Plaster Creek Stewards

Spring event 2011

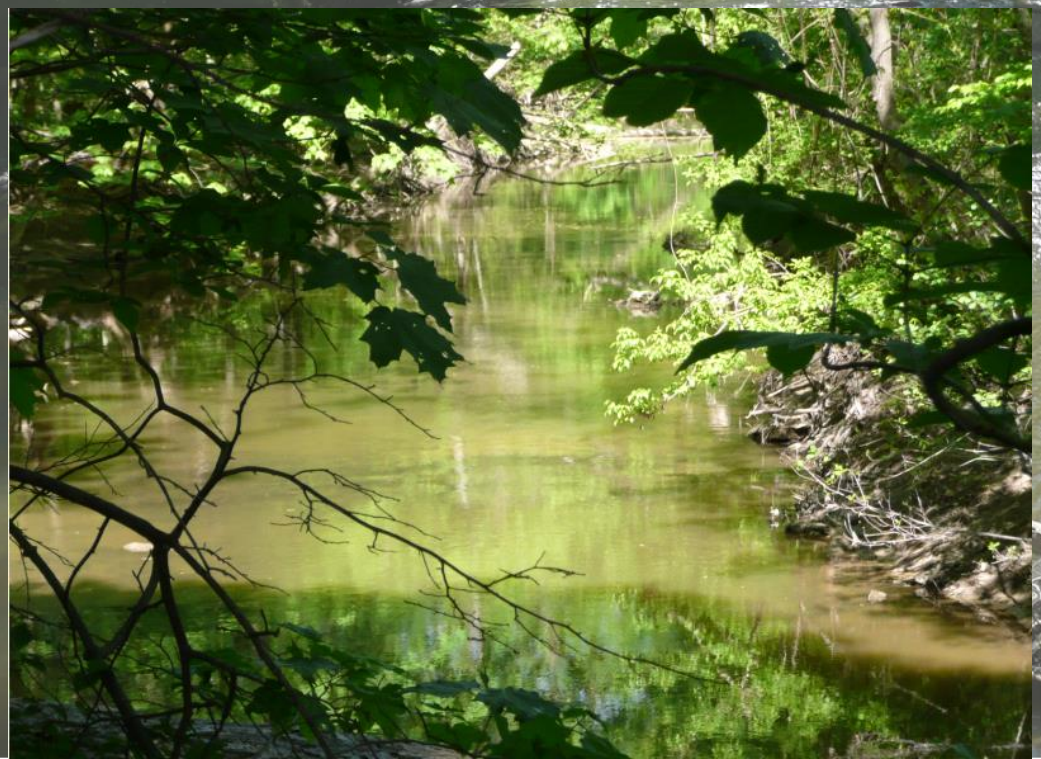
A collaboration of community partners, churches, and Calvin College faculty and staff working to restore health and beauty to the Plaster Creek Watershed.

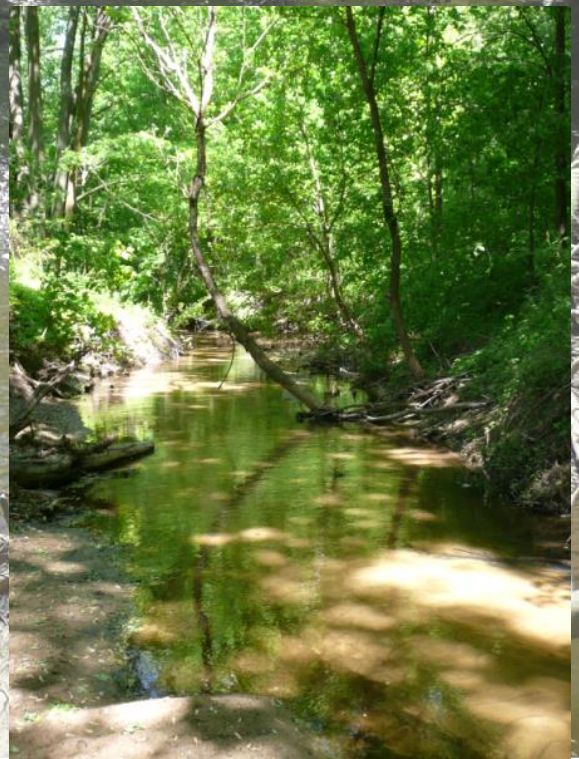
Quick outline: Profile of a human-dominated watershed

- New organizational developments
- What's wrong with the watershed?
- Engaging the whole watershed—upper and lower

