

# Returning Home:


Reconciling human impacts using native plants



Plaster Creek Stewards  
Fall Event  
October 14, 2017

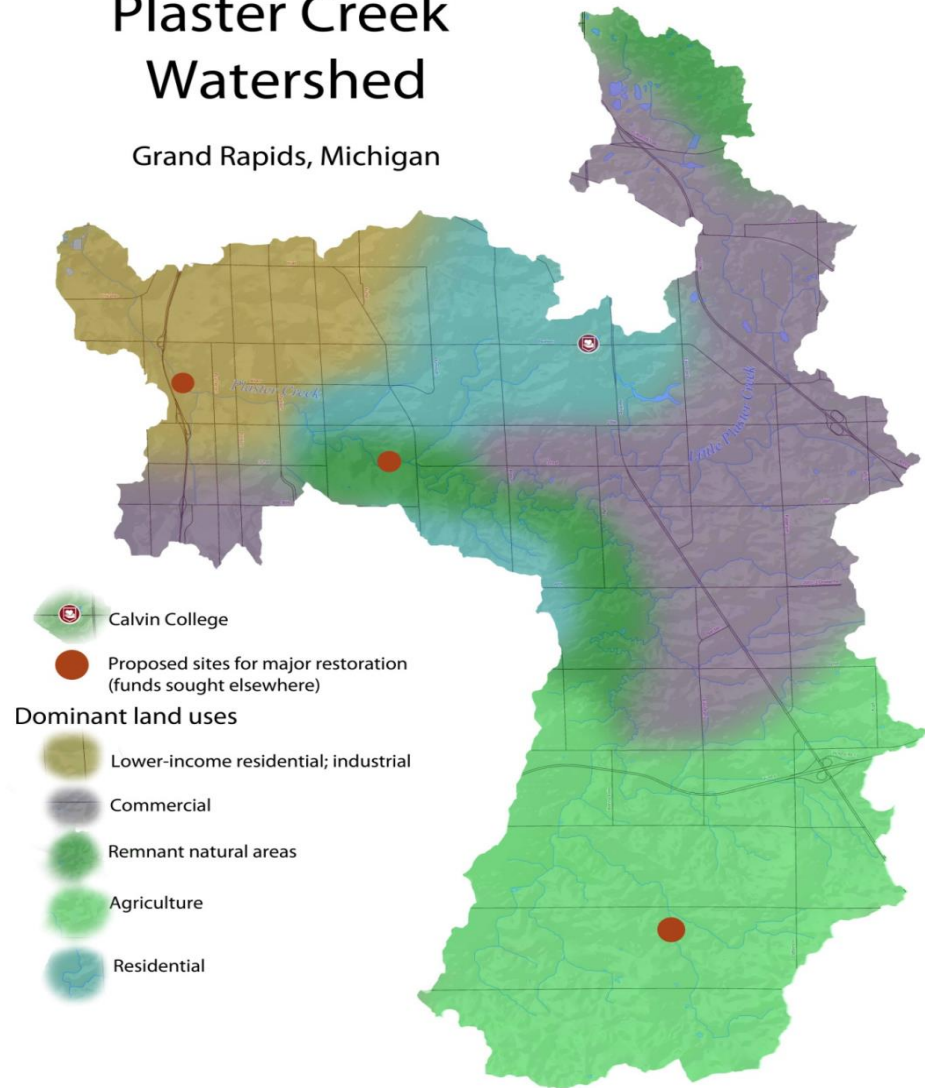


# Urban watersheds

- ▶ What is a watershed?
  - ▶ Everyone lives in a watershed
  - ▶ Watersheds integrate communities
  - ▶ Most urban watersheds are seriously degraded
- 

# Plaster Creek Watershed

Grand Rapids, Michigan



Cartographer: Seth Kenbeek  
Image prepared by Nathan Haan

## Background statistics:

- Length: approx. 14 miles
- Watershed area: 58 mi<sup>2</sup>
- Governmental units: 9 (4 municipalities & 5 townships)
- >50% of Calvin fac. and staff
- 3200 Calvin Alumni
- > 172 churches and faith communities



