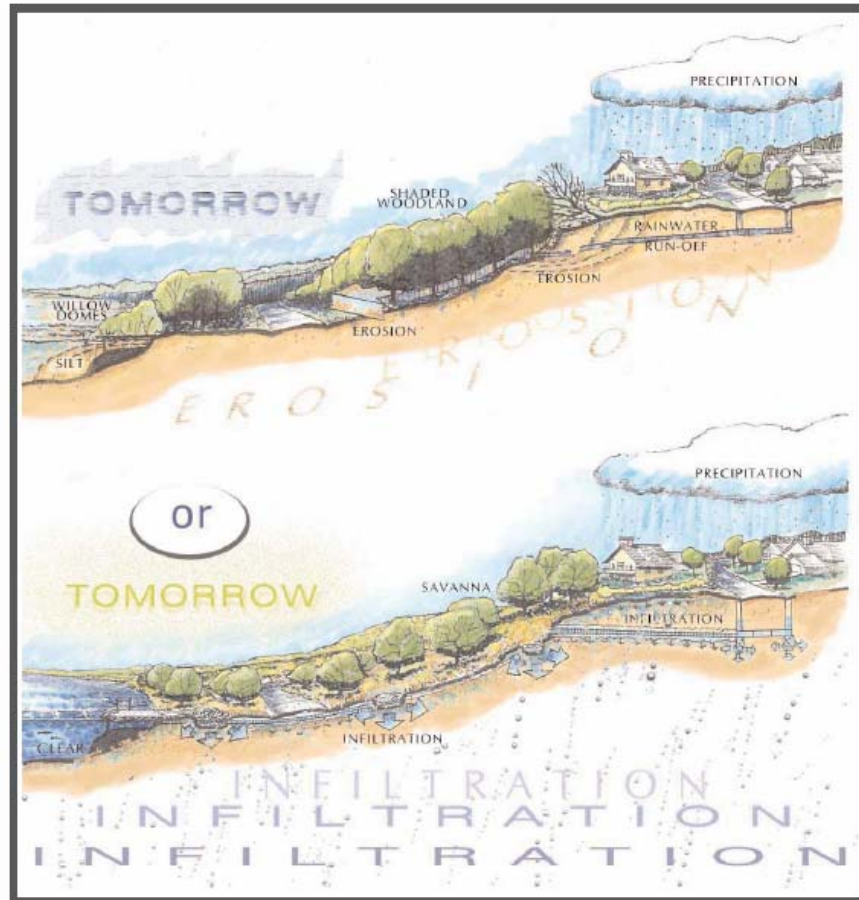


Mossville Bluffs Watershed Restoration Master Plan

October, 2002



Prepared for: Tri-County Regional Planning Commission, City of Peoria, and Peoria County
Prepared by: Conservation Design Forum, Inc. and Clark Engineering, Inc.

