



**Fighting for the
watershed in the
absence of an
enemy:
shifting the way we
think about rain**

**Plaster Creek Stewards
Spring Event
April 18, 2015**

**Gail Heffner
Andrea Lubberts
Mike Ryskamp
Dave Warners**

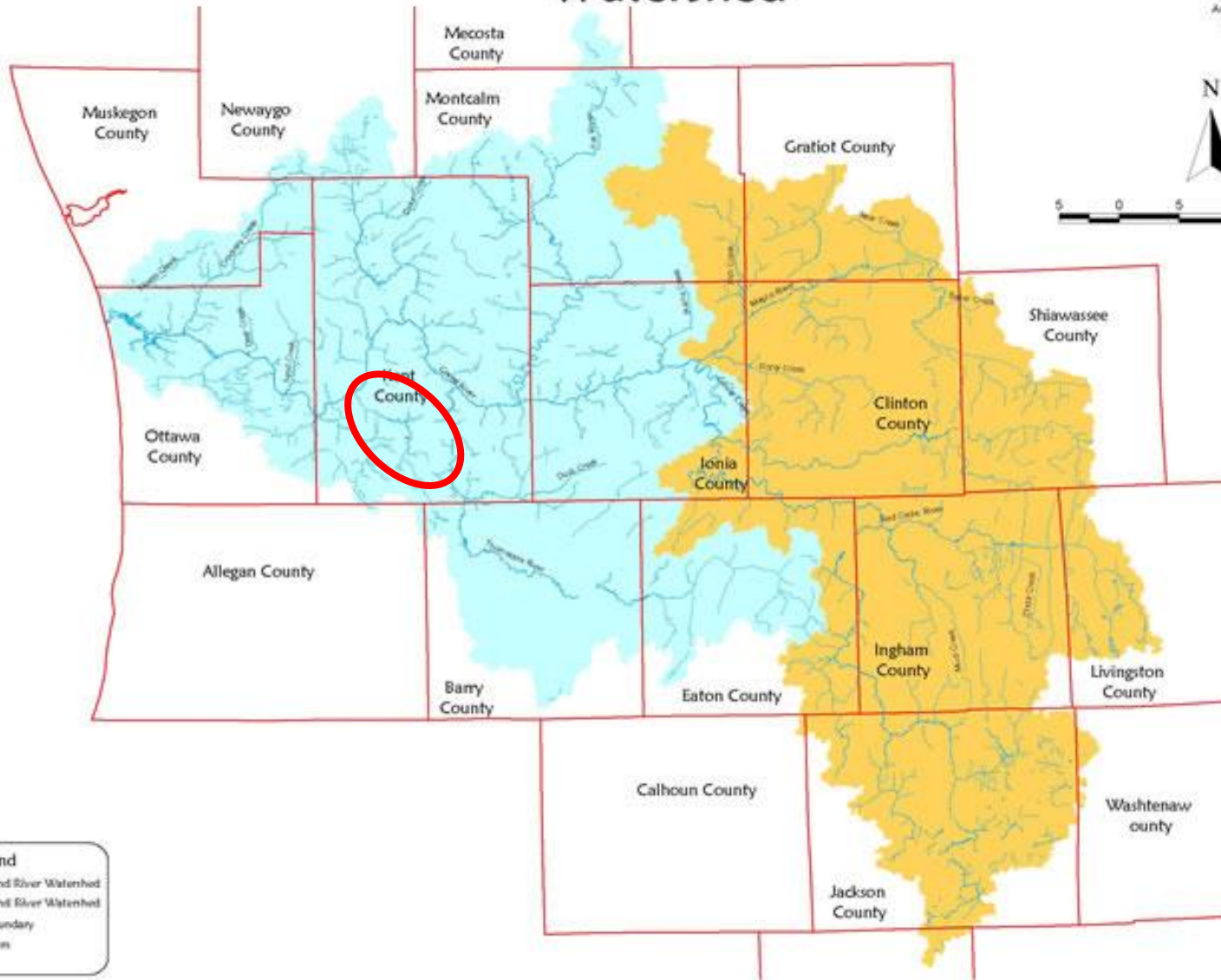


Lower Grand River Watershed Project

Lower Grand River and Upper Grand River Watershed

Base Information
Michigan Center For Geographic Information
Michigan Geographic Data Library

