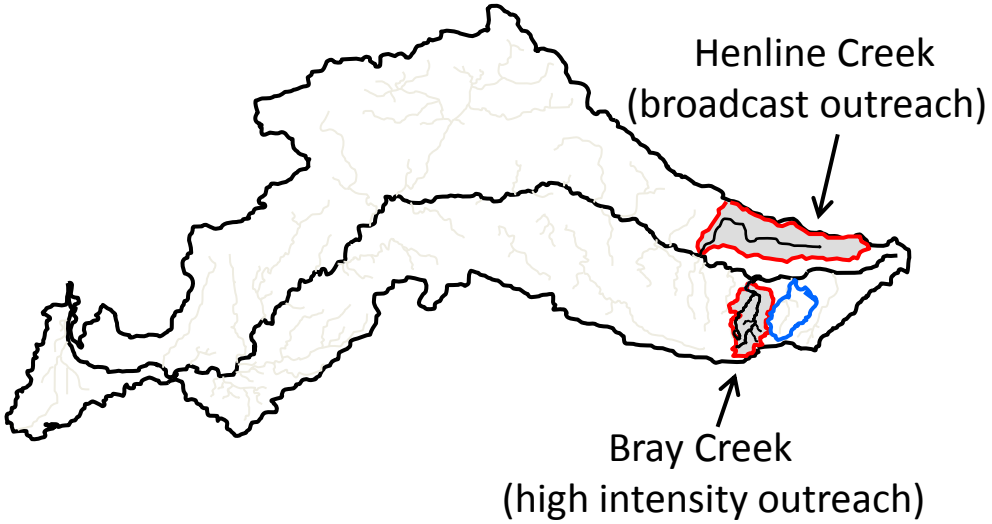
McLean County Soil & Water Conservation District

NRCS
Natural Resources Conservation Service

Local farm manager



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Henline Creek: Broadcast

- One-on-one site visits
- Workshops: no-till
- Tours: constructed wetlands
- Additional $10 per acre to adopt strip-till

Surveys: 2000 – outreach - 2003

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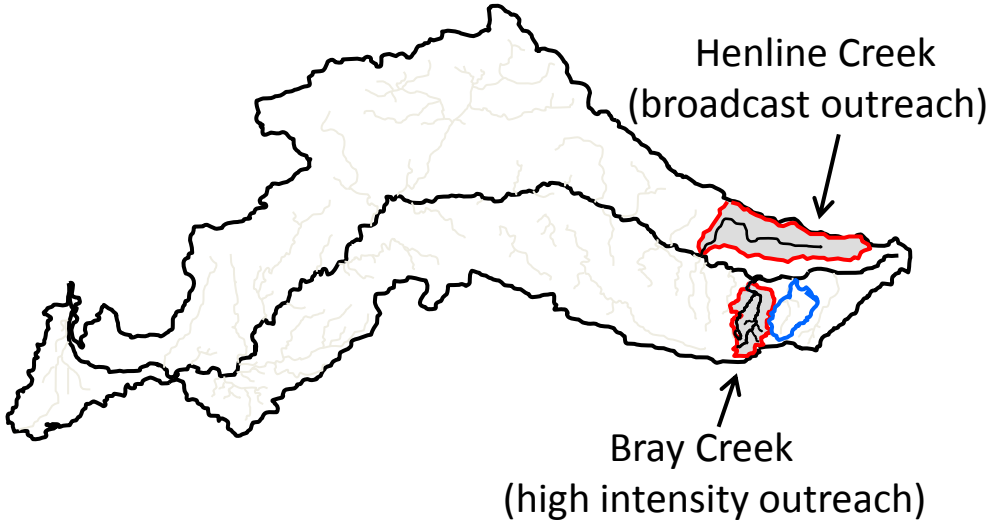


Bray Creek: High intensity

Henline Creek: Broadcast

<u>Determine the effectiveness of outreach efforts at increasing</u>:

(1) Familiarity with cost-share programs

(2) Participation in cost-share programs

(3) General awareness of agricultural threats to the watershed

Survey Results: Conservation and farming practices

Conservation practice	Bray Creek watershed (High intensity outreach) 2000 (%)	2003 (%)	Difference (%)	Henline Creek watershed (Broadcast outreach method) 2000 (%)	2003 (%)	Difference (%)
Grassed waterway	50	92	+42*	53	53	0
Stream buffers	8	17	+9	42	37	-5
Terraces	0	0	0	0	5	+5
Contour farming	0	0	0	0	0	0
Conservation tillage[1]	83	92	+9	89	89	0

1 Conservation tillage was defined as at least 30% of residue from previous crop remaining onfield surface after planting does not exclude chisel plowing, disking, or cultivation of soybean residue in the spring.