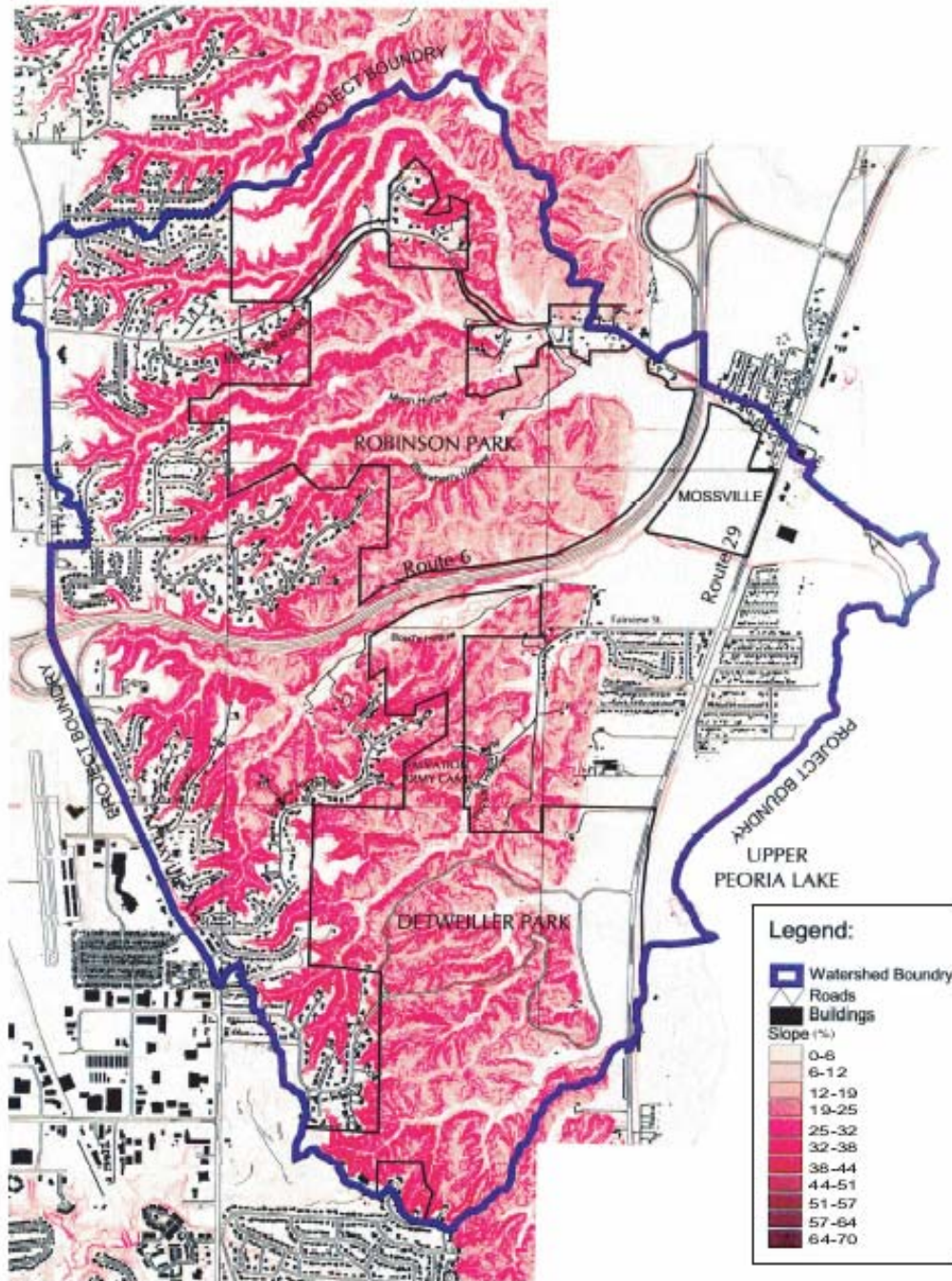
Peoria County

City of Peoria

Tri-County
Regional Planning
Commission

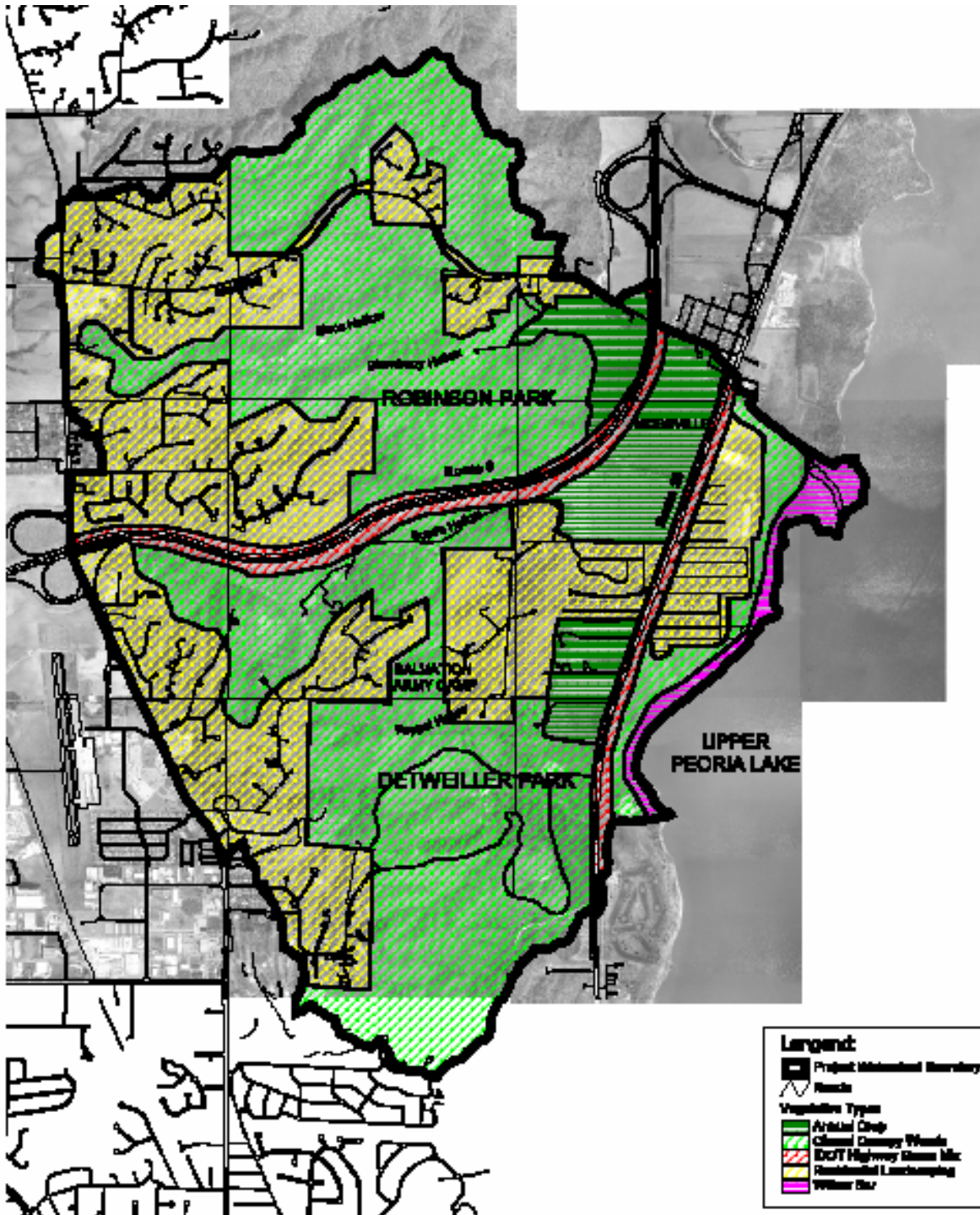
Watershed Plan Goals

- Uncover the primary factors that cause the Mossville Bluffs Watershed to contribute sediment to Peoria Lake
- Identify actions that may reduce sedimentation
- Propose tools for preventing sedimentation in future development projects