Grand Valley State University
Annis Water Resources Institute
Information Services Center



Legend

- Lower Grand River Watershed
- Upper Grand River Watershed
- County Boundary
- River/Stream

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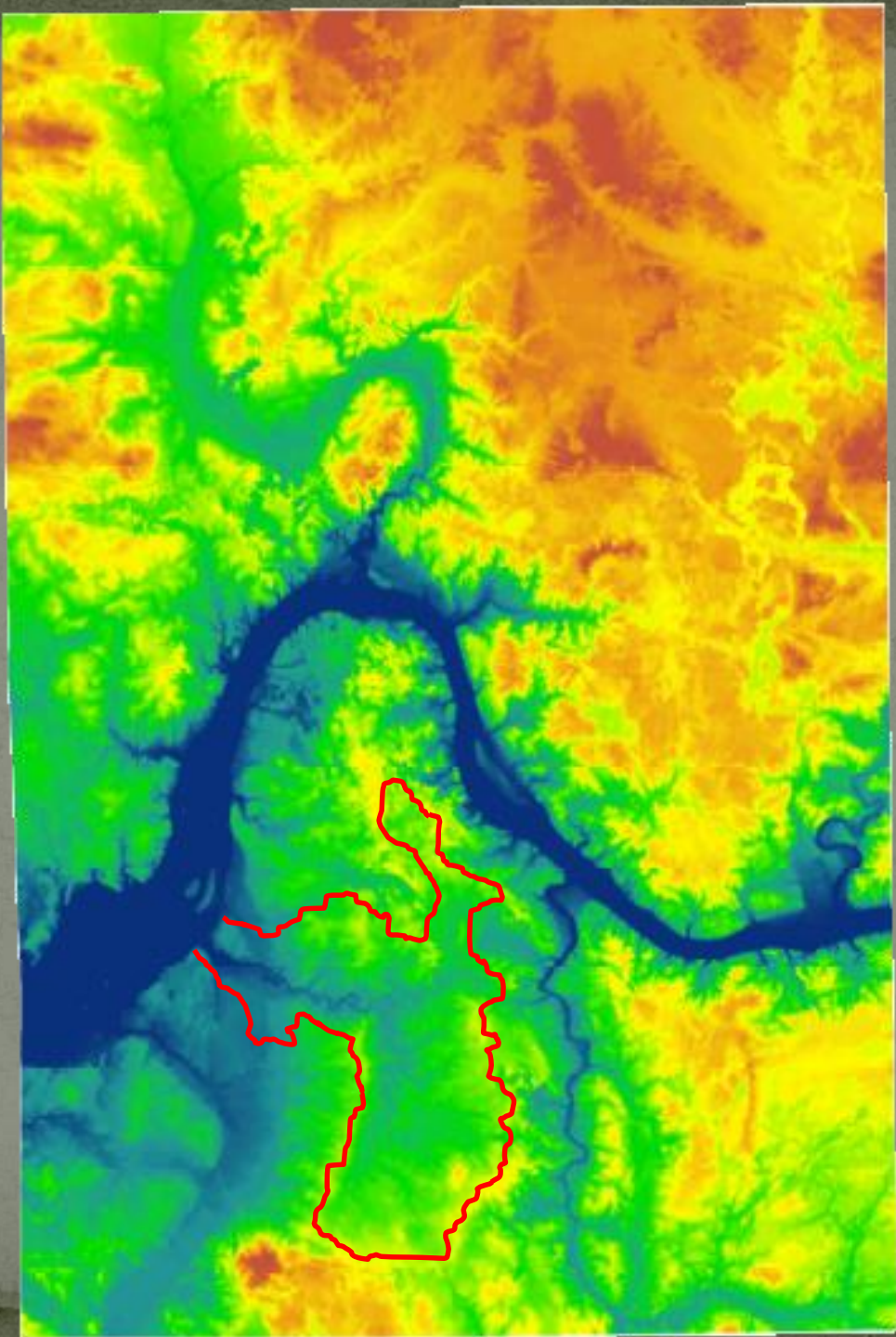
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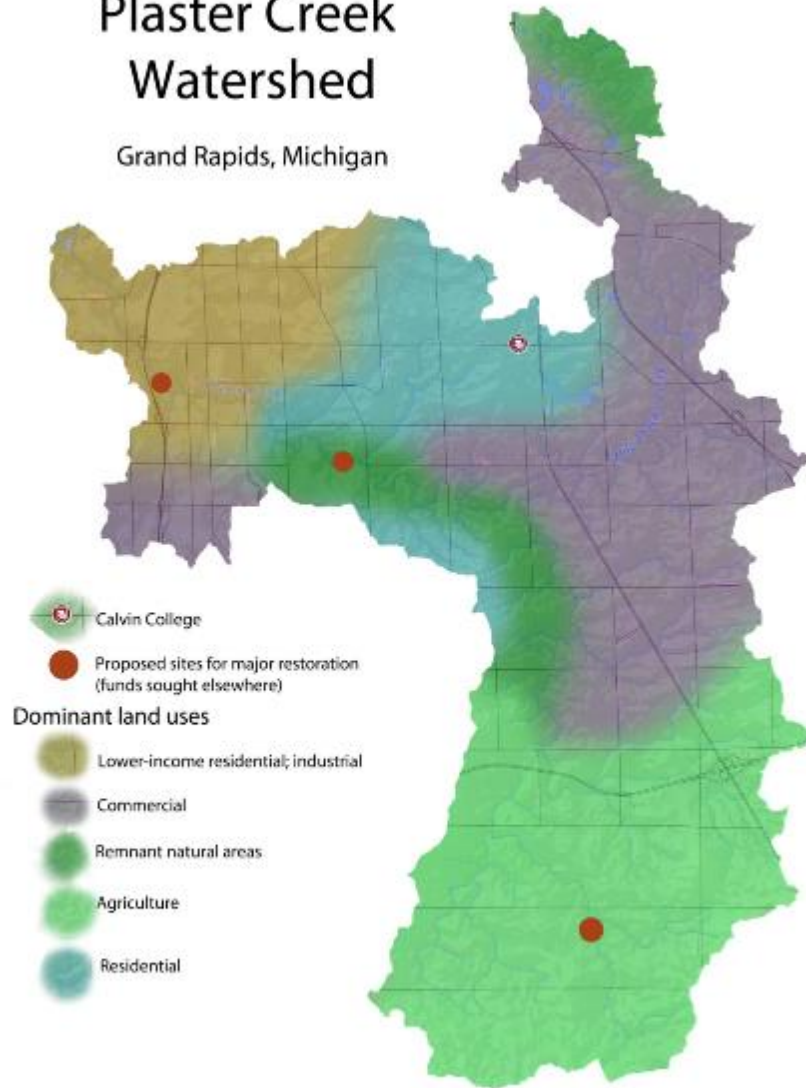