* $p < 0.05$

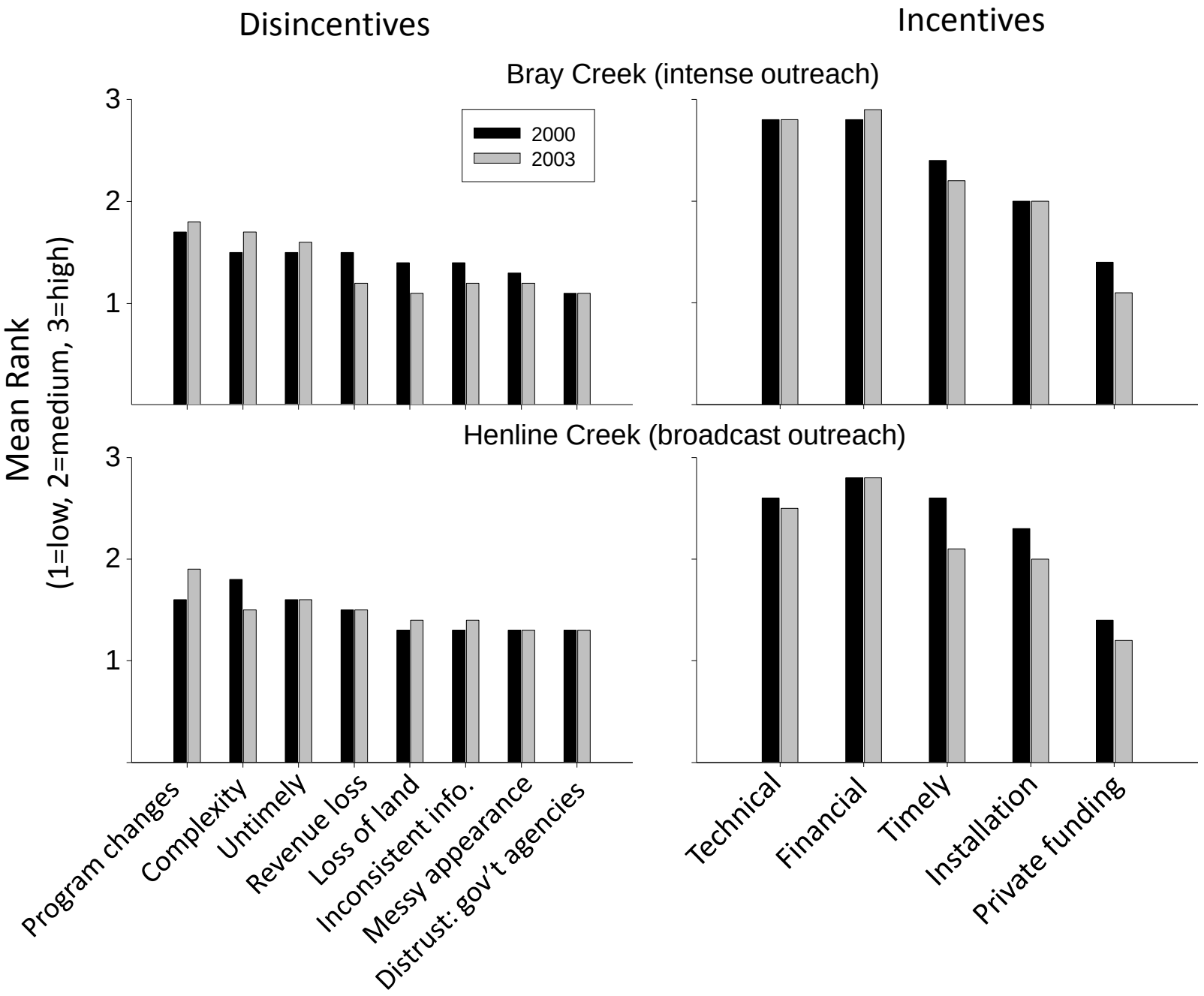
Survey results: Familiarity and participation in programs