Causes of Sedimentation in Peoria Lake

Management of Natural Areas



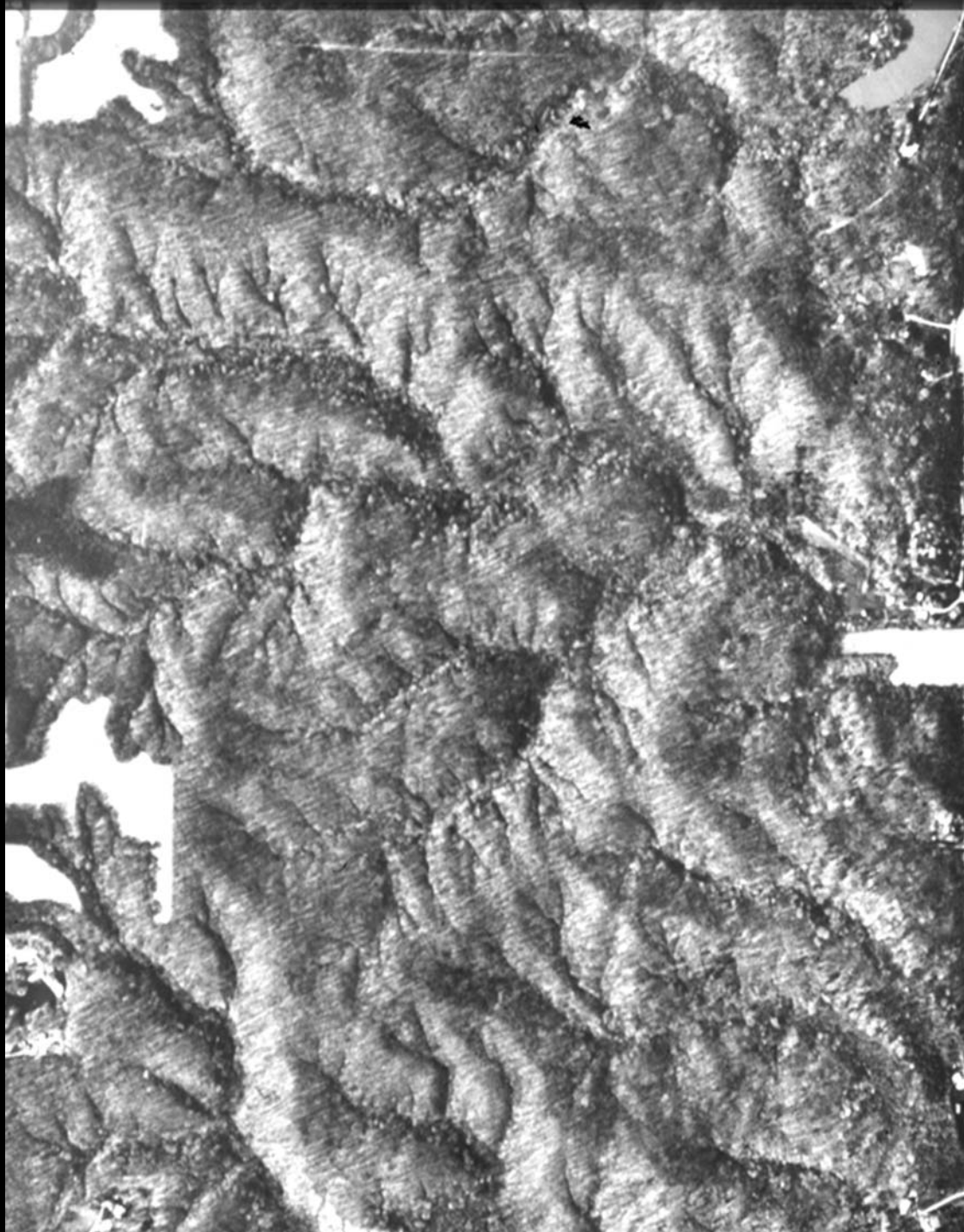






1938

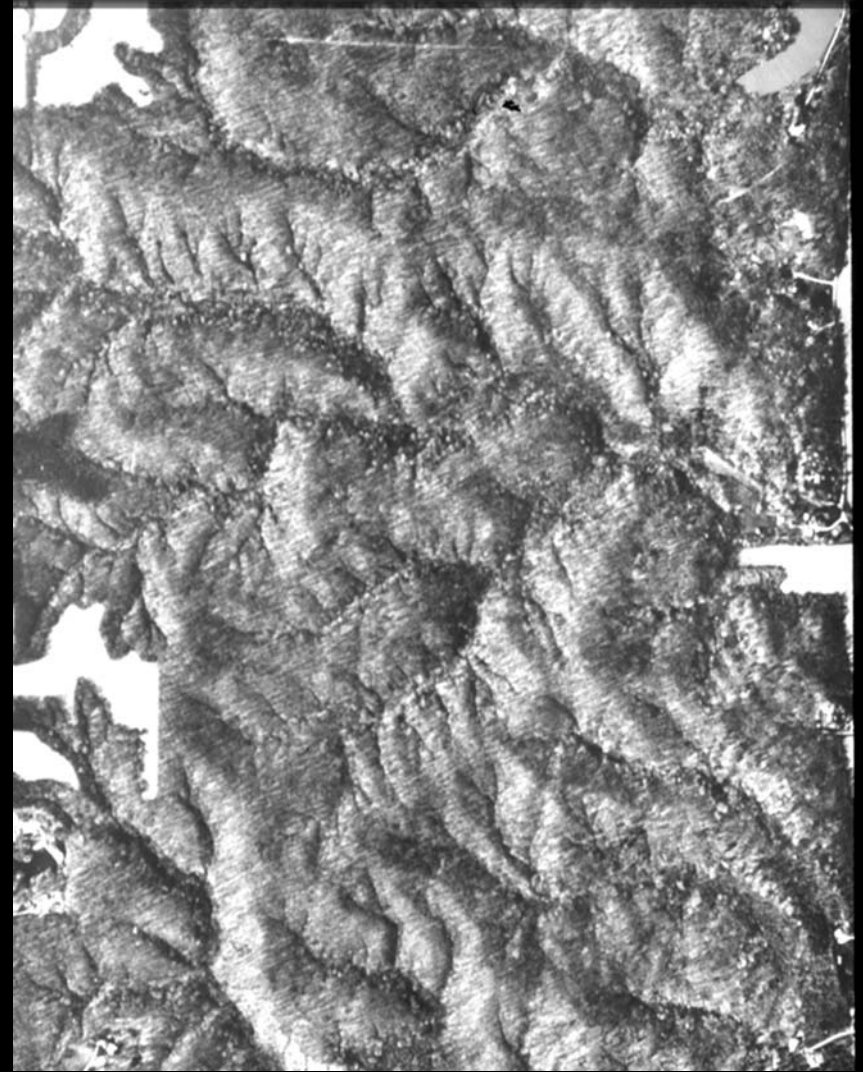
1998



Singing Woods Nature Preserve

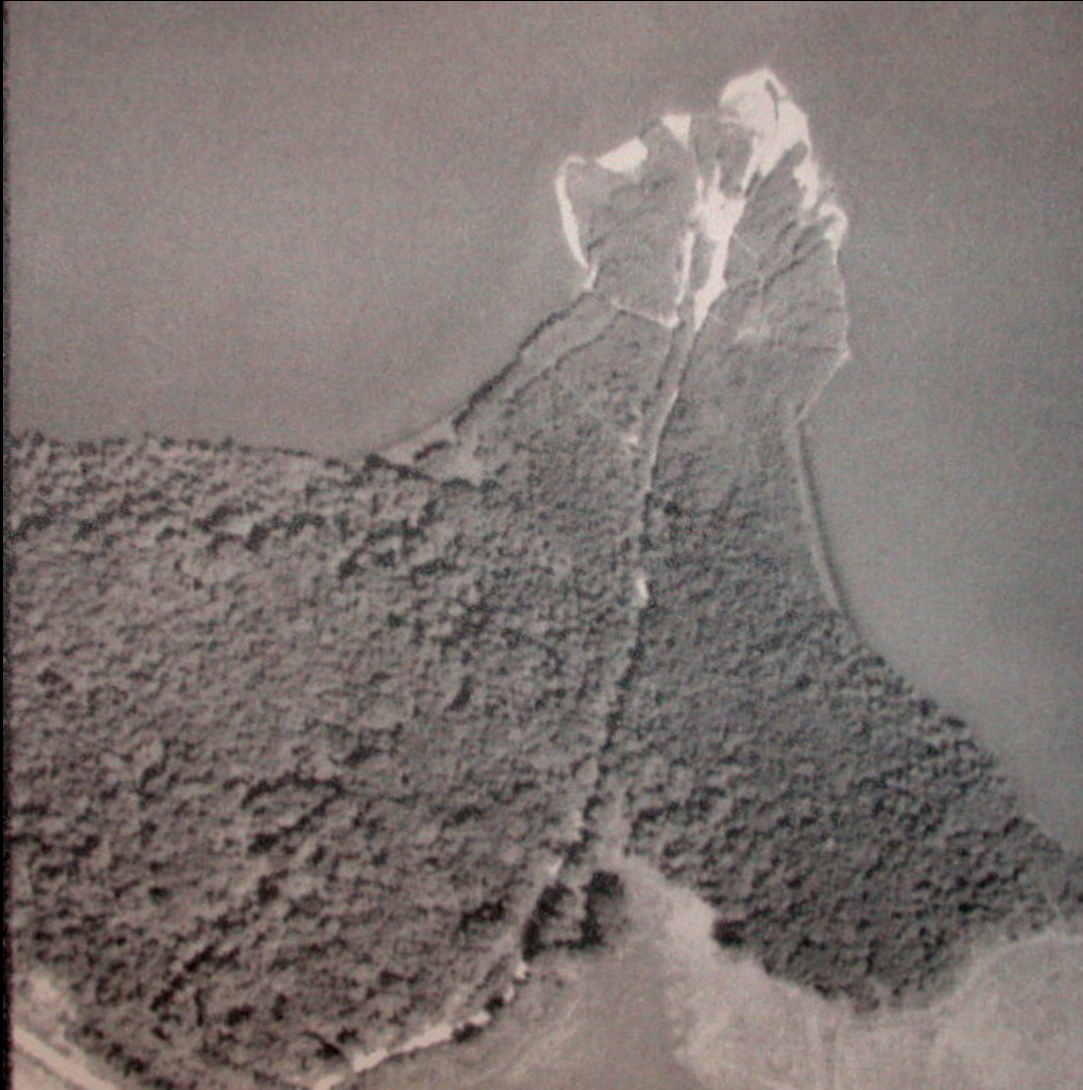


1938



1998

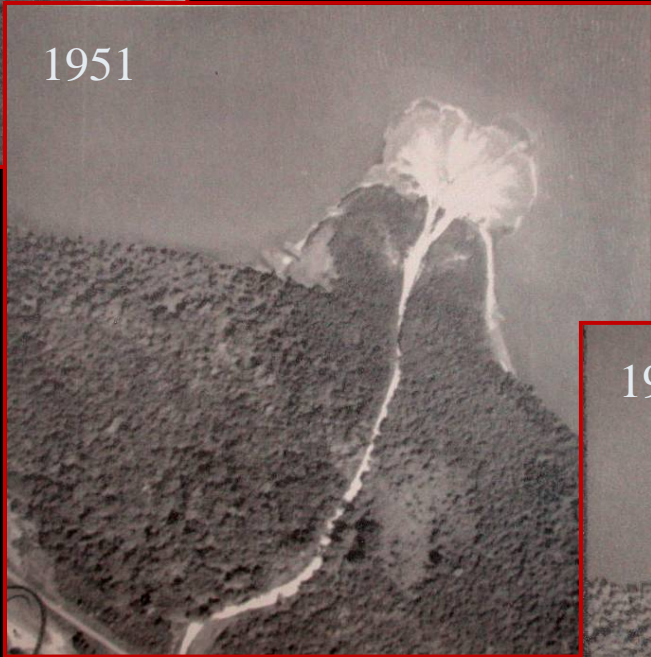
Dickinson Run Creek enters the Illinois River



1938

1951

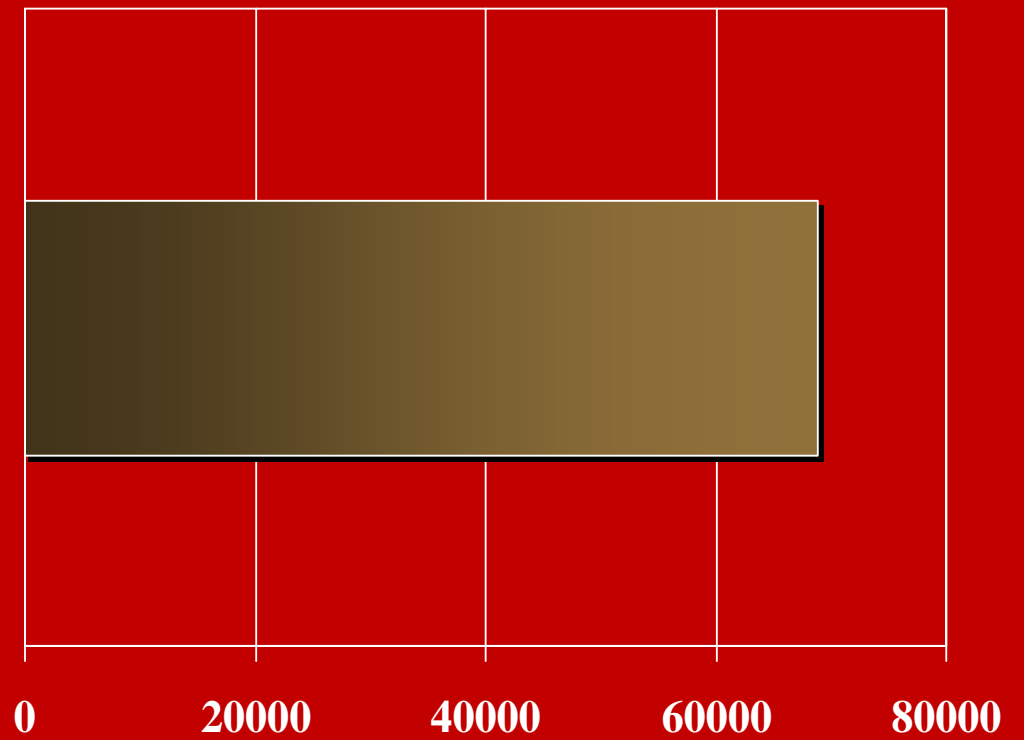
1957





Density of Seedlings per Hectacre

Sugar Maple





Unmanaged
Summer 1992, where
have all the flowers
gone?