# Main Problems

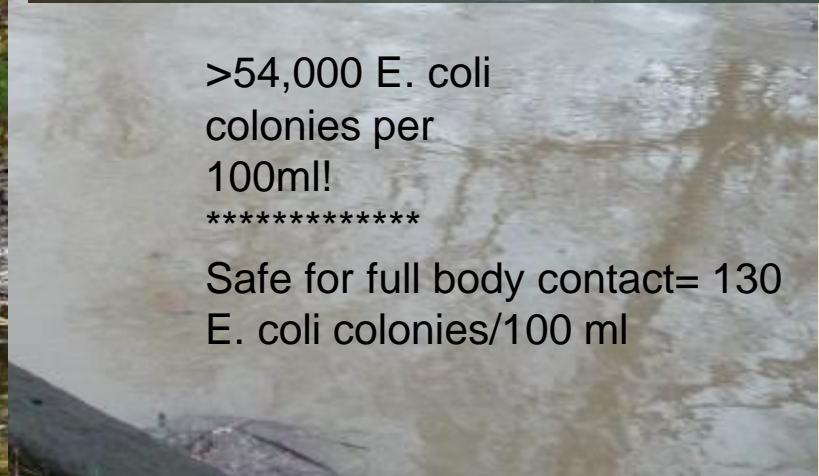
- Flow dynamics (volume)
- Sediment
- Bacterial contamination
- Nutrient pollution
- Thermal pollution
- Trash and Toxic substances



>54,000 E. coli  
colonies per  
100ml!

\*\*\*\*\*

Safe for full body contact= 130  