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Plaster Creek Watershed

Grand Rapids, Michigan



Cartographer: Seth Kenbeek
Image prepared by Nathan Haan

Background statistics:

- Length: approx. 14 miles
- Watershed area: 58 mi²
- Governmental units: 9 (4 municipalities & 5 townships)
- >50% of Calvin fac. and staff
- More than 100 schools
- More than 170 religious communities

Plaster Creek Stewards: 3 goals

- Education/ Outreach
- Research
- Restoration



The challenge (and our work) continues...

- Michigan Department of Environmental Quality (MDEQ) 2013-2015 is completed.
 - *Education*— work with schools, churches, township officials, farmers, neighborhood associations
 - *Research*— Creek Flow, GIS, Urban Birds
 - *Restoration*— Kreiser Pond, Mel Trotter, Calvin Bioswale

The challenge (and our work) continues...

- Michigan Department of Environmental Quality (MDEQ) 2015-2017 is beginning
 - *Education*— work with schools, churches, township officials, farmers, neighborhood associations
 - *Research*— Creek Flow, GIS, water quality
 - *Restoration*— Alger Heights Neighborhood, Calvin Avenue retention pond (Oakdale), Shadyside Park (Dutton)

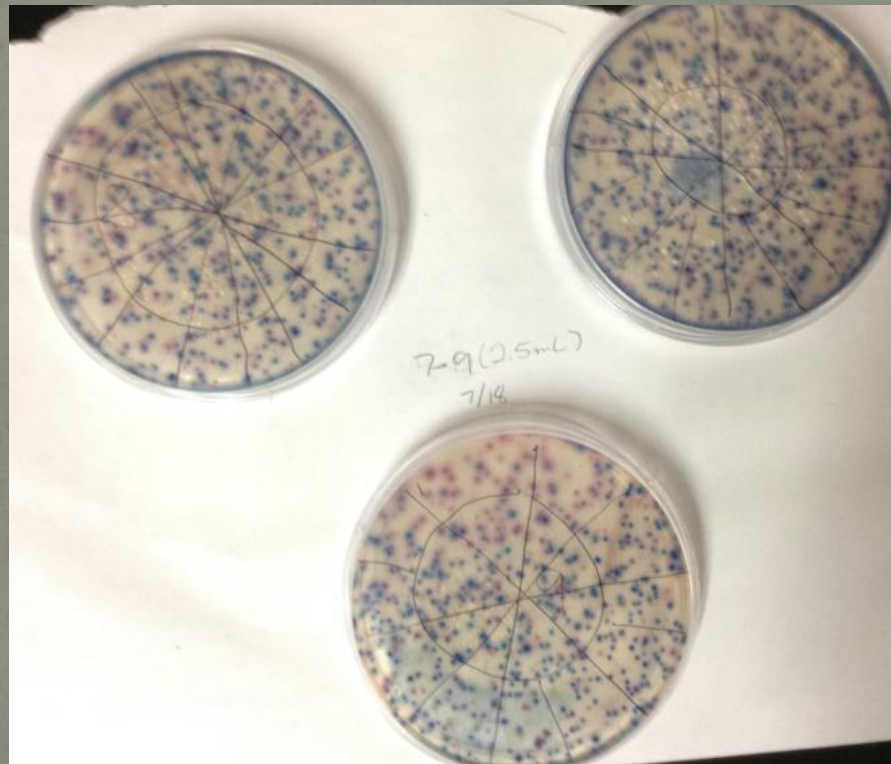
EPA Urban Waters Small Grant (2014-2016)

- Green Team in Plaster Creek and Rogue River Watersheds



Water Quality Monitoring Grant (2015-2017)

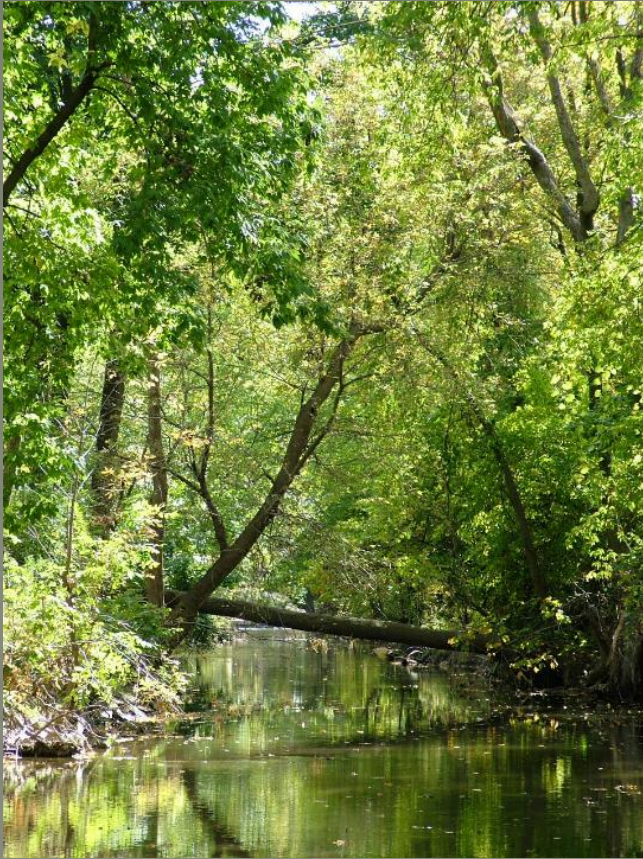
- Study sources of bacterial contamination in tributaries and main channel of Plaster Creek



