

# Nippersink Watershed Wetland & Floodplain Restoration

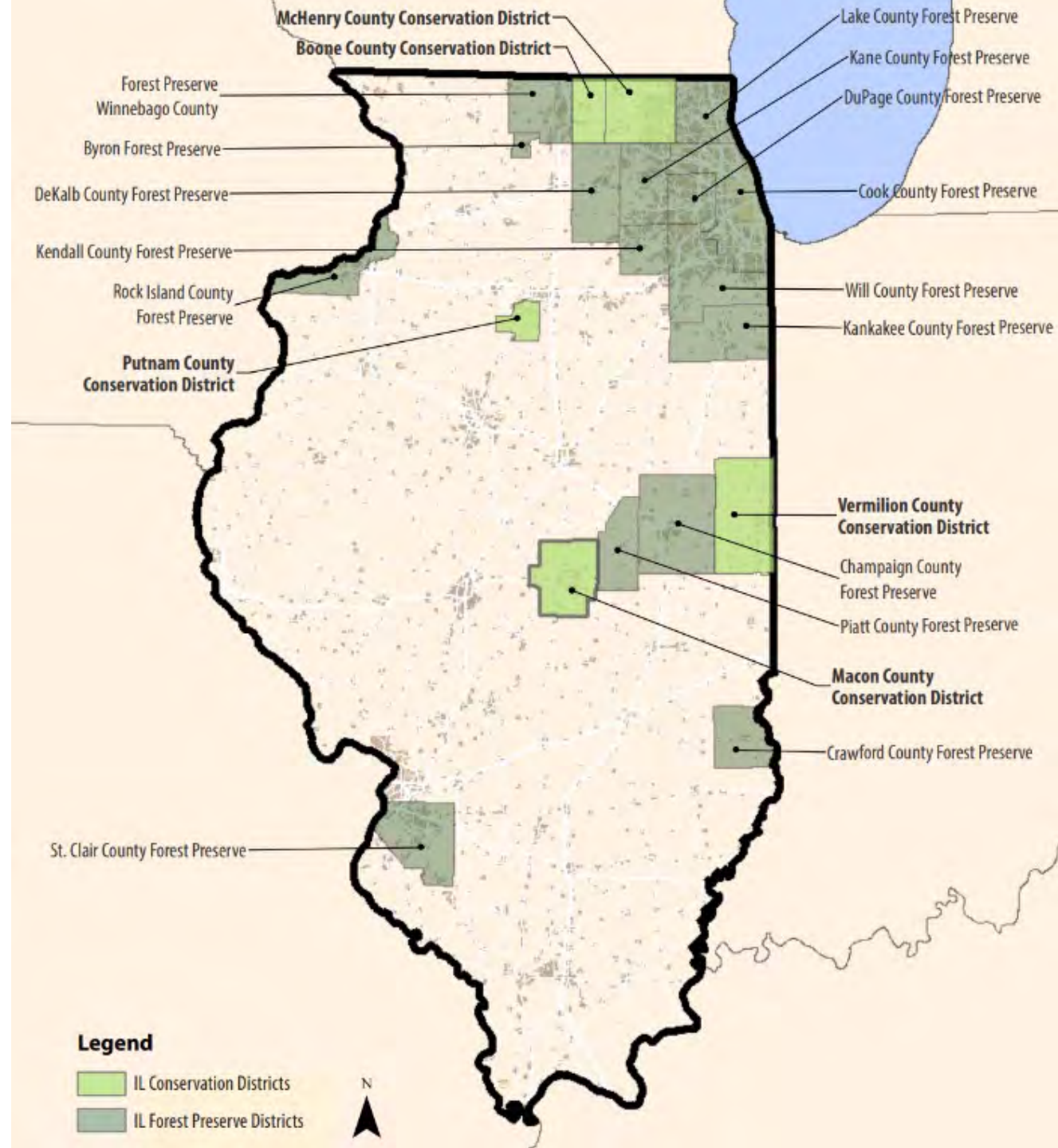
Ho-Chunk  
Kickapoo  
Lakota-Dakota  
Mascouten  
Miami  
Peoria  
Potawatomi  
Sauk  
Meskwaki



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People of the Place of the Fire Nishnabe -Potawatomi  
“Nippersink” – a place of small waters