Managed 

Summer 2002,
after 10 years of
stewardship



Copyright 1998, Clint Potts

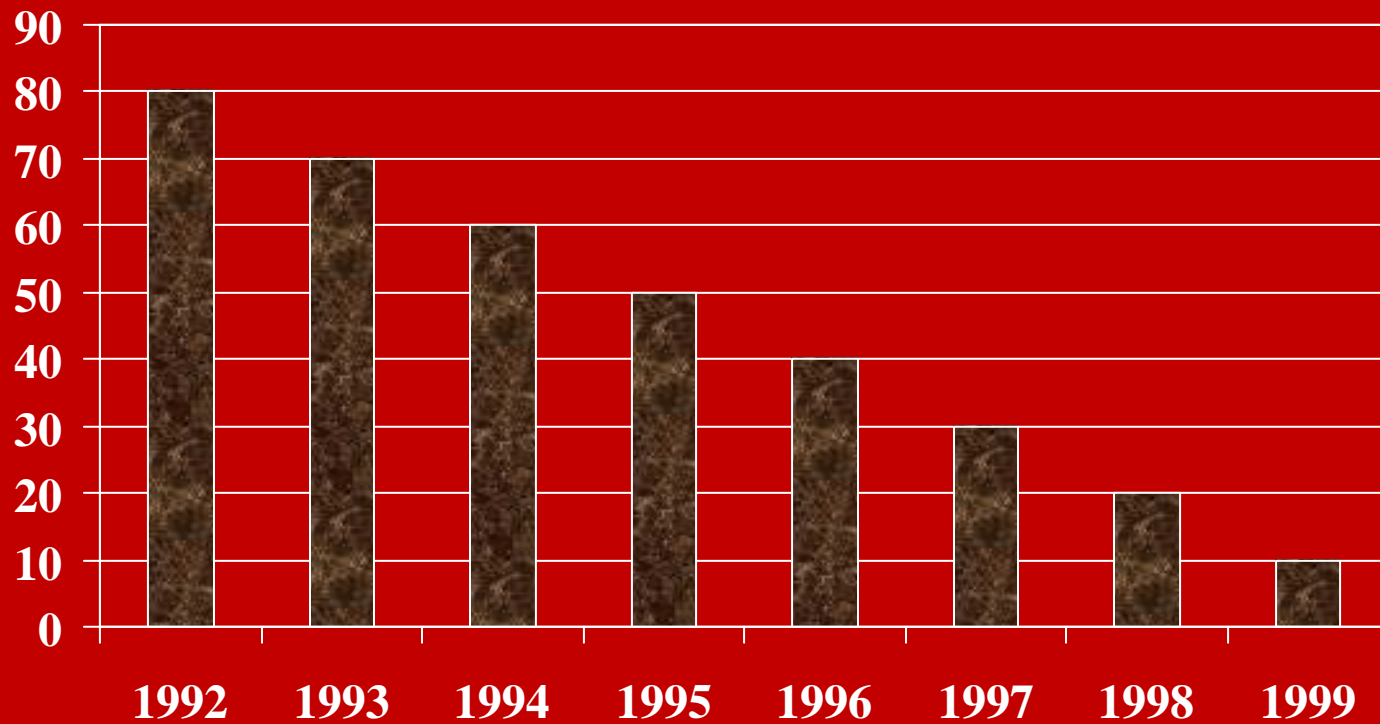


Copyright 1998, Clint Potts



Peoria Park District Restoration Data

Tons of Soil Loss per Acre



Causes of Sedimentation in Peoria Lake

Management of Natural Areas

Stormwater runoff from urbanized areas

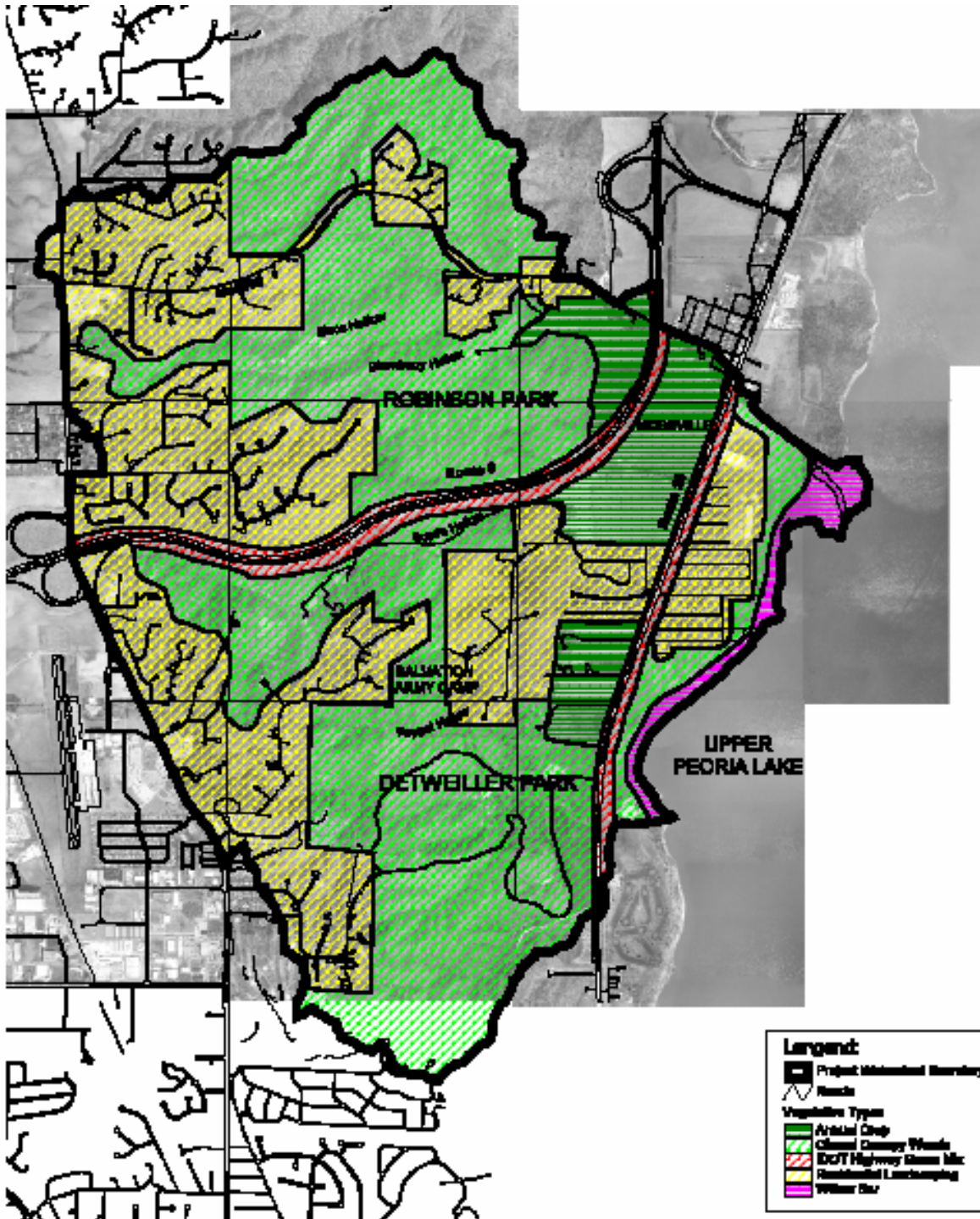


Figure 18. Photo of effects of roof water and lawn run-off eroding slope. The riprap shown here is not a permanent solution.

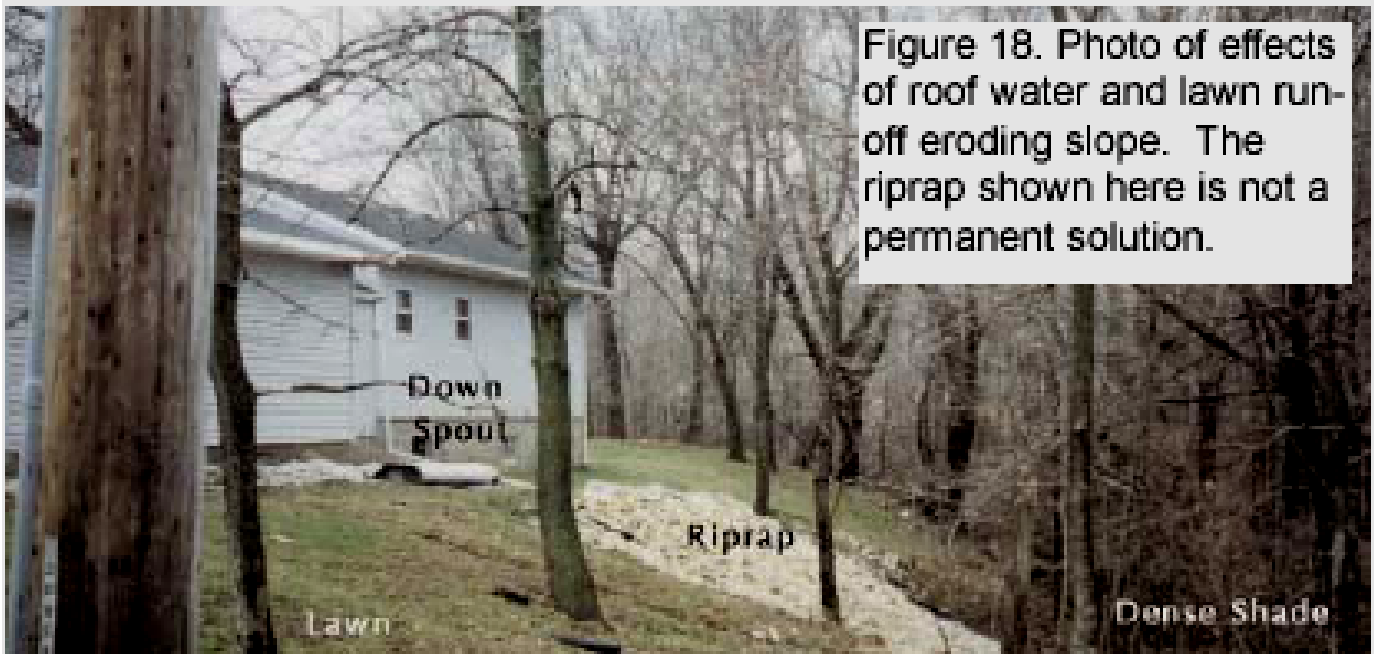
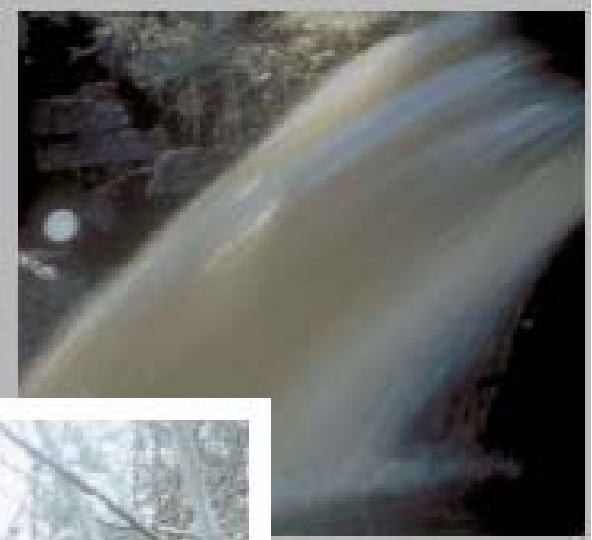




Figure 4. Ravine downcutting and erosion is caused from stormwater runoff from roofs and streets.