E. coli colonies/100 ml





# Plaster Creek Stewards



*A collaboration of Calvin College, schools, churches, and community partners working to restore health and beauty to the Plaster Creek Watershed.*



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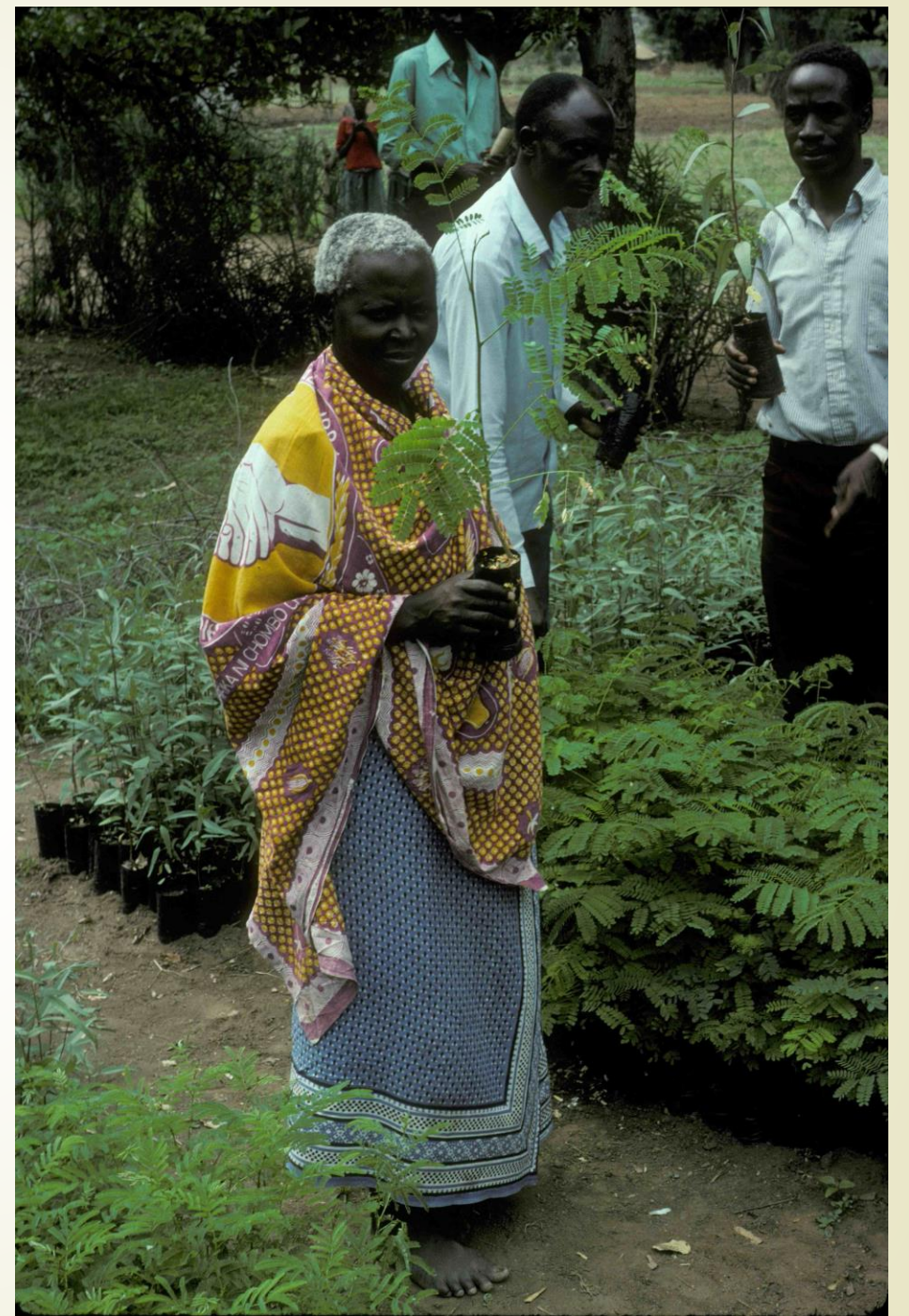