# Natural Resources Special Districts

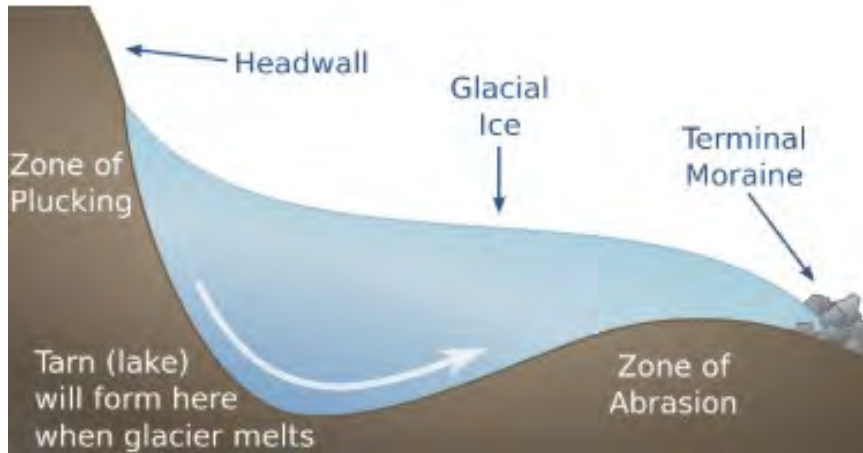






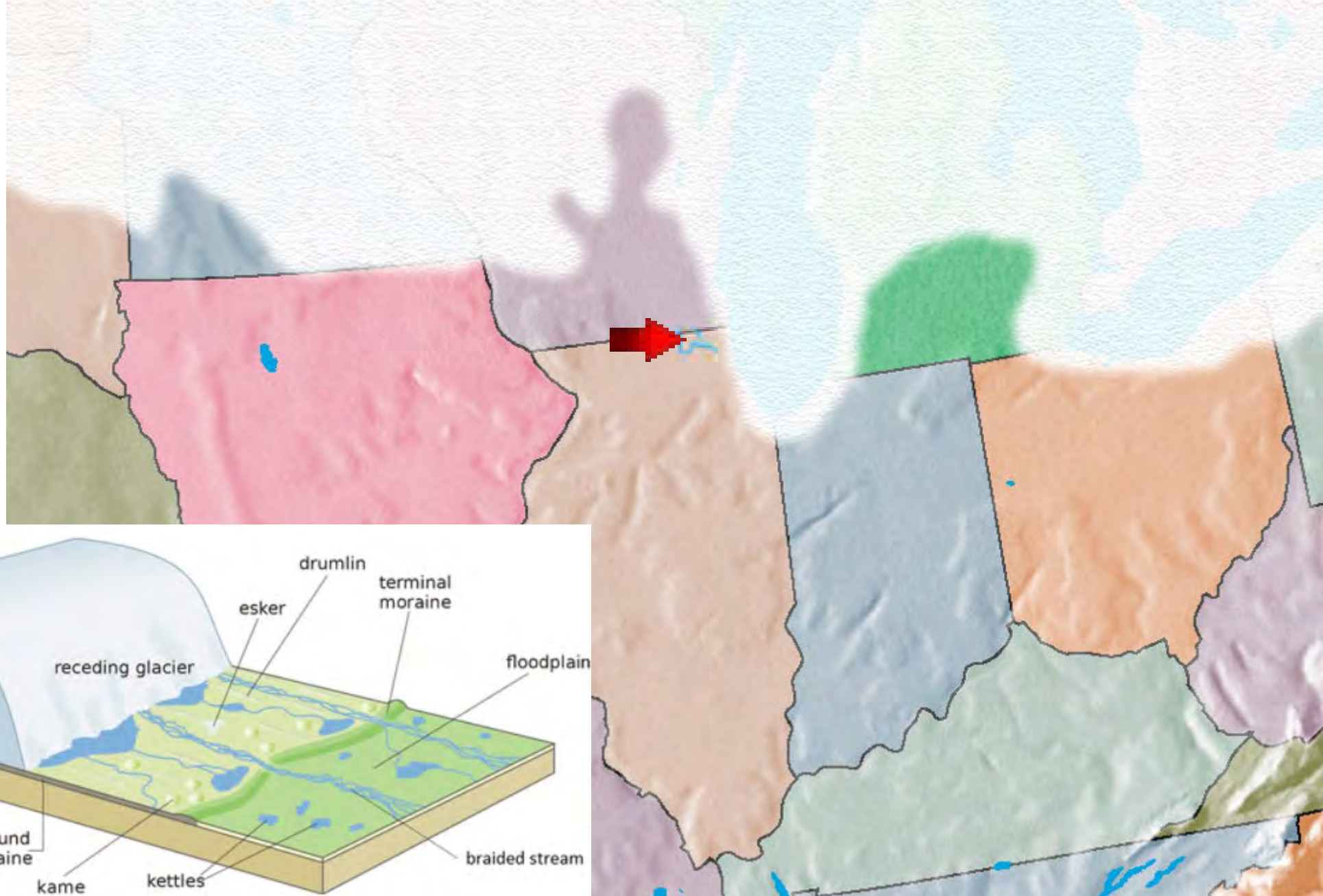
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# Buried under ICE