New developments

- Multi-year organizational plan
- Hired a full-time project manager





Three-part approach

- Research
  - Which areas of the watershed should we prioritize?
  - Which problems occur in which areas? Which restoration activities are appropriate in which areas?
  - Monitoring
  - Historical research
  - **Integrated** with the biology department course curriculum and faculty research.
- Education and Outreach
  - Spring and fall events—education and volunteer components
  - Summer workshops
  - Partnerships among churches, environmental organizations, government, businesses… (WMEAC, DEQ, Friends of Grand Rapids Parks, Grand Rapids Parks Department, KCD, Pioneer Construction…)
- On-the-ground restoration work
  - Hydrology & habitats

Roosevelt Park CRC
Woodlawn CRC
Alger Park CRC
Madison CRC
Christ Church
Church of the Servant

What's wrong with Plaster Creek?

“Designated uses” of Plaster Creek

Use	Status
Indigenous aquatic life/wildlife habitat	Impaired
Warm water fishery	Impaired
Partial body contact recreation	Threatened
Total body contact recreation	Impaired
Agriculture (irrigation)	met

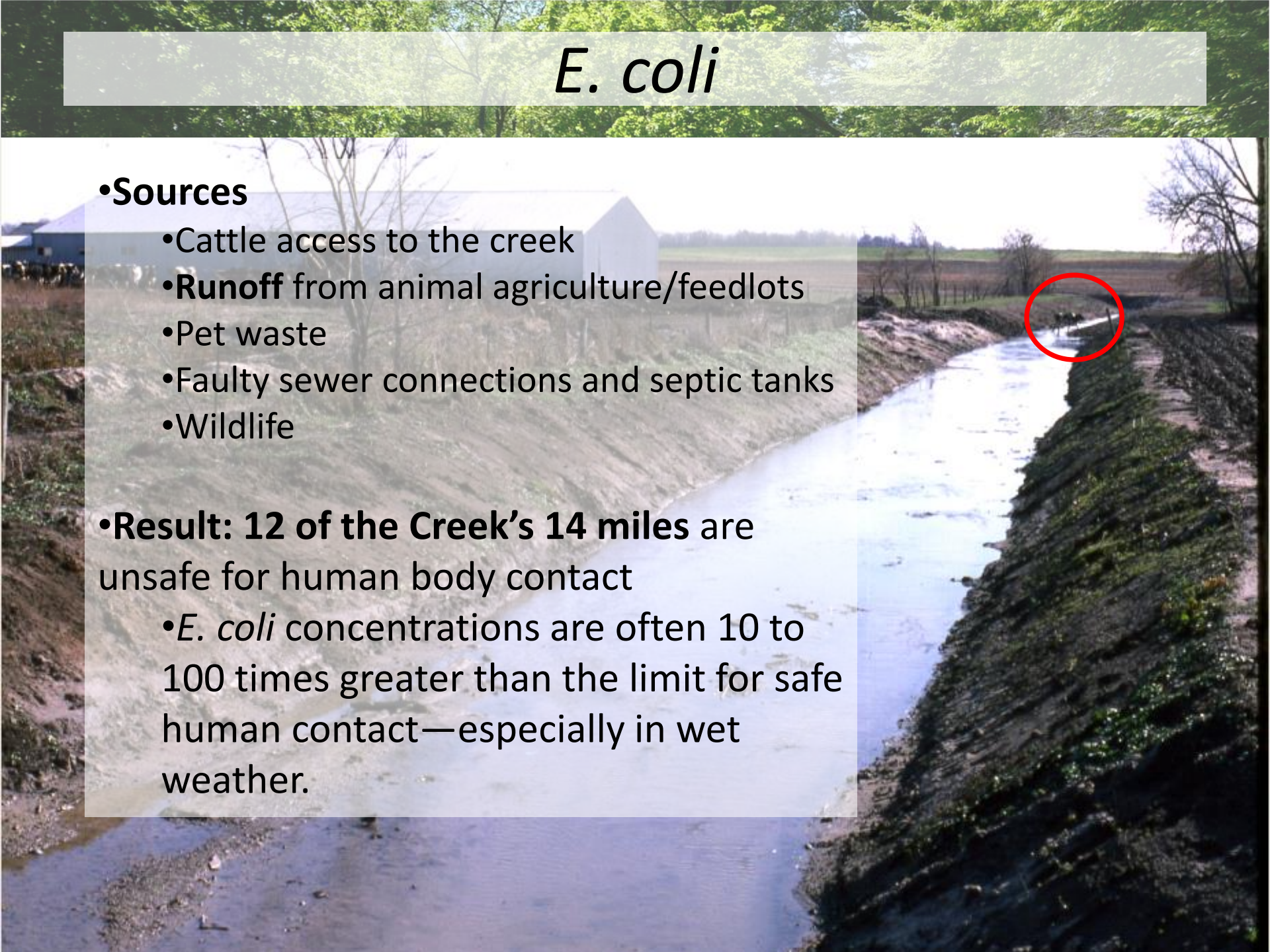
Source: Plaster Creek Watershed Management Plan. Fishbeck, Thompson, Carr, & Huber, Inc. 2008