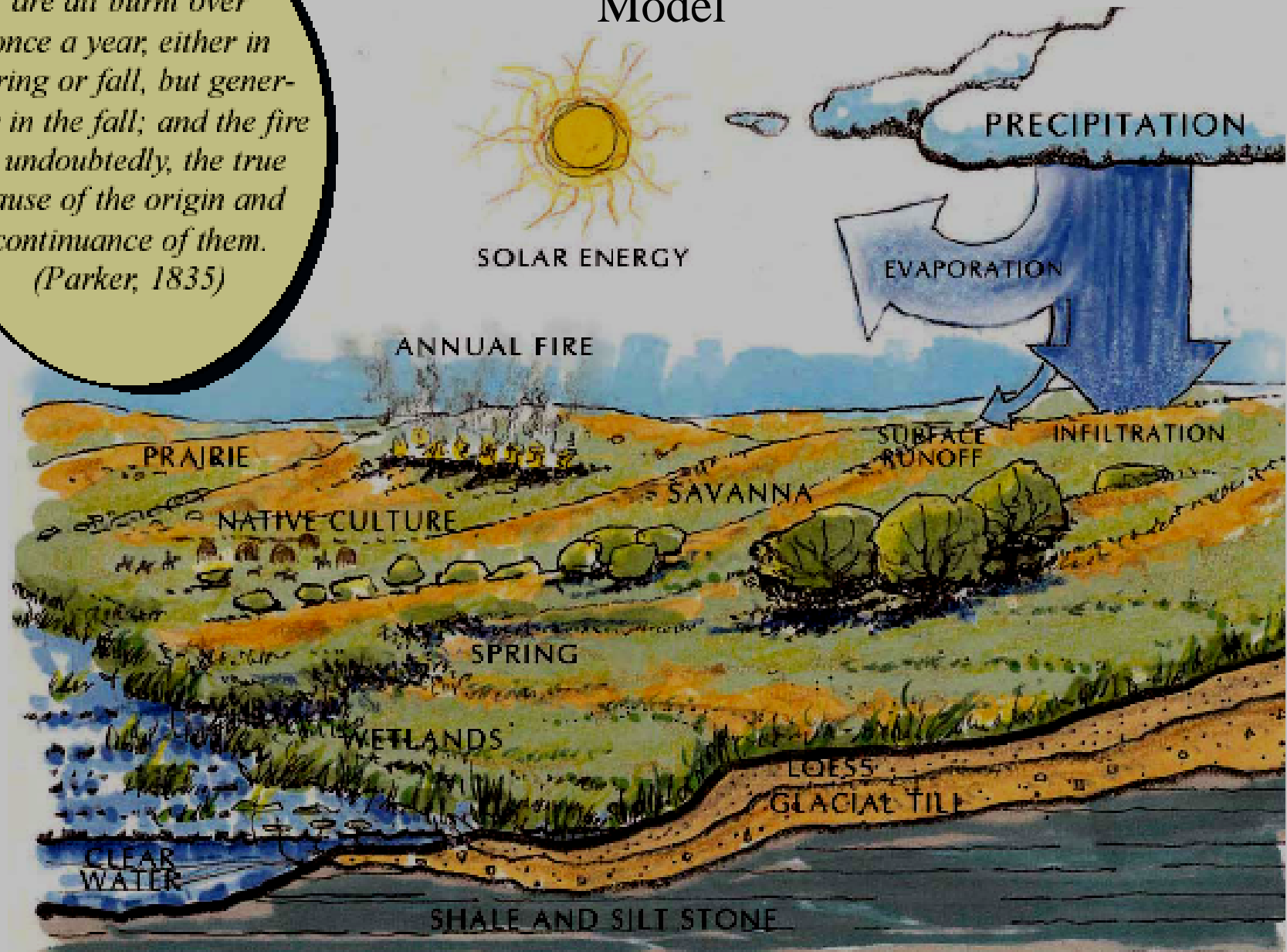


Stormwater
Outfall

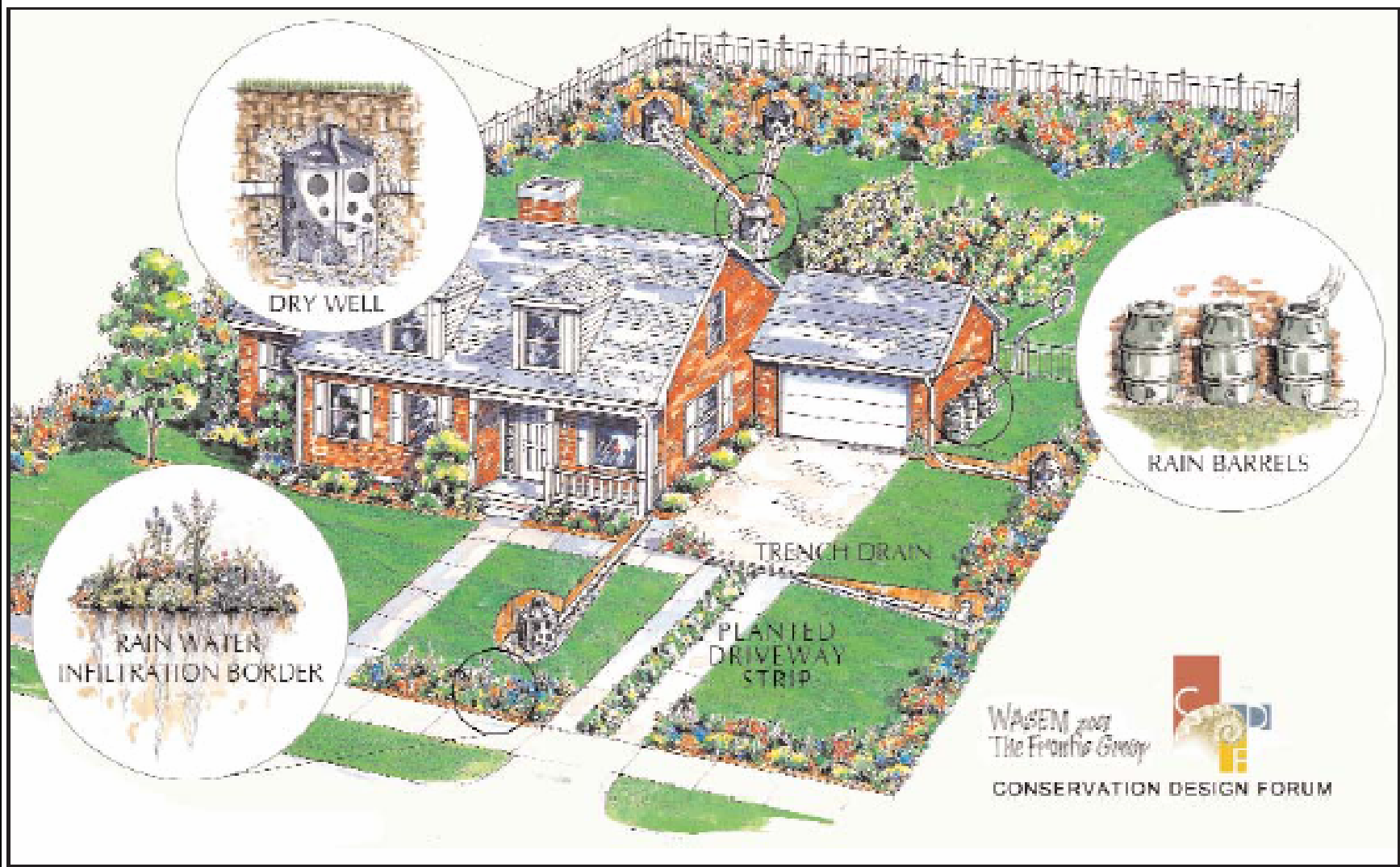


Natural Rainwater Management Model

*"The prairies are all burnt over once a year, either in spring or fall, but generally in the fall; and the fire is undoubtedly, the true cause of the origin and continuance of them."
(Parker, 1835)*

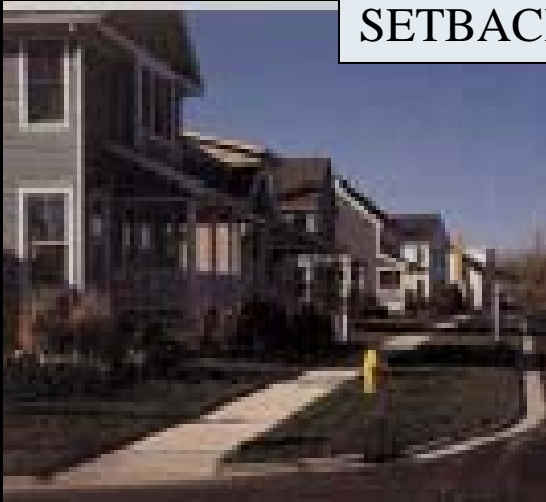


Stormwater Best Management Practices - *Infiltration*



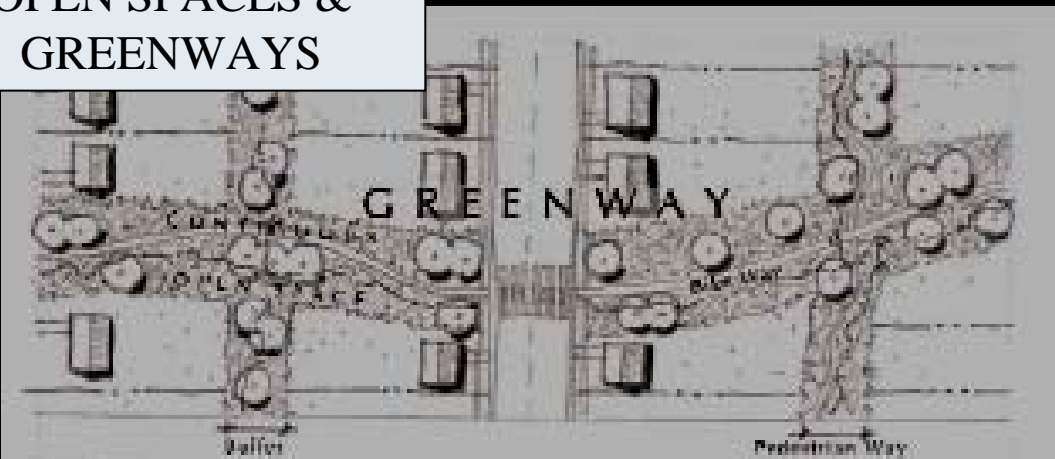
Planning and Zoning Best Management Practices