18,000 Years Ago



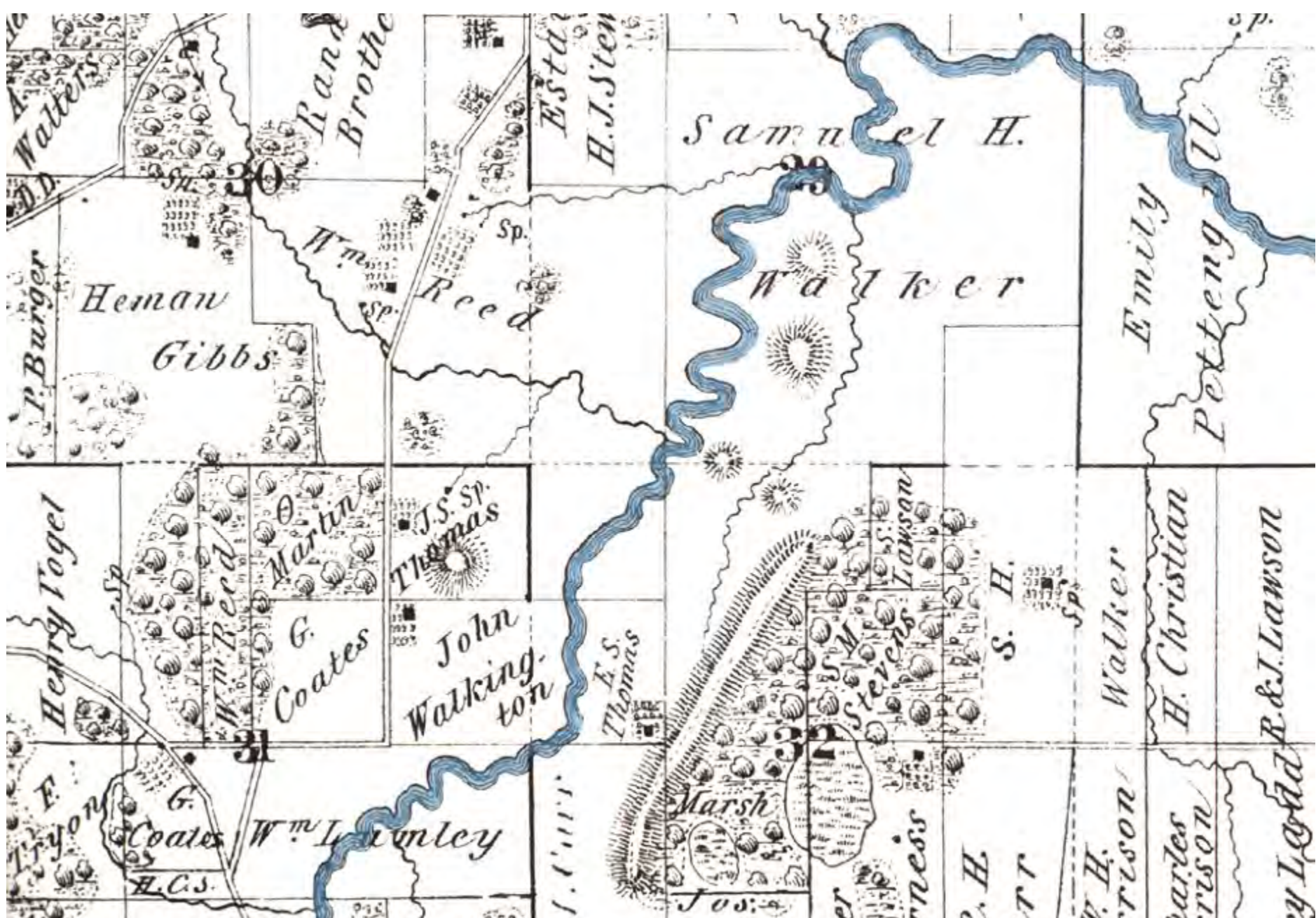


14,000 Years Ago







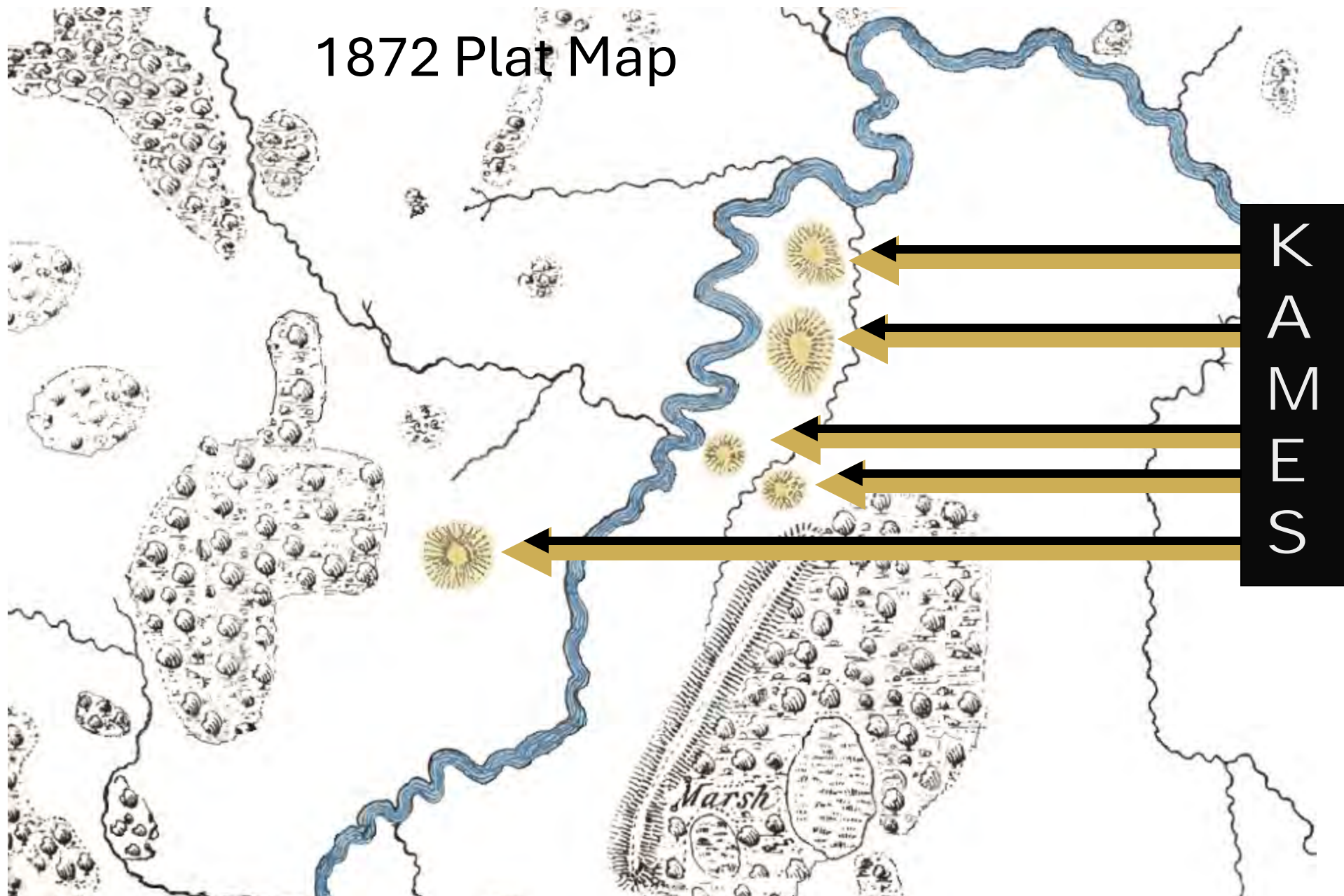


1872 Plat Map





## 1872 Plat Map



Kame Soil used to fill Stream-bed



## Drainage Begins:

- Ditches Excavated
- Water Tables Lowered
- Waters Straightened
- Flows Expedited



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Small waters  
become subterranean