An environmental issue *and* a social justice issue

What causes these impairments?

- *E. coli* contamination
- Nutrient pollution
- Thermal pollution
- Toxic substances
- **Sediment**

E. coli



- **Sources**
  - Cattle access to the creek
  - **Runoff** from animal agriculture/feedlots
  - Pet waste
  - Faulty sewer connections and septic tanks
  - Wildlife

- **Result: 12 of the Creek's 14 miles** are unsafe for human body contact
  - *E. coli* concentrations are often 10 to 100 times greater than the limit for safe human contact—especially in wet weather.

Nutrient pollution

- Too much of a good thing
- Main inputs:
  - Sediment
  - Animal manure
  - Fertilizers
  - Sewers and septic systems

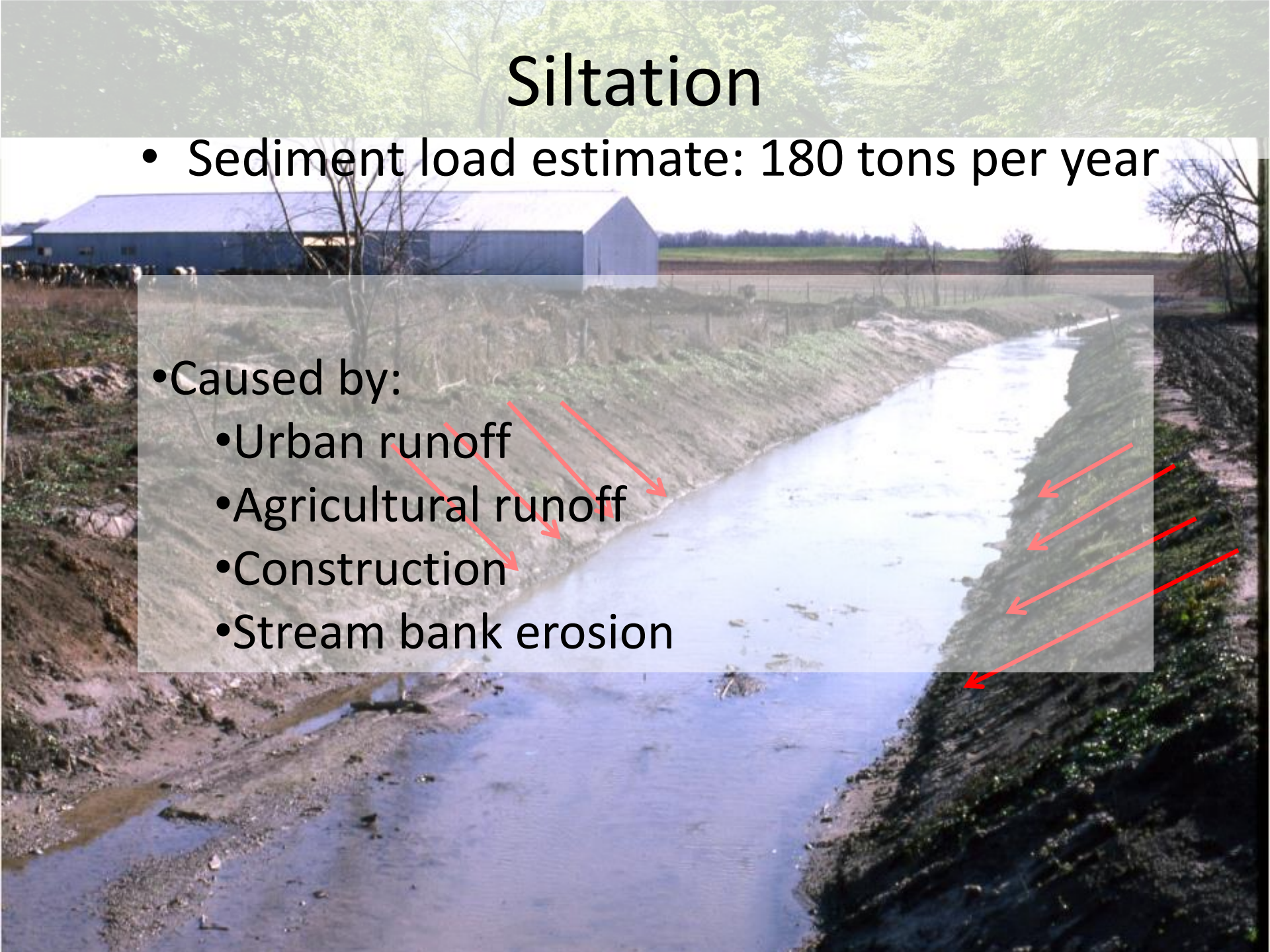
Thermal Pollution

Toxic substances

Point source and **non-point source**

Siltation

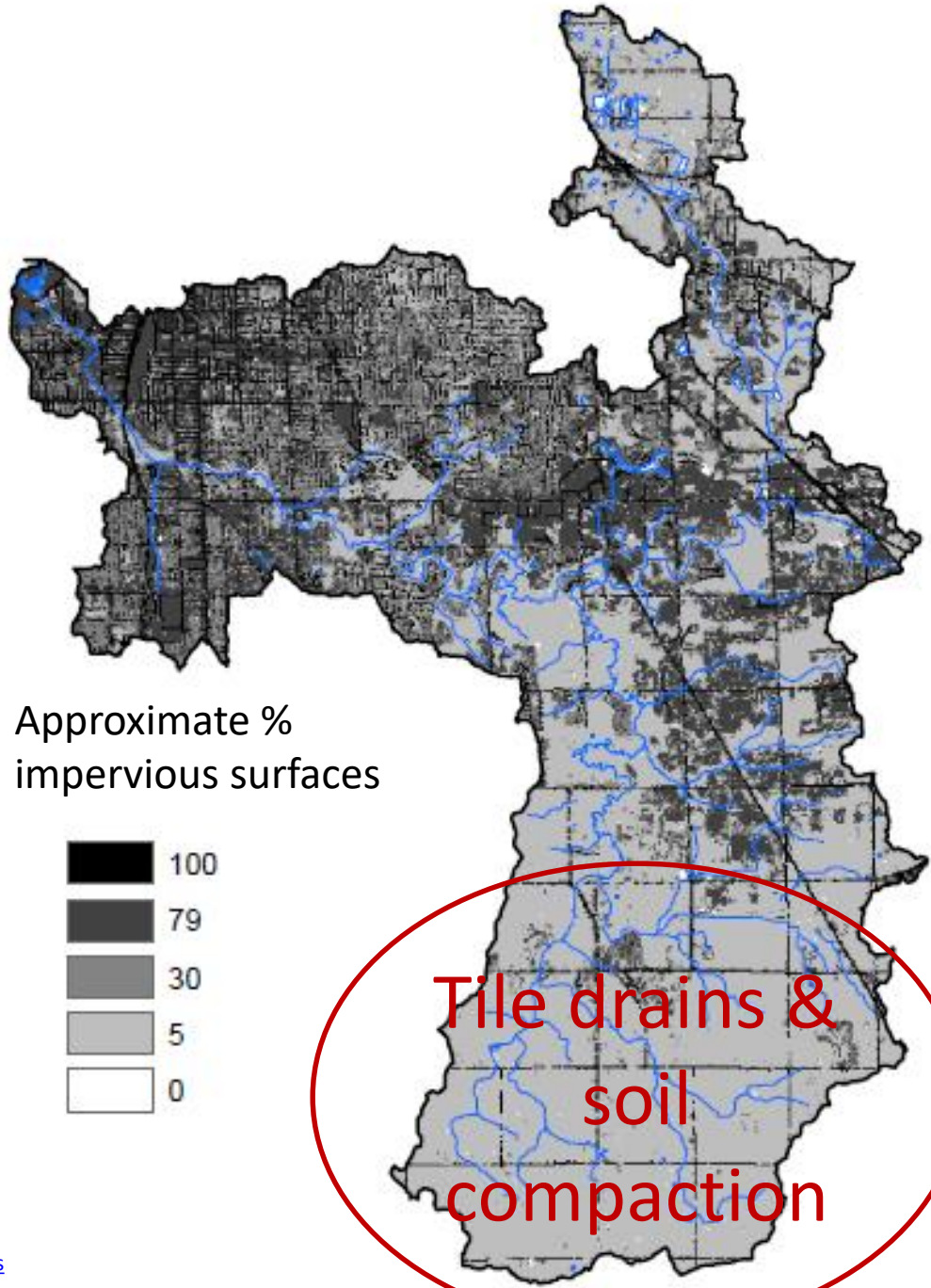
- Sediment load estimate: 180 tons per year