	Bray Creek (high intensity)			Henline Creek (broadcast)		
	2000 (%)	2003 (%)	Difference (%)	2000 (%)	2003 (%)	Difference (%)
Familiarity						
CREP	25	92	+67***	47	95	+48**
WRP	58	100	+42*	79	100	+21*
SSRP	58	83	+25	89	100	+11
CPP	100	100	0	100	100	0
CRP	100	100	0	100	100	0
Participation						
CREP	8	0	-8	11	5	-6
WRP	8	17	+9	0	5	+5
SSRP	0	8	+8	21	11	-10
CPP	33	75	+42*	32	58	+26
CRP	8	8	0	32	11	-21

* $p < 0.05$; ** $p<0.01$; *** $p< 0.001$

CREP: Conservation Reserve Enhancement Program
WRP: Wetlands Reserve Program
SSRP: Streambank Stabilization and Restoration Program
C2000: IL Dept. Natural Resources Conservation 2000 Ecosystem Program
CPP: Conservation Practices Program
CRP: Conservation Reserve Program

Survey results



Summary of survey results

(1) Broadcast outreach methods did increase awareness of several cost-share programs

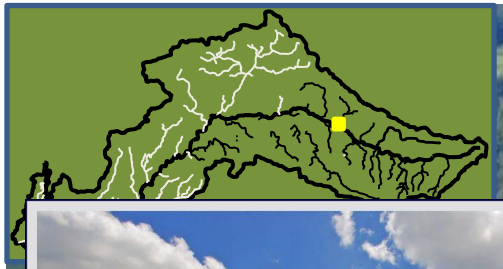
(2) Only those farmers that received intensive outreach significantly increased participation in these programs

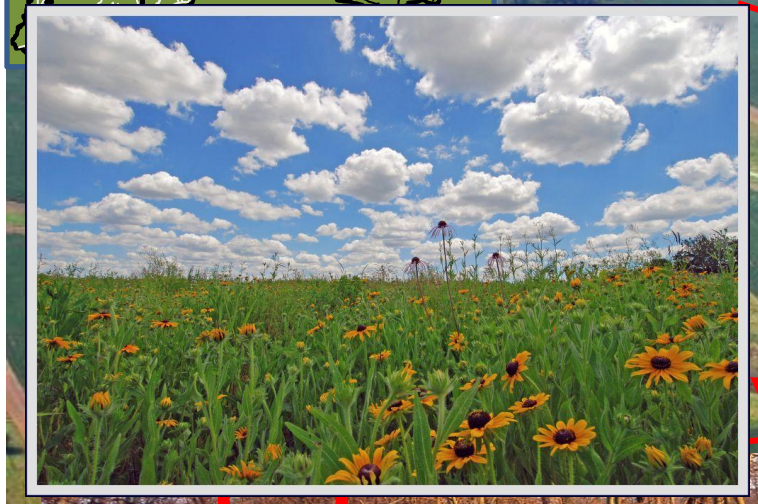
(3) Disincentives included complexity of application processes, too many program changes, and untimely application periods

(4) Incentives included financial and technical assistance provided in a timely manner

(5) Need to increase outreach efforts focused on practices that reduce transport of excess nutrients from agricultural drainage tiles

(6) Surveys suggested that the best way to introduce new practices to farmers was to first implement them as demonstration sites





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nutrients & flow | nutrients & flow | nutrients & flow | nutrients & flow