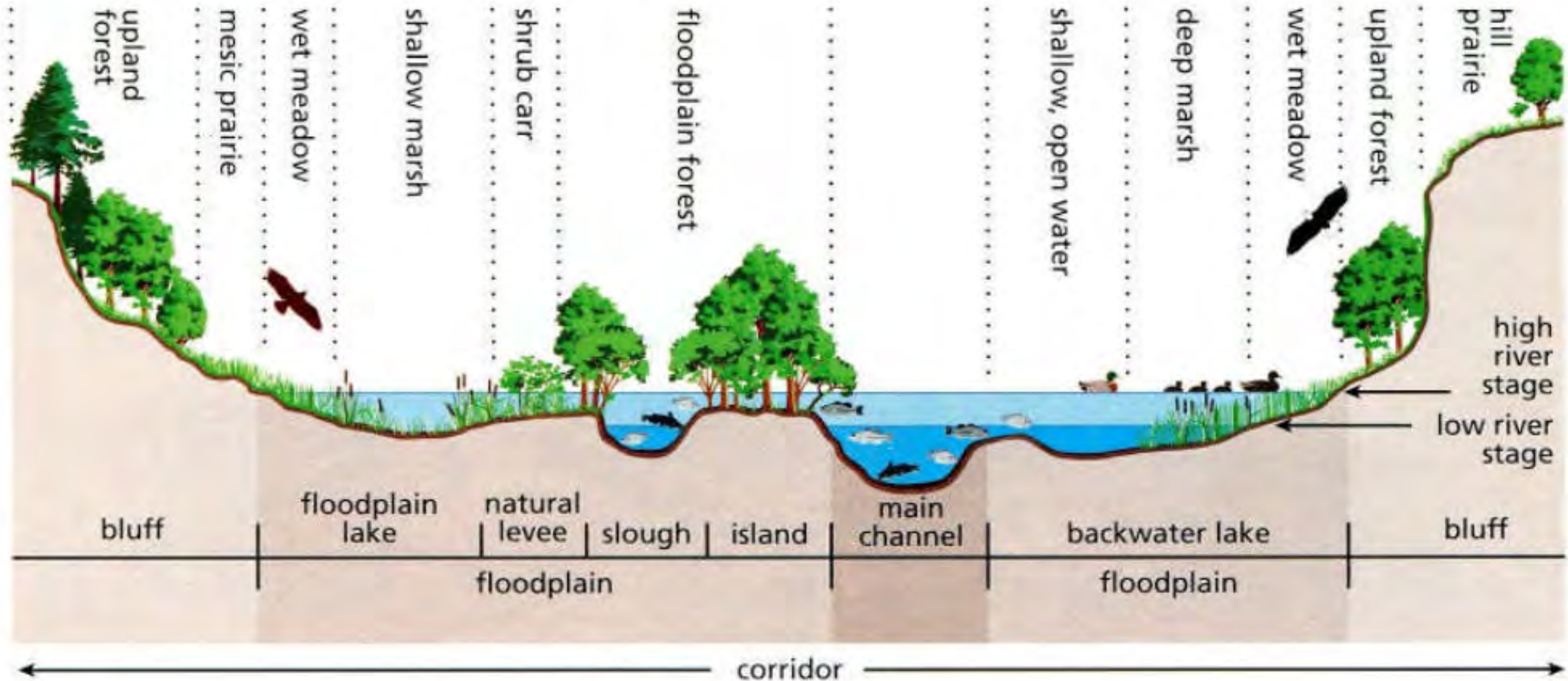
The Wetlands Initiative  
estimates 1935 IL tile 6x globe





# Riverine Cross Section

Milhous, et. al.







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1954: Well Drained & Mined Kames



# Agriculture Products Grown



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# Agriculture Products Grown



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### Externalities:

- Water Quantity
- Flood Storage
- Water Supply
- Water Quality
- Biodiversity & Habitat