- Caused by:
  - Urban runoff
  - Agricultural runoff
  - Construction
  - Stream bank erosion

Why does the creek flood so badly?

http://esciencenews.com/articles/2010/09/27/tile.drainage.directly.related.nitrate.loss



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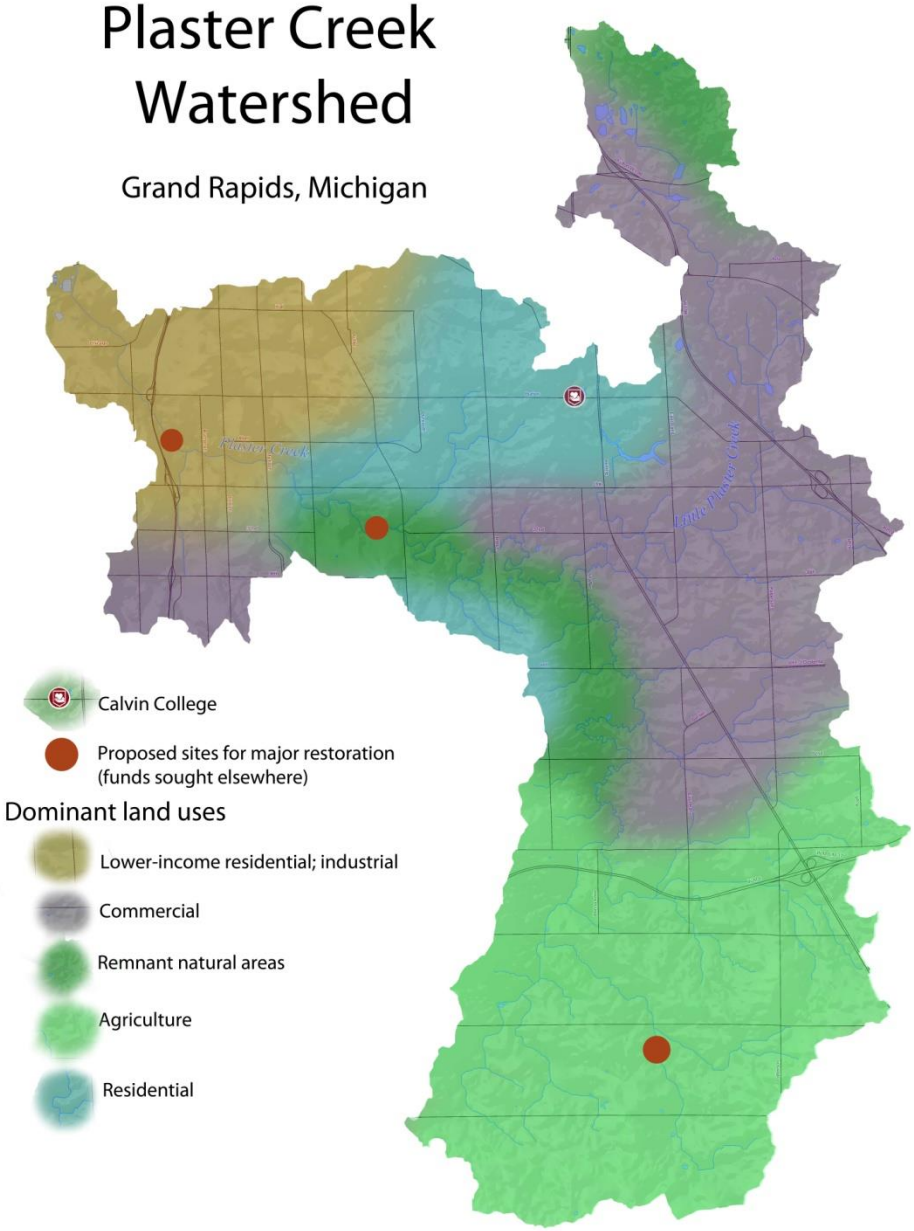

Cartographer: Seth Kenbeek
Image prepared by Nathan Haan

Two work opportunities

Native stream-side planting at Roosevelt Park

Garlic mustard pull at Ken-O-Sha park