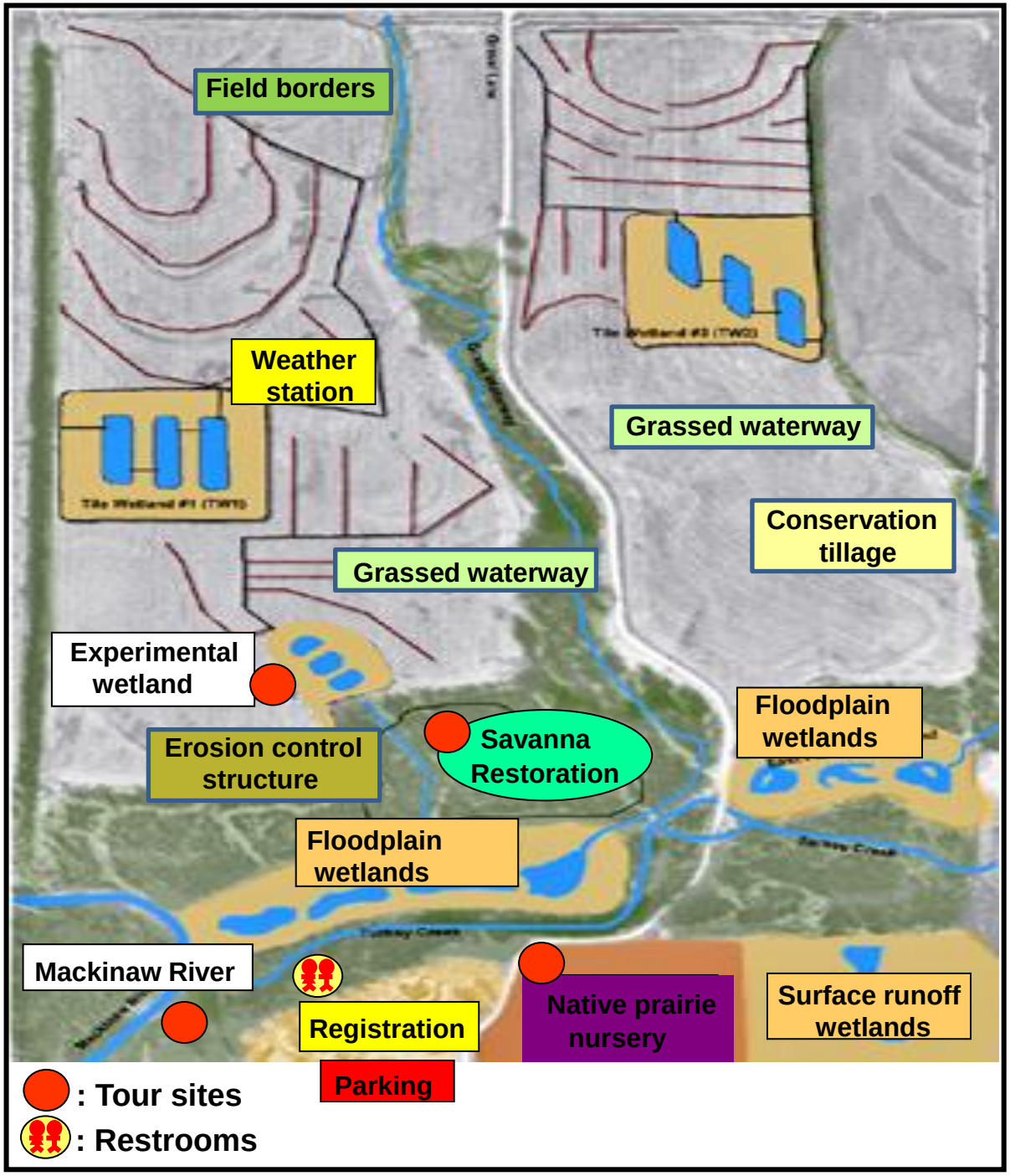
Cell 1 | Cell 2 | Cell 3

Til

Inl

What size of wetland is most effective at reducing nutrients in tile runoff?

Demonstrate many conservation practices on a working farm



Schedule of Events

8:30 Registration opens
9:00, 9:30, 9:45 – Morning tours
11:00-12:00 – Lunch & speakers
12:00, 12:30, 12:45 – Afternoon tours

Contacts: Kent Bohnhoff, NRCS
Maria Lemke, TNC

How do winter cover crops influence nutrient export from tile-drained farmland?

NRCS Conservation Innovation Grant 2011-2013

Use watershed conservation address nutrient concerns in local drinking water supply

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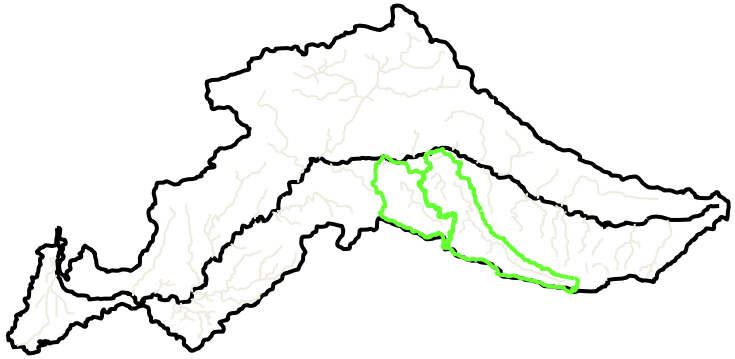
McLean County Soil & Water Conservation District

NRCS
Natural Resources Conservation Service

Outreach coordinator



<u>Strategies</u>:

(1) Increase practice effectiveness: watershed mapping, monitoring, strategic placement of practices