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1939: Still In Natural Form





1987: Ditched & Channelized





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Before





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After





PHASE 1

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PHASE 2

PHASE 3

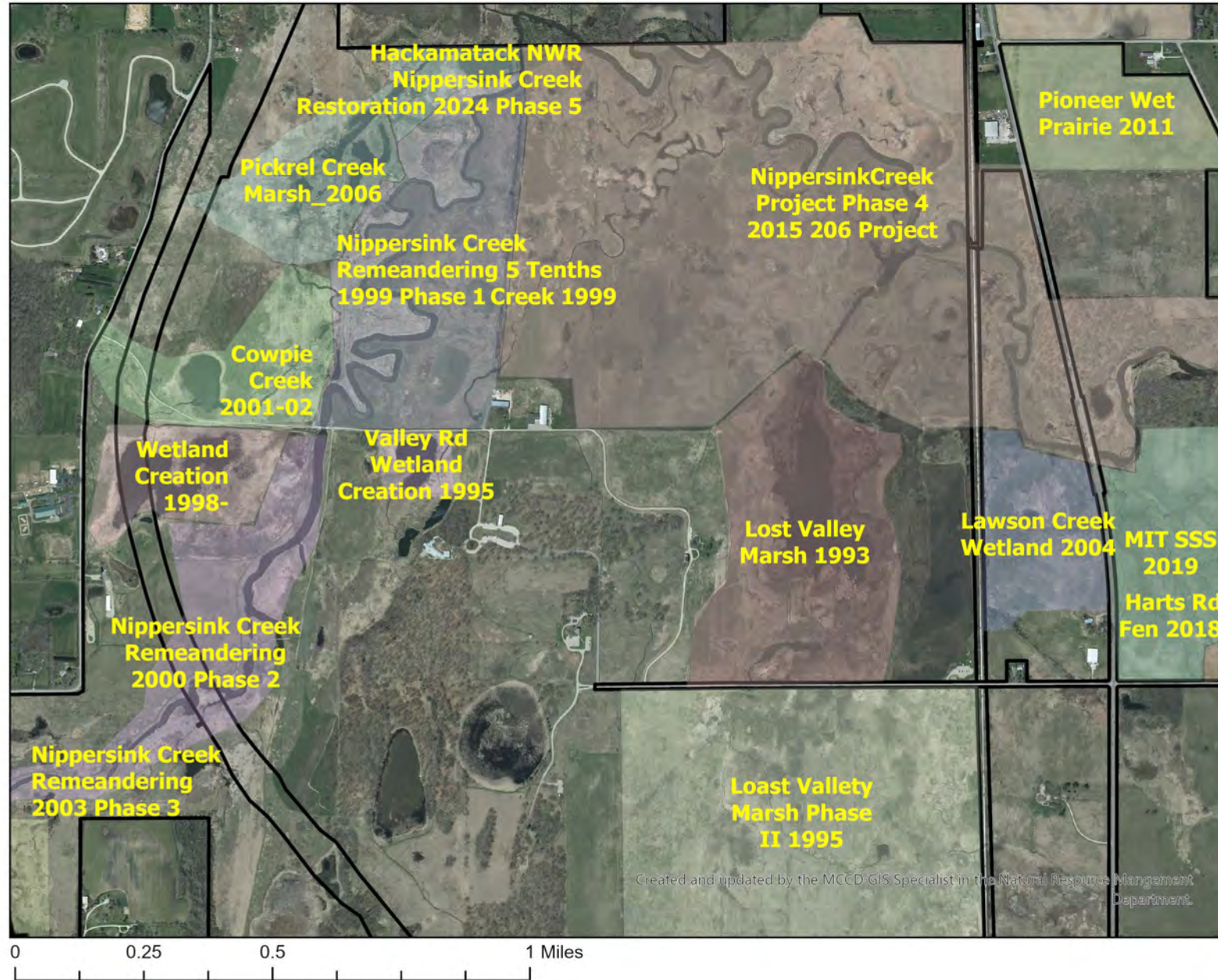
After





# Ecological Reference Projects Current Conditions

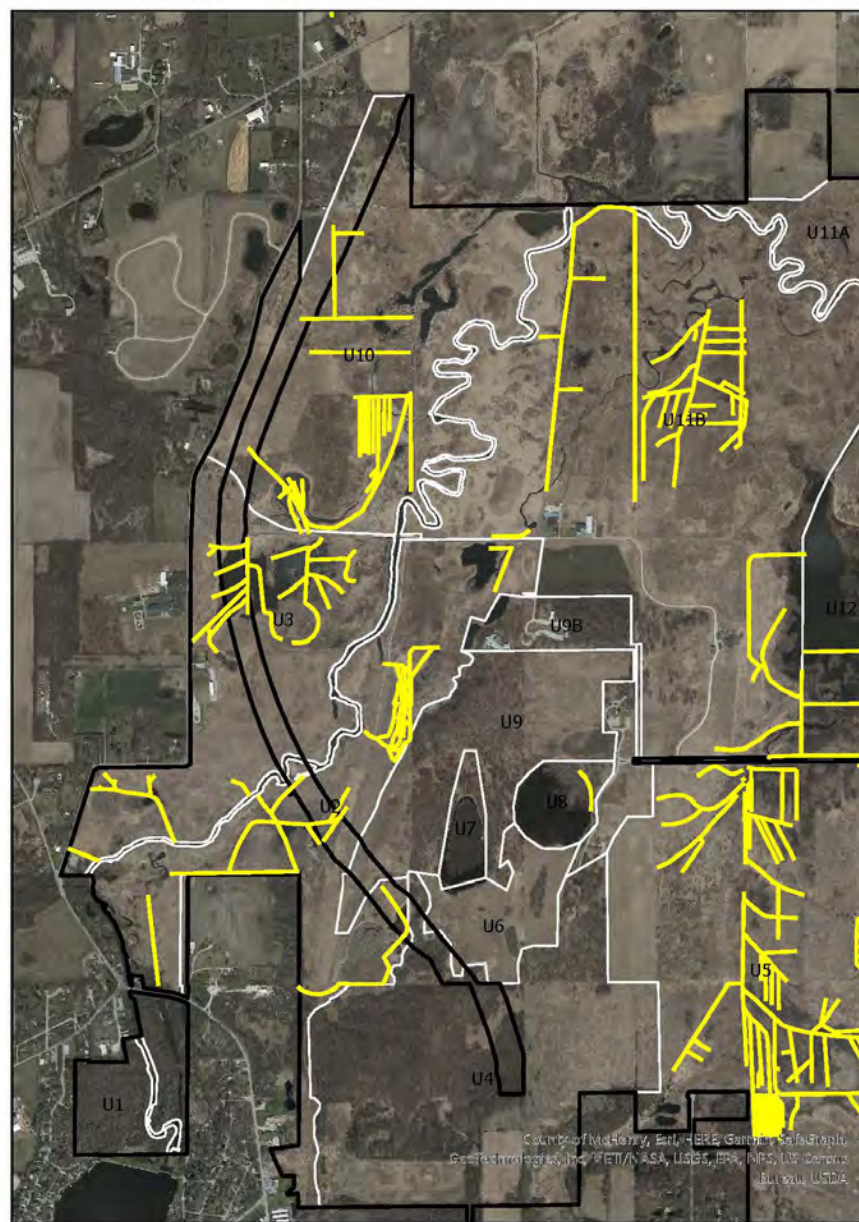
LRC -2022-00616



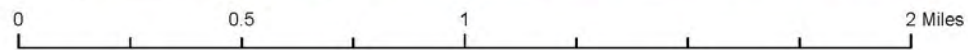




Glacial Park  
Nippersink Project Tile removal



~2,000 Acres  
~2 Billion Gallons







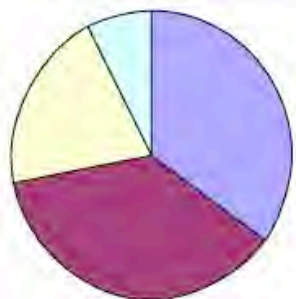




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## CONSERVATION DISTRICT

### Planning Budget

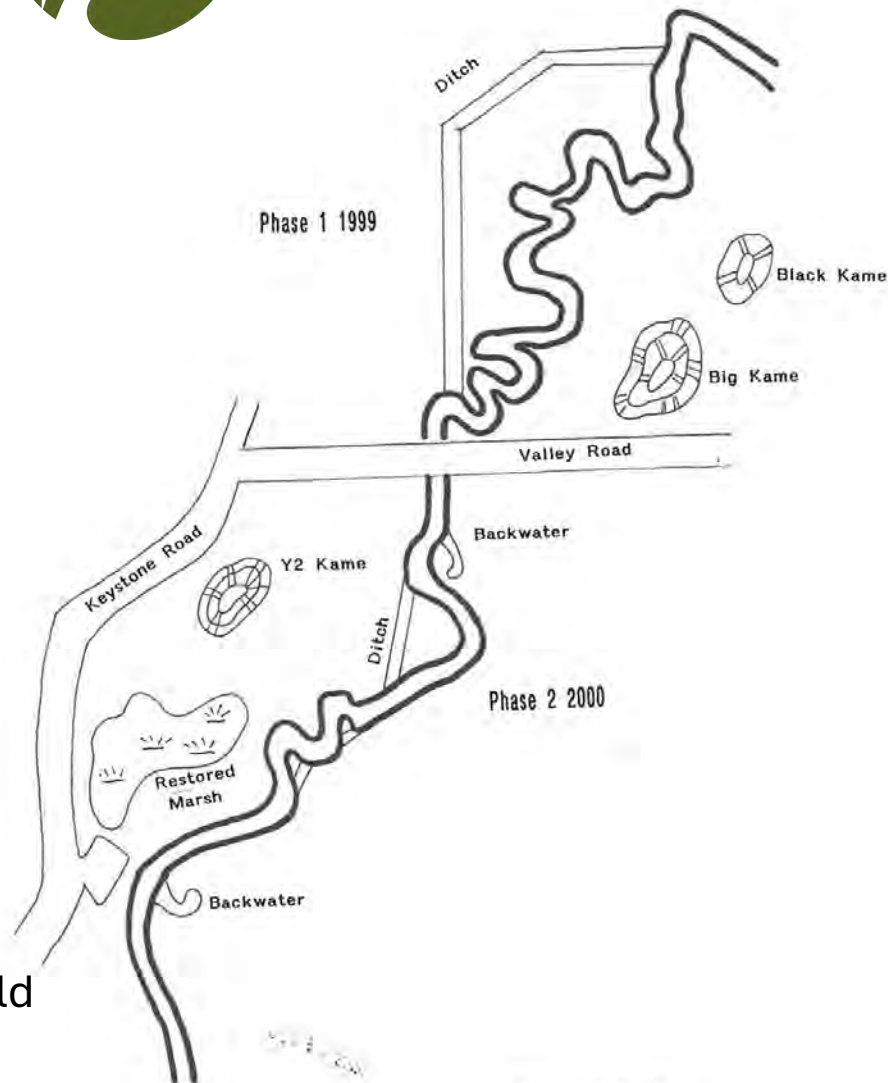


- Engineering
- Personnel
- Topographic Survey
- Soil Borings

Engineering	\$ 19,000
Personnel	\$ 20,000
Topographic Survey	\$ 11,300
Soil Borings	\$ 4,000
<b>Total</b>	<b>\$ 54,300</b>