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# Biodiversity Provides Ecological Services

Three Types of Ecological Services:

Supporting (building soil, capturing energy, cycling nutrients, etc.)

Regulating (water filtering/cycling, pollination, food webs, etc.)

Provisioning (food, water, medicines, fibers, building materials, etc.)

Service . . . Serve . . . Abad

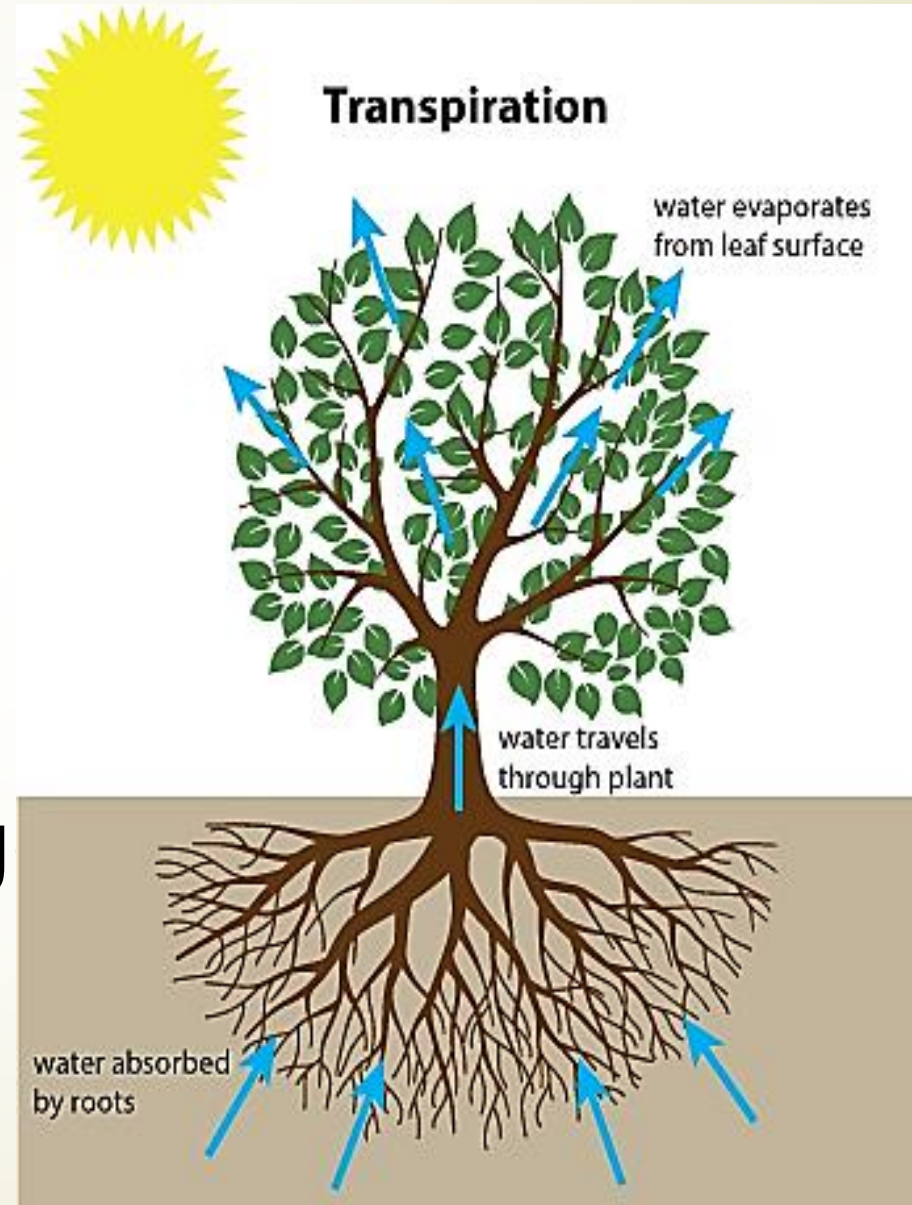
Gen 2:15 “The Lord God took the man and put him in the garden to abad (serve) and shamar (*preserve*) it”

Cal DeWitt: Conservation



# Natural Rainwater Processing

- Interception
- Evaporation
- Infiltration
- Transpiration
- Groundwater storage
- Groundwater discharge
- (surface runoff)





# 'Modern Day' Rainwater Processing

- Interception
- Evaporation
- Infiltration
- Transpiration
- Groundwater storage
- Groundwater discharge
- **Surface runoff**





# Indigenous people lived in the watershed for thousands of years



- ▶ Paleo Indians  
9000 BC
- ▶ Hopewell Indians  
200 BC
- ▶ Ottawa Indians  
AD 700



These people were provisioned by the native plants in this watershed

European immigrants mostly diminished the presence of native plants, not recognizing the many services they provided

How did native peoples use these native plants?







# Oaks – especially white oaks

Acorns boiled, split open and eaten like a vegetable

Ground, scorched acorns made into a drink similar to coffee

Acorns boiled, simmered, ground, sifted and made into mush with bear oil seasoning





# Compass Plant

## *Silphium laciniatum*

Gum from upper part of stem used as chewing gum by children

Seeds eaten as snacks





# Rattlesnake Master

## *Eryngium yuccifolium*

Used as snakebite remedy

Plant used to produce a feeling of peace and tranquility.\

Root chewed for stomach aches





# Wild Columbine

## *Aquilegia canadensis*

Chewed seed paste spread among clothing and used as perfume, especially by bachelors.