(2) Utilize an integrated and diverse "team" of partners: municipal government, state/federal and local agencies, universities, agricultural & conservation organizations

(3) Increase implementation : broadcast + precision outreach

- Additional outreach resources and assistance
- Simplify enrollment process
- Provide assistance in timely manner

USDA-NRCS Conservation Innovation Grant : 2012-2015

CHECKLIST FOR CP-39 WETLAND

	Location:		County:	

Task	Method for Completion	Completed: Y/N
Sign CRP-2 worksheet	Landowner must go to local FSA office to coordinate signing of CRP-2.	☐ Completed
Wetland Design	Engineer is notified that landowner is interested in a wetland and proceeds with developing a wetland design.	☐ Completed
Conservation Plan of Operation (CPO)	NRCS will develop a Conservation Plan of Operation and Detailed Map explaining wetland pool/buffer location and costs for wetland construction. [Note: If canceling part of an existing CRP contract (CP21 grass filter strip), NRCS also makes any necessary amendments to CPO and revises map of remaining CP21 grass filter strip acres.]	☐ Completed
Review of CPO, Detailed Map, and Design	Landowner will be asked by local NRCS/SWCD personnel to review CPO, Detailed Map, and Wetland Design.	☐ Completed
Sign CRP-1 Contract	Landowner must go to local FSA office to coordinate signing of CRP-1 contract.	☐ Completed
Signing Incentive Payment (SIP)	Once FSA County Committee (COC) approves CRP-1, CPO and supporting documents, FSA can issue the SIP payment (currently $100/acre).	☐ Completed
Implementation of CP-39 contract agreement	Landowner implements CP-39 contract agreement including all seeding. Seeding dates for late summer are August 1 – September 10 and spring period is Early Spring – May 15.	☐ Completed

Mackinaw River Drinking Watersheds Project: Questions and Answers

Q: Why should I consider enrolling land in CRP's Farmable Wetland Program to construct a wetland to treat tile drainage water (CP39)?

A: While tile drainage is necessary for row crop production in much of McLean County, the water passing through the drainage system can have high nitrogen concentrations. If left untreated, this water flows into waterways, like Money Creek and Six Mile Creek, eventually flowing into our drinking water reservoirs, Lake Bloomington and Evergreen Lake. As tile drainage water flows through a constructed wetland, microbes consume roughly half of the nitrogen in the water, making the water much cleaner. The wetlands also provide additional beauty to the farm and attract wildlife, such as ???

Q: If I enroll land in CRP CP39 to construct a wetland to treat tile drainage water, can I remove the wetland after the expiration of the CRP contract if I choose to?

A: Yes, you can remove the wetland after the expiration of the CRP contract within 5 years pursuant to nationwide permit 27 and return the land to its prior condition. For more information, contact the Rock Island District at 309-794-5057.

Q: Would there be a Swampbuster (conservation compliance) issue if I choose to revert the wetland to the land's prior condition as farmland after expiration of the CRP contract?

A: No, enrolling land in CRP, even for a wetland practice, does *not* cause a change in status for Swampbuster purposes. The farmland is not considered "abandoned" and thus does not revert to wetland status for conservation compliance/Swampbuster purposes.

Q: Is there much flexibility regarding where a CRP CP39 constructed wetland can go on my farm?

A: Yes. Landowners work with McLean County SWCD and McLean County NRCS to identify suitable locations for constructed wetlands (e.g., proximity to drain tile, appropriate soils, etc). Land eligibility