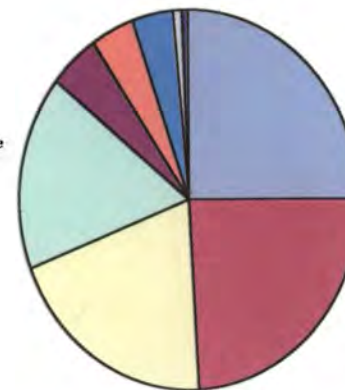
Engineering was provided free of charge from the U.S. Army Corps of Engineers.  
Personnel represents MCCD labor for all aspects of planning.

10,200 feet meander  
5,200 feet grading  
1,100-ton rock placed  
165k cu yd soil moved-kame rebuild  
1,200 tile removed  
225,000 plugs  
22 miles e-mat



Nippersink Creek  
Dechannelization Project

### Implementation Budget



- Equipment
- Personnel
- Seeds & Plants
- Erosion Matting
- Contractual Worker
- Fuel
- Rock
- Miscellaneous
- Repair

Equipment	\$183,633
Personnel	\$177,505
Seeds & Plants	\$146,374
Erosion Matting	\$122,191
Contractual Worker	\$34,576
Fuel	\$30,698
Rock	\$26,879
Miscellaneous	\$5,825
Repair	\$5,000
<b>Total</b>	<b>\$732,681</b>





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## Nippersink Creek Aquatic Ecosystem Restoration Project:

### Bank Grading 2:1 & 7 Riffle Installations

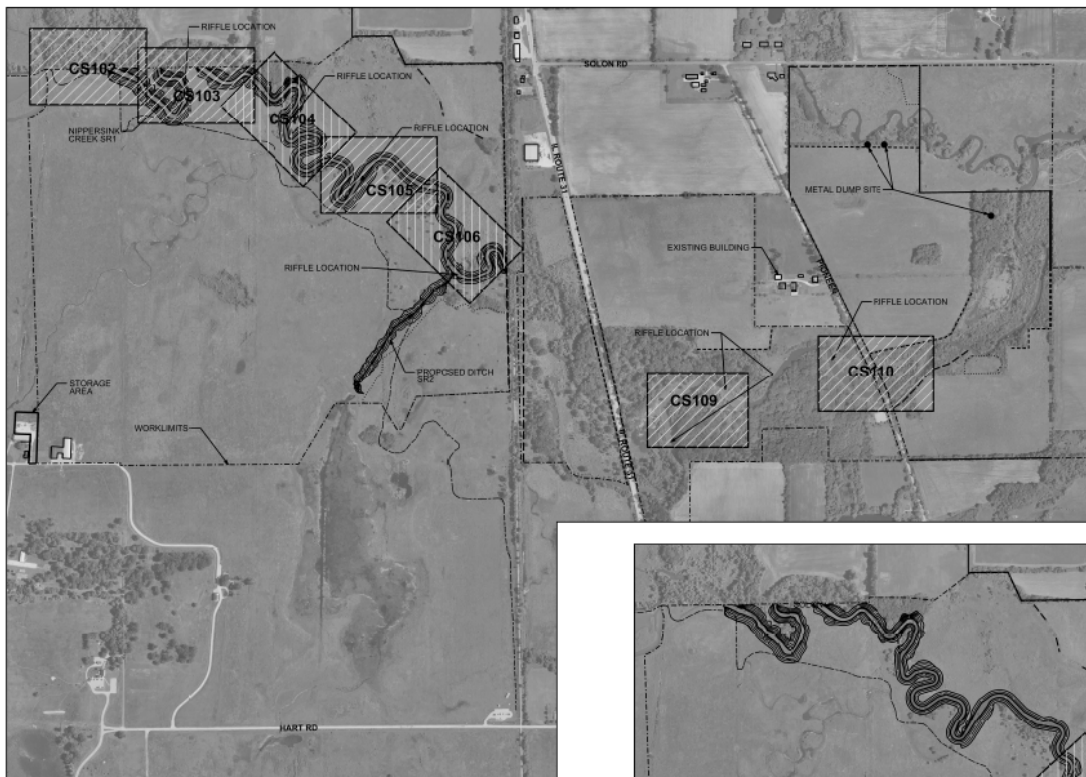
-floodplain connection (2-4')