REDUCED
SETBACKS



CLUSTER
HOUSING

OPEN SPACES &
GREENWAYS

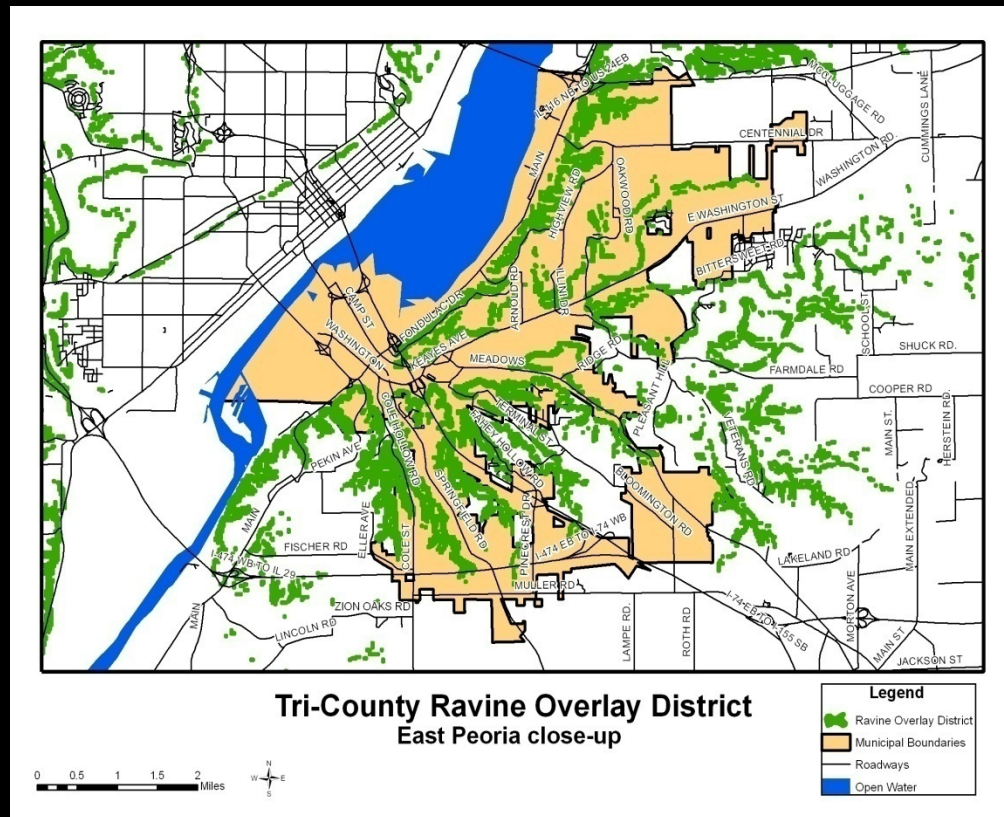


- REDUCED ROAD WIDTHS
- SHARED PARKING
- MIXED USE DEVELOPMENT

Bluff and Ravine Overlay Districts

Regulations for District Areas

- Setbacks from steep slopes
- Geologic studies for adjacent development
- Regulations on stormwater runoff





Implementing Best Management Practices in the Mossville Bluffs Watershed

A funding program to assist landowners with soil erosion on ravines and steep slopes

The Illinois River Bluffs are rapidly eroding and depositing massive quantities of sediment in the Peoria Lakes.



Figure 15. Image shows the collective contribution of concentrated rainwater from streets and the cutting the soft glacial soils.

Why is Erosion Occurring?

- Bluff soils are **highly erodible** and on steep slopes.
- Invasive plant species** are shading the forest floor. This prohibits native plant growth that would otherwise protect erodible soils.
- Stormwater** flow from roads, sidewalks and homes is concentrated into unprotected ravines.



Figure 6. Photograph of house at the top of a bluff with severe slope erosion below.

Program Opportunities

- Funding is available for property owners in the Mossville Bluffs Watershed. Eligible projects include:
 - Forest management
 - Ravine stabilization (i.e. check dams, rock walls)
 - Landscaping to slow stormwater flow into ravines
- Projects are identified based on a collaborative effort among neighbors in a series of 3 - 4 meetings. Professional volunteers will facilitate meetings and assist property owners in project identification.
- Residents are welcome to attend several free workshops on forest management and landscaping to prevent erosion.



Figure 23 (above). Depiction shows existing residence with the addition of a Rainwater Garden. Rainwater Gardens can detain and infiltrate rainwater from roofs, lawns, patios or other impermeable surfaces.

Program Partners:



To Get Involved



Melissa Eaton
Tri-County Regional Planning Commission
309/673-9796 x 232
meaton@tricityrplc.org

Funding for Implementing BMPs in the Mossville Bluffs is provided in part through U.S. Environmental Protection Agency under Section 319 of the Clean Water Act distributed through the Illinois Environmental Protection Agency

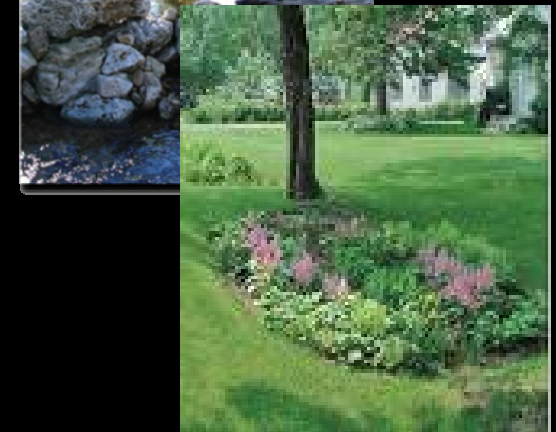


IEPA Non-Point Pollution Control Program



Project Partners:
City of Peoria

Natural Resources and Your Development Task Force



Implementing the Program...



...Information at the neighborhood scale

Sub-Watershed Plans

Ravine Restoration Concept Plan For the Oakbrook Homeowners Association

Created by: The Natural Resources and Your
Development Taskforce

November 2004

In July of 2004, the Oakbrook Homeowners Association requested through Melissa Eaton, Tri-County Regional Planning Commission, that the Natural Resources and Your Development Taskforce create a ravine restoration concept plan for the subdivision. Many homeowners were concerned about the erosion occurring along the ravines and wished to stabilize the system. The Taskforce created a comprehensive, watershed based mitigation plan that addresses stormwater runoff from *all* properties within the subdivision including those not directly connected to ravines. This plan is intended to be a *concept plan*. Engineering will be required to execute this plan.

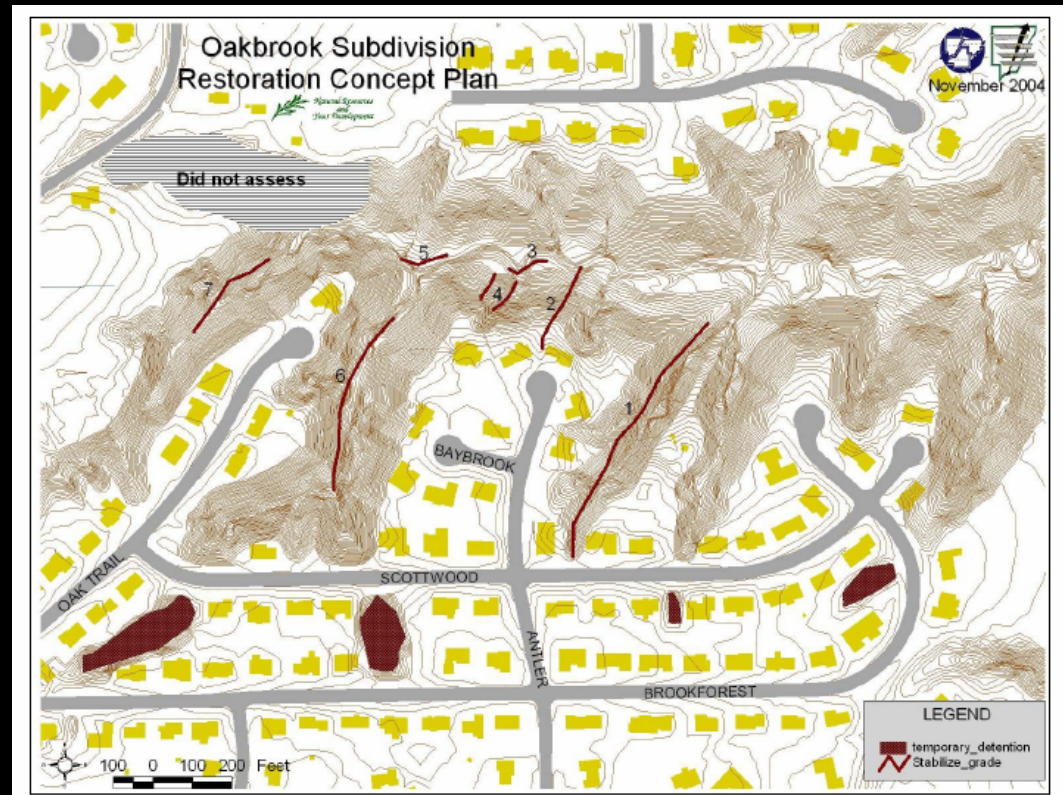
Below are the recommendations formulated by the Natural Resources and Your Development Taskforce:

Restoration Recommendations

All Properties

Erosion in this subdivision is caused by the large amount of stormwater being flushed into ravines after large and small rain events. The objective here is to reduce the amount of water entering the storm sewer and encourage homeowners to capture as much stormwater as possible on their property.