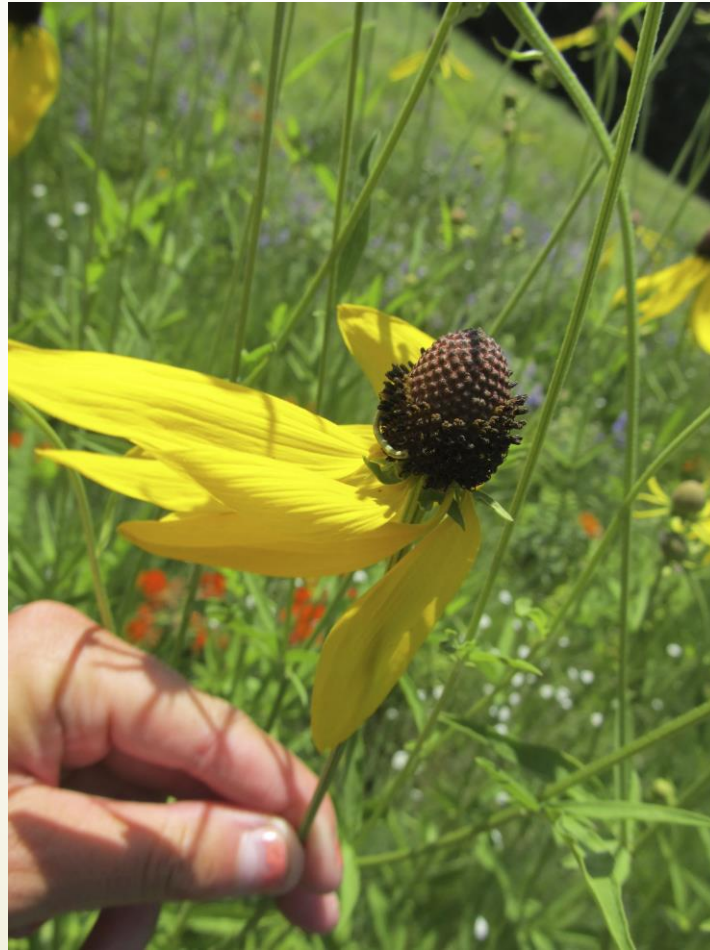
Pulverized seeds used as a love charm

Seeds taken for headache and fever





# Yellow Coneflower (*Ratibida pinnata*)



Healing Tea for toothaches

Seeds used as aroma enhancer



# Iris virginica

Poultice of root, very strong, applied to swellings, burns, sores, etc.

Infusion of plants and bulrush used as a gargle for sore throats





# Swamp Milkweed

## *Asclepias incarnata*

Infusion of root used as a strengthening bath for children

Infusion of root used to drive the tapeworms from a person in one hour

Infusion of roots applied to heal babies navel

Fiber used to make good twine





# Butterflyweed

## *Asclepias tuberosa*

Seeds or root used as gentle laxative

Stems used to make belts

Poultice of smashed roots applied to legs for running strength





# Blazing star *Liatris spp.*

Roots used as an appetizer

Decoction of leaves and corms  
given to children for diarrhea

Poultice of powdered plants applied to external inflammation





# Sumac (Staghorn, Smooth, Shining) *Rhus* spp.



Berries steeped in water, sweetened with sugar and drunk like lemonade

Berries used to make a gargle for sore throat

Sprouts eaten raw





Plants have a history here – they have been provisioning people and other creatures for thousands of years. We can serve them by helping to bring them back, and once they return, they will once again serve us and those with whom we share this watershed. Con-serve-ation!

Craig Childs:

“I’m amazed by the good we can do. We’re not just a devouring species, eating everything in our path. We’re also a species that preserves ecosystems, that cleans up rivers, that puts seeds in the ground. We aren’t just destroyers. We are repairers, too.”



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# Work options for the morning



## **#1 The Point- (10 people) - Jason** **555 28th St SE, Grand Rapids, MI 49548**

- ✓ Planting wildflowers into existing bioswale
- ✓ Creating a check dam
- ✓ Calvin Van-7 people

## **#2 Greenhouse (20 people) - Andrea** **3770 Lake Drive Grand Rapids MI 49546**

- ✓ Winterizing Greenhouse- transplanting, sorting etc.
- ✓ Andrea Van- 6 people or walk the trail

## **#3 CRC Denominational Building (30 people) -** **Greg, Micah, Mike R., & Julie**

1700 28th St SE, Grand Rapids, MI 49508

- ✓ Weeding/Seed collecting
- ✓ Planting
- ✓ Pick up trash
- ✓ Need own transportation





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**Find us on Facebook under Plaster Creek Stewards**