### Ecological enhancement 550 acres:

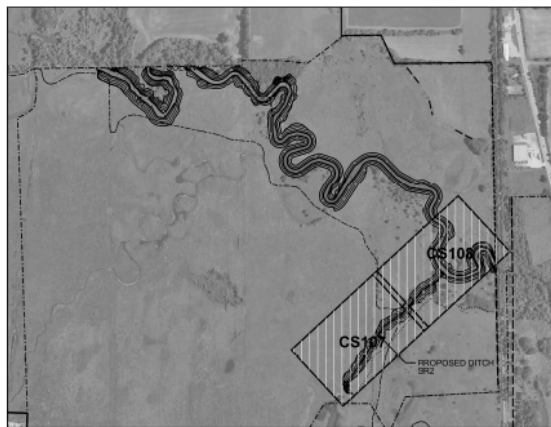
-275 acres sedge meadow

-98 acres wet prairie

-100 acres wet mesic savanna



SITE LAYOUT AND RIFFLE LOCATIONS ALONG NIPPERSINK CREEK



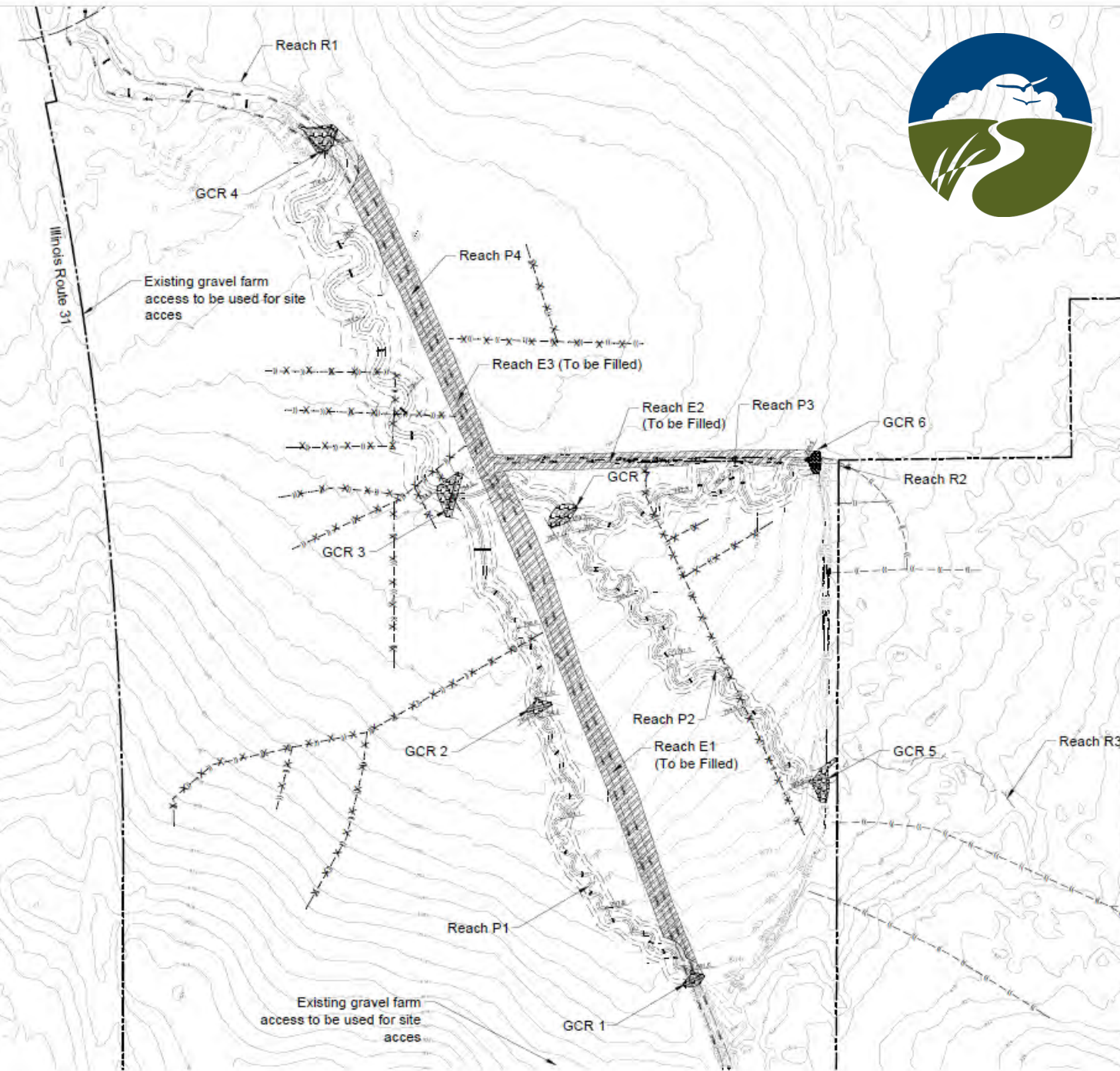
WALL AND DITCH LAYOUT

500' 250' 0 250'  
SCALE: 1" = 500'-0"

U.S. Army Corps of Engineers Chicago District	
PROJECT NO.	102
SECTION NO.	102
SHEET NO.	102
SHEET KEY MAP	
SHEET IDENTIFICATION	V-102

NIPPERSINK CREEK 206 PROJECT COSTS	
	Amount (\$)
Feasibility	138,000
P&S Plans & Specifications	100,000
Construction	4,665,570
LERRD Lands, Easements, ROW, Relocations, Disposals	2,600,000
Monitoring	25,000
<b>TOTAL</b>	<b>7,528,570</b>
NOTE: First \$100,000 is 100% federally funded	
Total Shared project	7,428,570
Fed Share (65%)	4,828,571
Non Fed share (35%)	2,600,000
Total Fed	4,928,571
Total Non Fed	2,600,000









Project: Restore 5,035 Linear Feet Stream & 30 acres of wetland (20) and prairie (10)

[illegible]





\$10,000 Engineering-Permit Denied  
Ecosystem Engineering:  
-Political Capital  
-"Nuisance Wildlife" response