- ✦ Disconnect stormwater runoff from the storm sewer where possible (e.g. roof drains)
- ✦ Redirect downspouts onto a flat vegetated (preferably planted with hardy perennials) surface and off the pavement
- ✦ Capture rooftop runoff with rain barrels and rain gardens
- ✦ Plant hardy perennial vegetation along property borders to absorb water
- ✦ Plant 10-foot minimum buffer of hardy perennial vegetation along steep ravine slopes
- ✦ Minimize pavement and roof areas
- ✦ Reduce turf grass in favor of other ground covers with deeper roots
- ✦ Where lawn grass is used, let it grow longer
- ✦ Include swales and depressions in landscaping to store runoff



Forest Management... To Prevent Erosion

A workshop to manage forests on steep slopes

Who should attend: landowners in the Mossville Bluffs Watershed

✎ Learn the causes of ravine erosion
in your backyard

✎ Tour a demonstration site where forest
management practices **have been
implemented and are reducing erosion**;
demonstration sites include examples of
low-cost stabilization structures within ravines

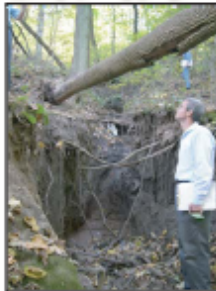


✎ Learn forest management techniques to slow the rates
of erosion and improve the quality of your forest

Saturday, October 14, 2006
9:00 am - 12:00 pm

Peoria Park District's Camp Wokanda
Dining Hall; 620 Boy Scout Road
Chillicothe, IL

From Peoria Take IL 29 North to Old Galena Rd. Turn west on
Boy Scout Rd behind Caterpillar



If you are concerned about rapidly eroding ravines in your wooded area, please
contact Melissa Eaton at Tri-County Regional Planning Commission for your reservation
309/673-9796 x 232 meaton@tricitypc.org



Demonstration Site 1

At this area, a very intense management strategy was used. This strategy involved the most labor and per acre cost, however, the response was the most immediate and positive. Here is what we did:

- **MONITORING** - Sugar maples between 1 and 5 inches in diameter were heavily overpopulated. Very little herbaceous vegetation was growing on the forest floor.
- **CUTTING** - 90% of the sugar maples in this size class were cut from the site.
- **PRESCRIBED BURNING** - Fire was reintroduced to the site in a prescribed burn.
- **ASSESSMENT** - follow up monitoring showed that herbaceous vegetation responded well.
- **ESTIMATED COST** - \$1,200 per acre (in 2003)

MAY 2003 - First season after treatment MAY 2004 - Second season after treatment

Camp Wokanda
Forest Renovation

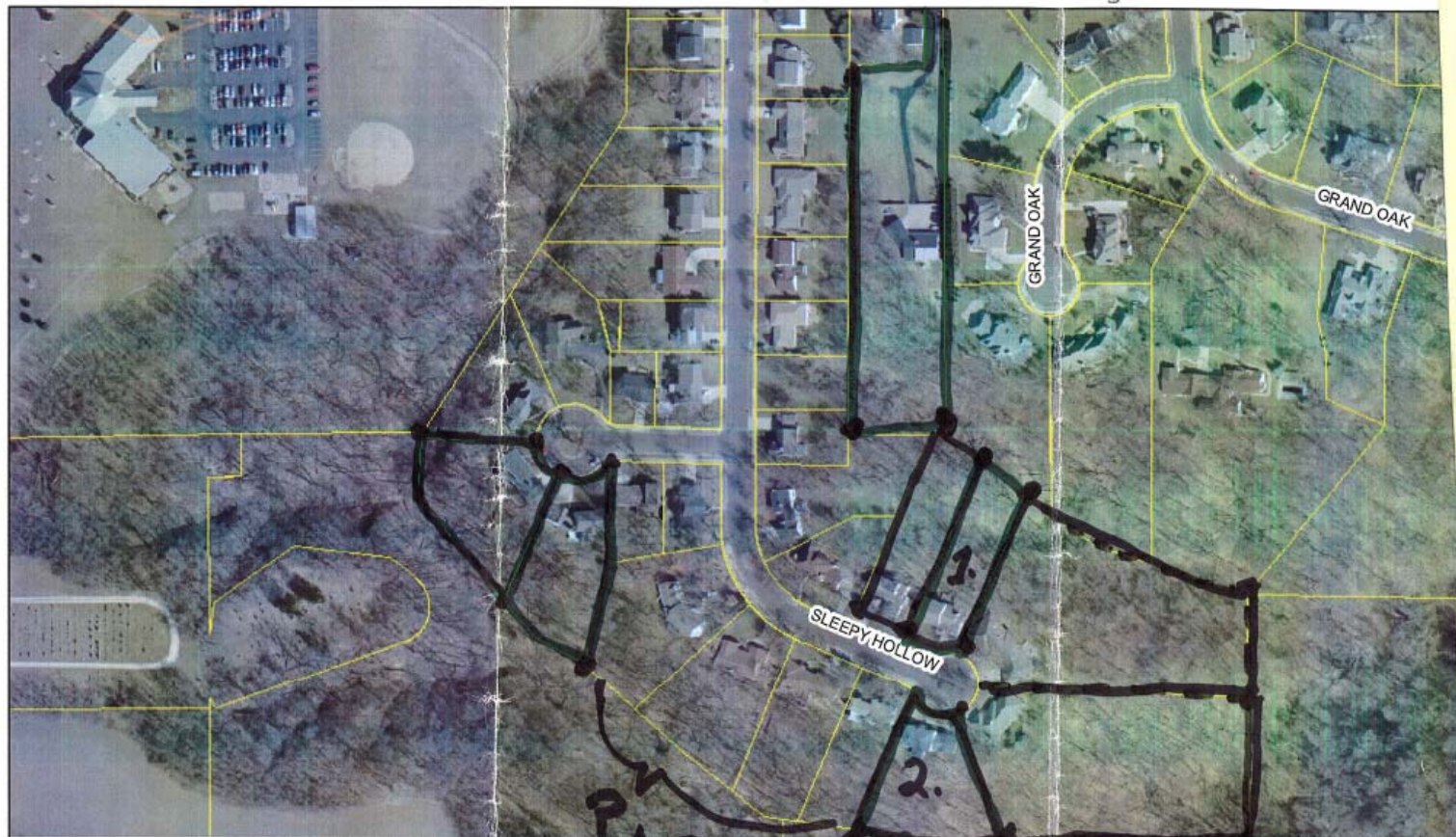
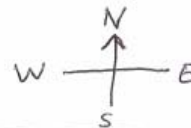


...Education at demonstration sites!

“400 Landowners have verbally agreed to participate in the program”



Sub-Watershed 2 - Sleepy Hollow
Forest Management Identification Map



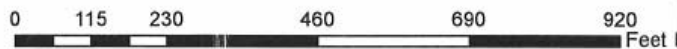
Legend

- Property boundaries
- mossville_watershed

1. Mclees
2. Nichting (City Councilman)
- PA? ↑?



Map created by Tri-County Regional Planning Commission



...Recruiting/Outreach

Implementing Best Management Practices in the Mossville Bluffs Watershed Forest Management Consent Form

Please complete the information below and submit as indicated on page 3 of this form.

Landowner Information

Mailing Address

First Name

Last Name

Address

City

State

Zip Code

Email

Property undergoing forest management

Same as mailing address

Address

City

State

Zip Code

1. Does your forested ravine contain construction fill material?

Yes No Unsure

Construction Activities

2. Please check one or more of the following practices you would like implemented by an ecological consultant on your property (both are recommended):

- Cutting or girdling 70% of invasive trees with a diameter at breast height of 8 inches or less
- Prescription burning

3. Please check one or more of the following methods for providing a minimum 25% project cost on your property:

- Cash (includes purchase of seed where necessary) Percentage of project costs %
- Volunteer labor at a rate of \$18.97 per hour Percentage of project costs %

3a. If you are to provide volunteer labor, please indicate the services you will perform on your property:

- Cutting or girdling invasive trees with a diameter at breast height of 8 inches or less
- Garlic mustard control
- Removing yard waste from the ravine

*Note: Anyone can perform volunteer labor on a property. These services need not be conducted by the landowner. Please record all volunteer hours using the time-tracking log provided by TCRPC.