Sponsors

Upcoming Events

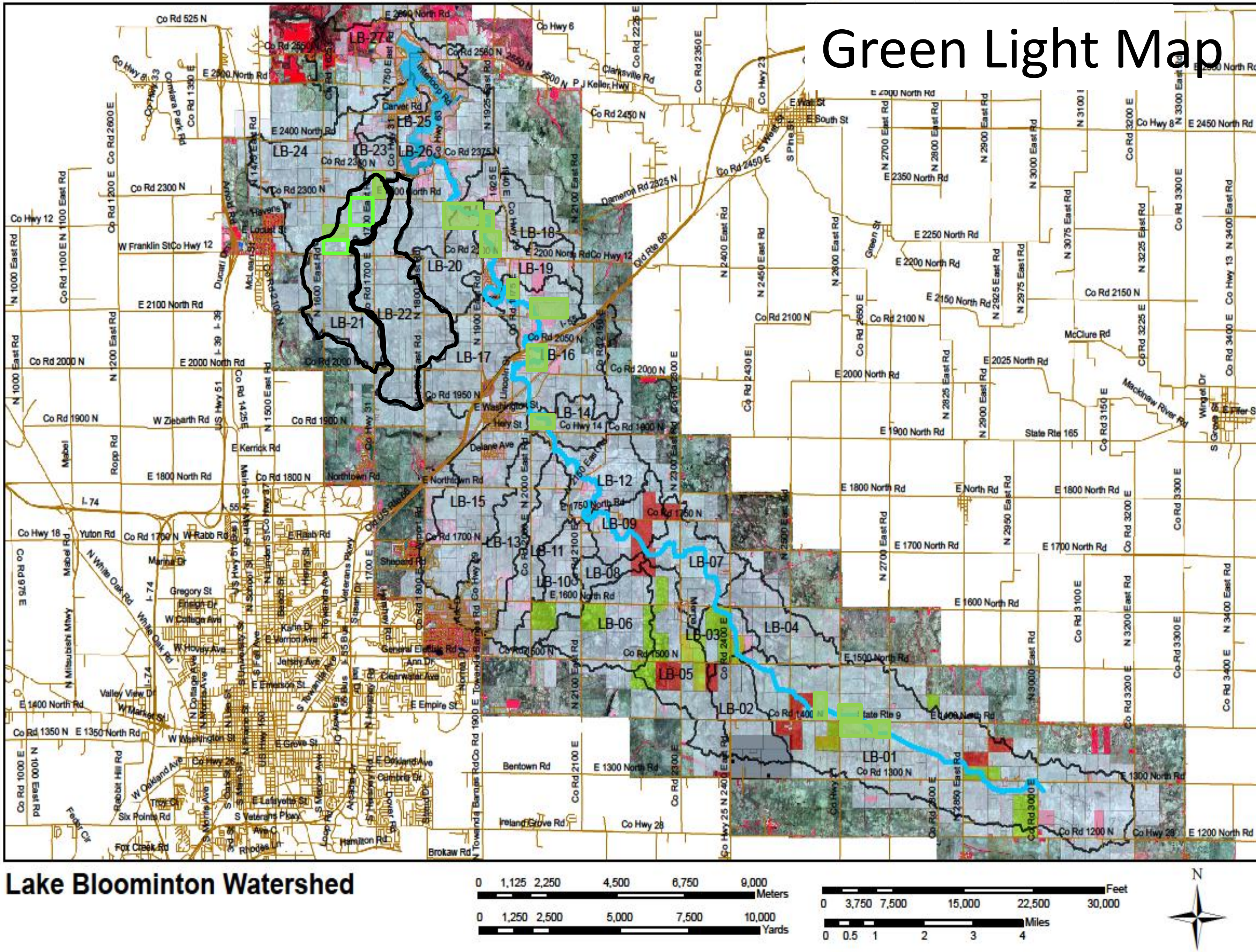
August 14th 6:30 pm - Pond Shocking Demo
August 20th- The Jim Rutherford Scholarship Golf Outing
September 2nd-Office Closed

Plat Books

Plat Books available to purchase for $35.00. Make checks payable to McLean County Extension.

Weather

Green Light Map



Lake Bloominton Watershed

Lessons Learned:

(1) Integrated outreach teams comprised of stakeholders and local conservation agencies
    - Familiarity with producers
    - Relieve some of the demands on limited conservation agency staff time

(2) Workshops and demonstrations are important to introduce new farming and conservation programs, but one-on-one outreach is key

(3) Developing relationship with producers is extremely important
    - This takes time
    - Important to be transparent
    - Follow through (do what you say you are going to do)

Strategies:

- Support a landowner-based outreach program

- Create a forum for interchange of ideas between producers, conservation organizations, agricultural agencies

Partners and Funding Sources

Photo credits:

Tim Lindenbaum, Farmer

Natural Resources and Conservation Service
Soil and Water Conservation District
Farm Services Agency

University of Illinois at Champaign-Urbana
Illinois State University

Environmental Defense Fund
City of Bloomington, Illinois
Private landowners and producers

Monsanto
DuPont -Pioneer
Lumpkin Family Foundation
Walton Family Foundation
World Wildlife Foundation/Coca Cola
Kellogg Foundation
Ducks Unlimited
Grand Victoria Foundation
USDA-NRCS Conservation Innovation Grant Program
U.S. Farm Services Agency

Krista Kirkham, TNC
Assistant Aquatic Ecologist