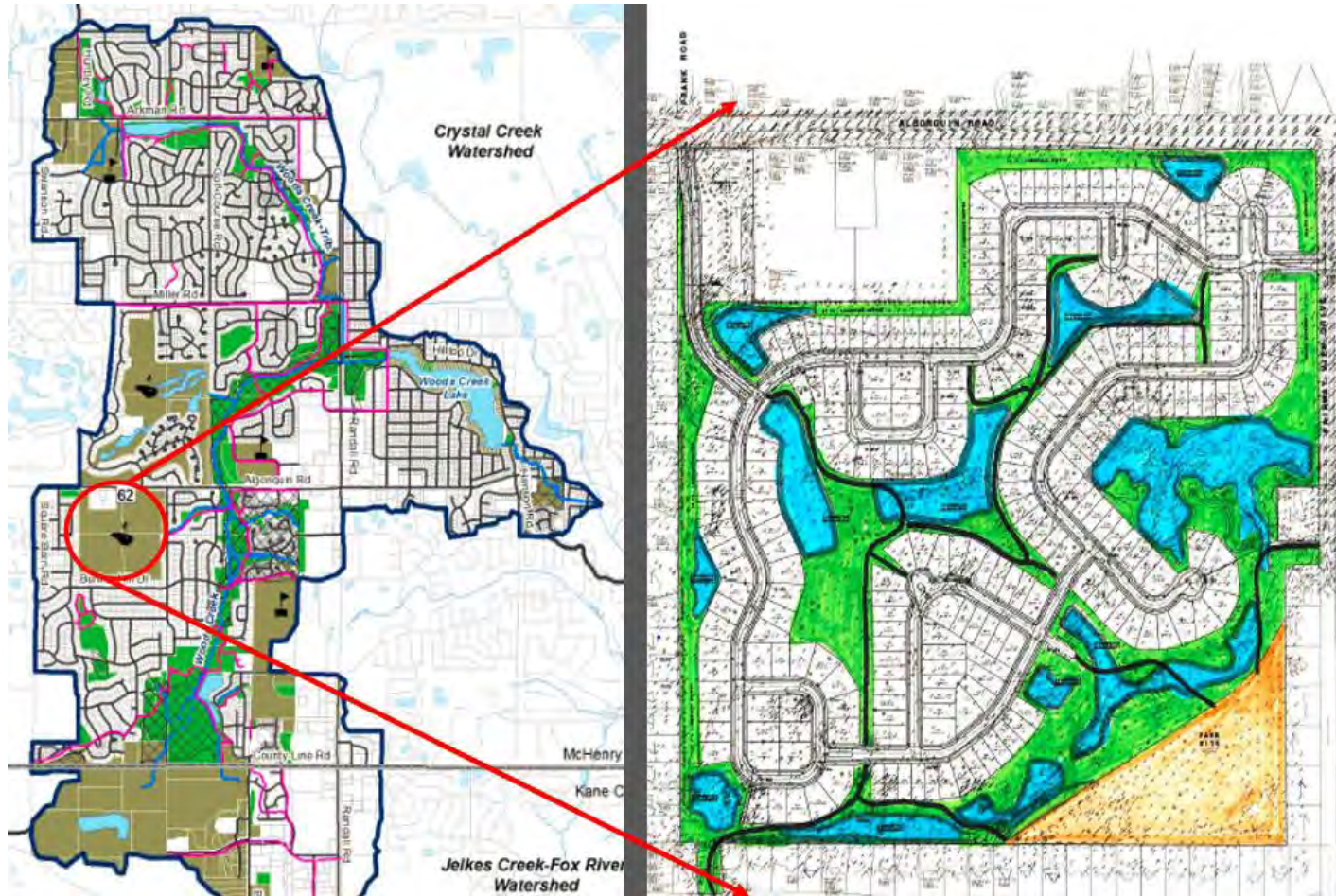
# Implementation

ID#	LOCATION	UNITS (SIZE/LENGTH)	OWNER (PUBLIC OR PRIVATE)	EXISTING CONDITION	MANAGEMENT MEASURE RECOMMENDATION	POLLUTANT REDUCTION EFFICIENCY	PRIORITY	RESPONSIBLE ENTITY	SOURCES OF TECHNICAL ASSISTANCE	COST ESTIMATE
WCR3: Woods Creek Reach 3	South of pedestrian bridge	1,873 linear feet	Algonquin: Spella Park	1,873 lf of stream on public land	Design, permit, and implement project streambanks using	Bank Stabilization: 50% TN=40% TP=45%	High	Algonquin	Ecological Consultant/ Contractor	\$50,000 design/permit; \$250,000 to implement
				Completed 2009	with artificial riffles, and buffer by planting native vegetation.	yr TN=252 lbs/yr TP=126 lbs/yr			USACE; IDNR; NRCS	
WCR4: Woods Creek Reach 4	Between Spella Park pedestrian bridge & Woods Creek Ln.	1,077 linear feet	Algonquin (Public)	1,077 lf of stream that was for adjacent stream reach	Construct up to three artificial stream channel	Not applicable	Medium	Algonquin	Ecological Consultant/ Contractor	\$10,000 to design and install 3 artificial riffles
WCR5: Woods Creek Reach 5	Between Woods Creek Ln. and	1,630 linear feet	Algonquin (Public)	1,630 lf of stream that is highly channelized	Construct breaks in berms to allow for natural flow on floodplain.	Not applicable	Medium	Algonquin	Ecological Consultant/ Contractor	\$30,000 to design and install 3 berms
WCR7: Woods Creek Reach 7	N. of Bunker Hill Dr. & W. of	1,037 linear feet	Algonquin (Public)	1,037 lf of stream	Design and implement project to stabilize stream with adjacent spoil pile	Bank Stabilization: 50% TN=40% TP=45%	Low	Algonquin	Ecological Consultant/ Contractor	\$30,000 to design, permit, and implement
				Completed 2024		yr TN=286 lbs/yr TP=143 lbs/yr			USACE	
WCR8: Woods Creek Reach 8	South of Algonquin Rd.	2,384 linear feet	Algonquin (Public)	2,384 lf of stream in good overall condition	Conduct inspections of the beaver dam to ensure that beaver are not blocking stream	Not applicable	Medium	Algonquin	Ecological Consultant/ Contractor	No cost if done in-house by Algonquin
				Designed and Permitted	with high quality native grass meadow communities.				IDNR; USACE	
WCR14: Woods Creek Reach 14	South of Algonquin Road	1,133 linear feet	Private owner	1,133 linear feet of naturally meandering stream with streambank trees and shrubs throughout stream reach in the watershed.	Remove invasive trees and shrubs from stream and immediate buffer with native vegetation.	Filter Strip: TSS= 73% TN= 40% TP= 45%	Medium	Owner or Future Owner	Ecological Consultant/ Contractor	\$15,000 to remove invasive trees and shrubs; \$10,000 to establish native vegetation
				Future Project						
WCR15: Woods Creek Reach 15	W. of Dennis Ave. to Crystal Creek	1,177 linear feet	Private owners	1,177 lf of highly channelized and moderate stream area. Invasive trees on the bank	Remove invasive trees and shrubs from stream and immediate buffer with native vegetation.	Filter Strip: TSS= 73% TN= 40% TP= 45%	Low	Owners	Ecological Consultant/ Contractor	\$15,000 to remove invasive trees and shrubs; \$10,000 to establish native vegetation
				Future Project						





# Working with Developers





# Big Dreams: Hope for Small Waters