Project Partners for Implementing Best Management Practices in the Mossville Bluffs Watershed include the City of Peoria, Natural Resources and Your Development Task Force, Heartland Water Resources Council, and Tri-County Regional Planning Commission

Implementing BMPs in the Mossville Bluffs Watershed is funded in part through USEPA Section 319 of the Clean Water Act and administered by the Illinois EPA.



abraham	Landergren_mailed
Adam Smith	Les Johnson
Adams, Steven 8-11-07	Locher_mailed
Albers_Mailed 8-06-07	Luthy_mailed 8-15-07
Anderson_mailed 9-2-07	McGrath_mailed 9-1-07
Arf_mailed 8-1-07	McLees
Barnato_mailed	McLees note
Bergstresser_mailed 8-20-07	McWhirter_mailed 8-07-07
Bevill_mailed 9-12-07	millard_mailed 8-06-07
Bodtke	mitzelfelt
Bower	Moehlenkamp
Brennan	Morrissey_mailed
Brennen_mail 8-14-07	Muller_mailed
Brown note	Myers
Brown_mailed 8-15-07	nault
Campbell	Nettles
Carroll	Nichting_mailed 8-01-07
Cassidy	Nickerson
Chan_mailed8-1-07	Nigel Smith
Chaney_mailed 9-11-07	North Minster
Christina Smith	Parrish
Cicciarelli	Parrot mailed 8-05-07
Dehann_mailed 8-13-07	Ramsay
Dien	Reeb_mailed 9-20-07
Dien_mailed 8-22-07	Rennick
Dorethy_mailed 8-06-07	report
Drury_mailed 8-01-07	report1
Elder	Rohman_mailed 8-28-07
Flemming	Rosser_mailed 8-27-07
Flemming_mailed	schmidt
Fritz_mailed	Shaheen
Garner_mailed 8-22-07	Stanley_mailed
Gleason	Sullivan_mailed
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Grober	Thieman
Hanley	Thomas_mailed 9-20-07
Havran_mailed 8-16-07	Times_mailed 8-27-07
Hayes	Turcot
Hemmer	Urbanik_mailed 8-14-07
Henry	Vacca_mailed 8-06-07
Henry	Vermel_mailed 8-02-07
Houlf_mailed 8-01-07	Waibel_mailed
Householter	warner_mailed 8-27-cash
Ingersoll_mailed 8-21-07	William G Schefelbein
Johnsen_mailed8-14-07	Winek
Johnson, Les	Winek 2_mailed
Knight_mailed 8-07-07	Woessner_mailed 8-07-07
Knost_mailed8-13-07 cash 100	Zell_mailed 8-27-07
Krock_mailed	
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...Organization
creating the
program



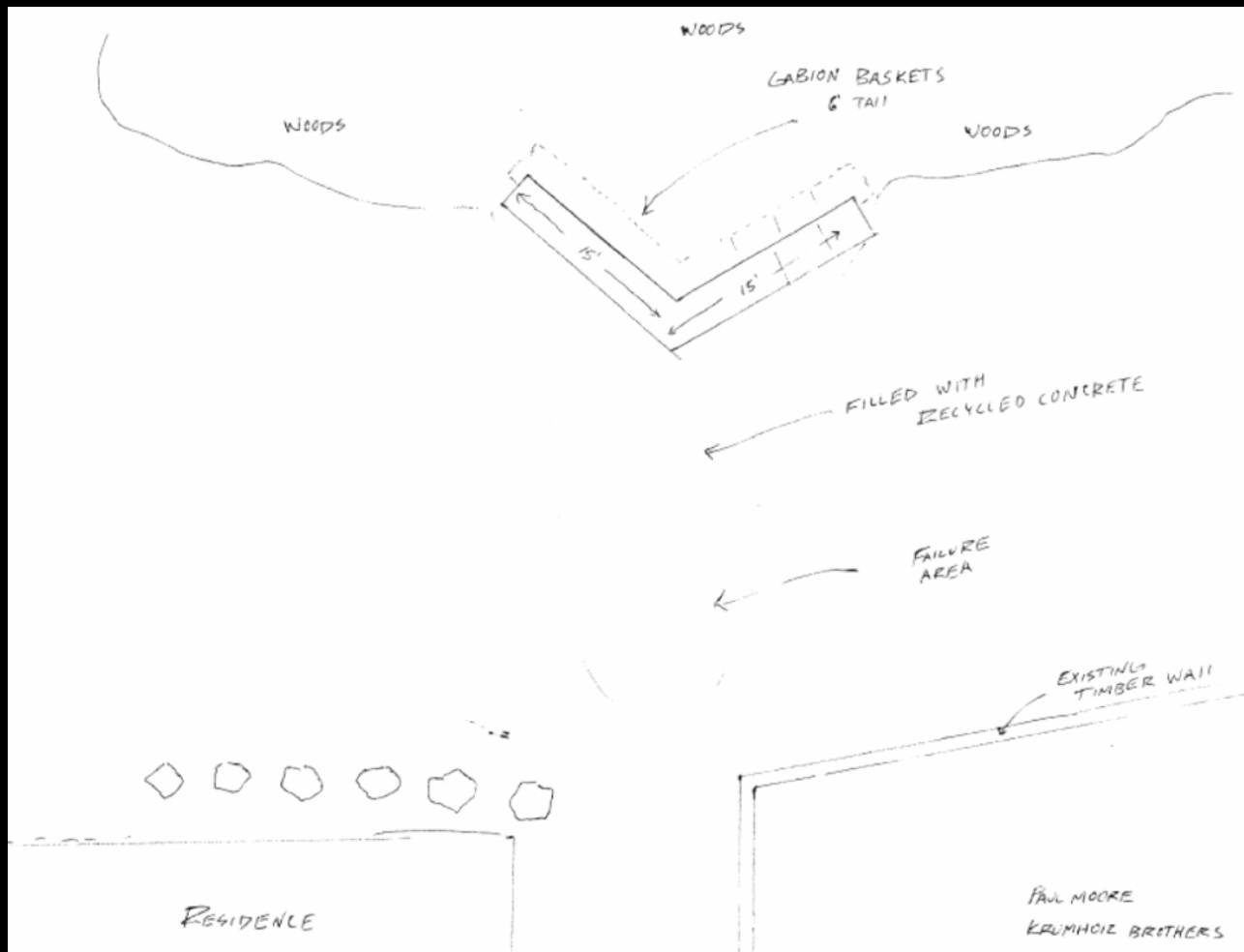
...Communication

Patience is a virtue!



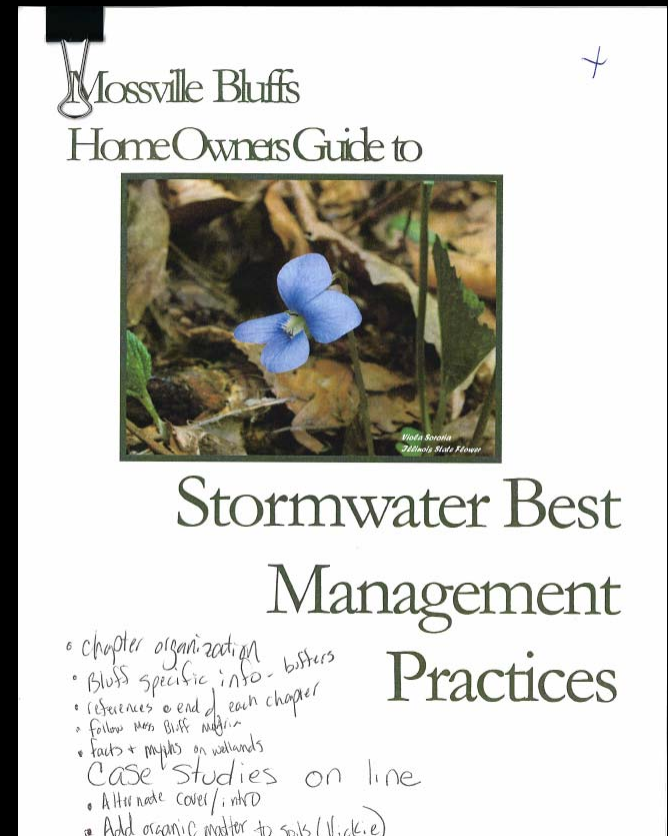
Next Steps

- Channel stabilization



Next Steps

- Channel stabilization
 - Urban stormwater
 - BMP manual
 - Urban stormwater workshop
 - Funding mechanism or urban stormwater bmps
-
- Outreach beyond Mossville
 - Brochures
 - tours



www.tricountyrpc.org



Tri-County Regional Planning Commission

TCRPC

Transportation

Community

Environment

Data

Home

Mossville Bluffs

Watershed Program

Peoria Lakes Basin
Alliance

Watershed Planning

Environmental Inventory

Regional Stormwater
Plan

Environmental Planning

As development continues in the tri-county area, it is particularly important to incorporate the preservation of our natural resources into our plans for community growth. Tri-County Regional Planning Commission participates in the Peoria Lakes Basin Alliance, watershed planning, development of erosion control ordinances, natural



resource inventories, and greenways and trails planning. It is through these efforts that TCRPC has demonstrated a commitment to preserving natural areas for the purposes of erosion control, maintaining bio diversity, and to improve the quality of life for those who enjoy experiencing nature in their communities.

Tri-County Regional Planning Commission

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