CEAP Poster Session

May 7 at 3:30 in Bytwerk Theater, DeVos
Center

- Research findings from student projects in Biology 250
(Plaster Creek has been the laboratory



Find us on the web: ww.calvin.edu/go/plastercreekstewards

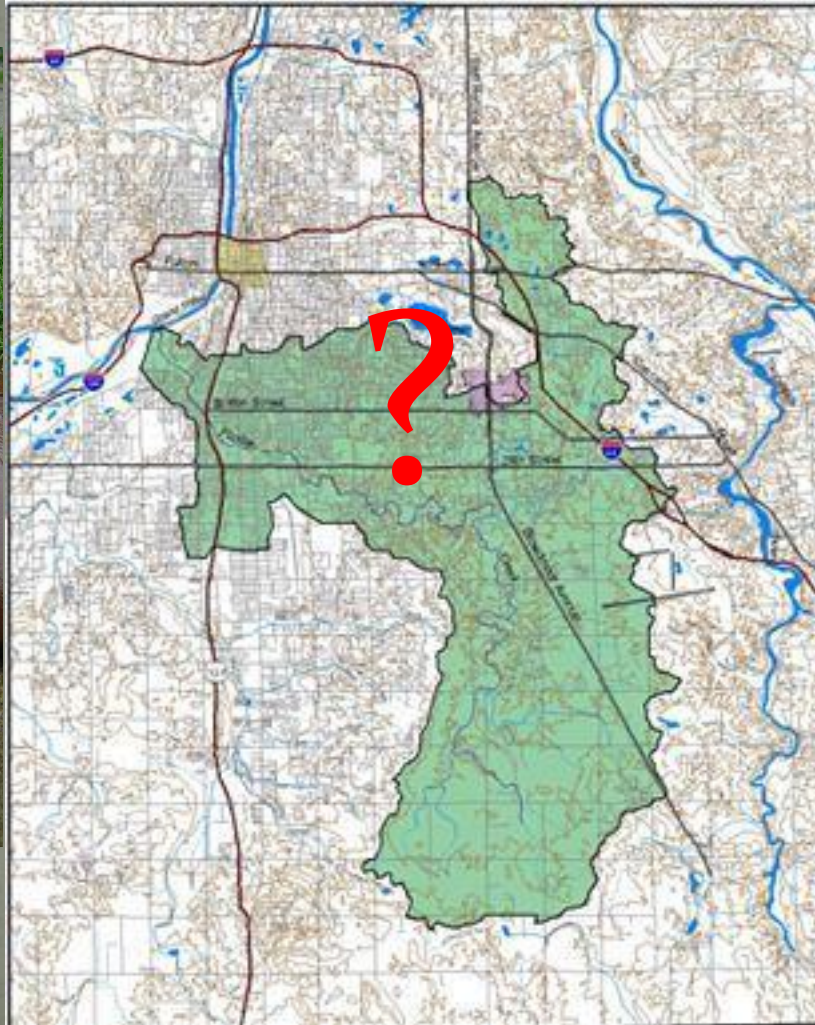
OR

“Like” us on Facebook under Plaster Creek Stewards

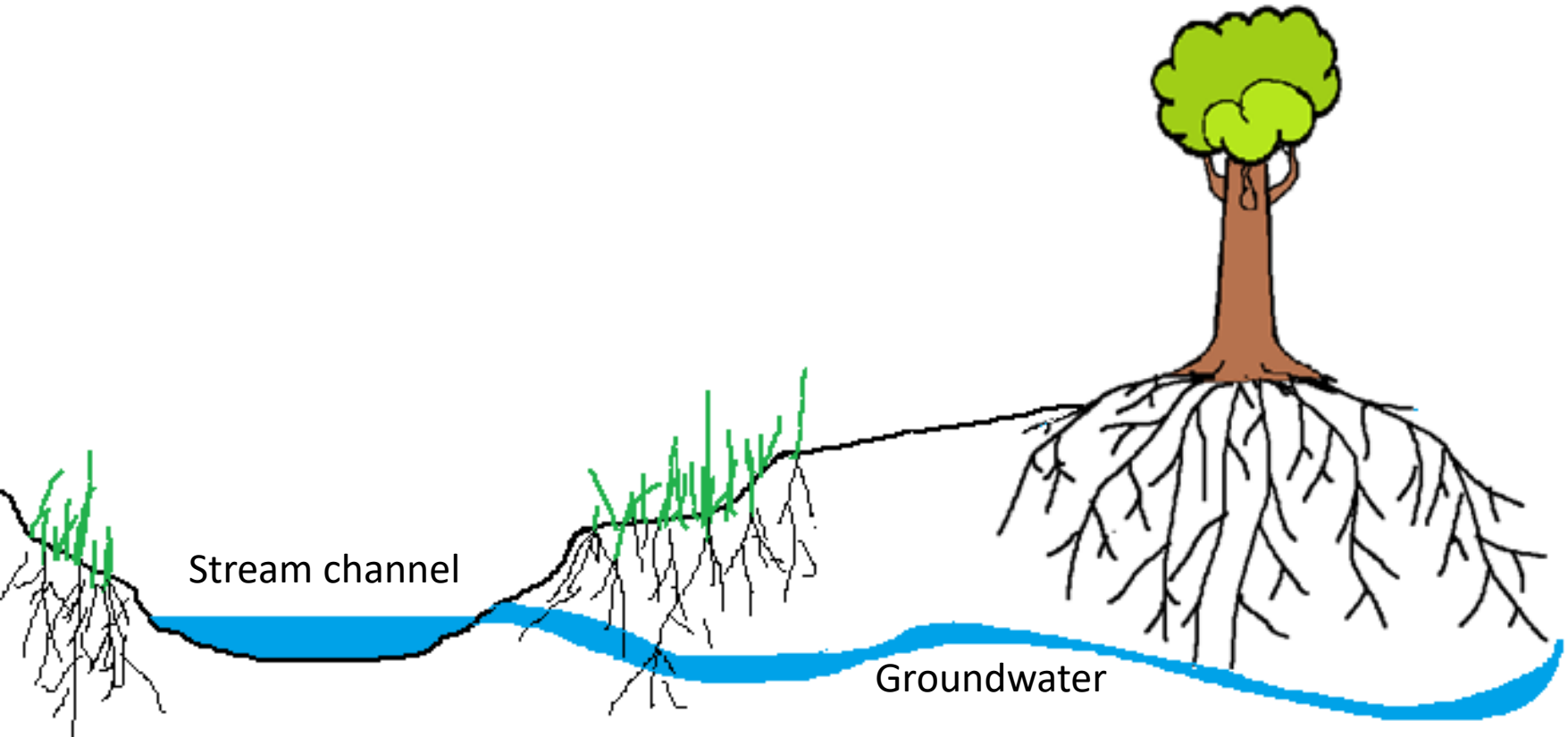
Modern Environmentalism: Fightin' the green fight



So, what are fighting in the Plaster Creek watershed?
Who are we fighting?

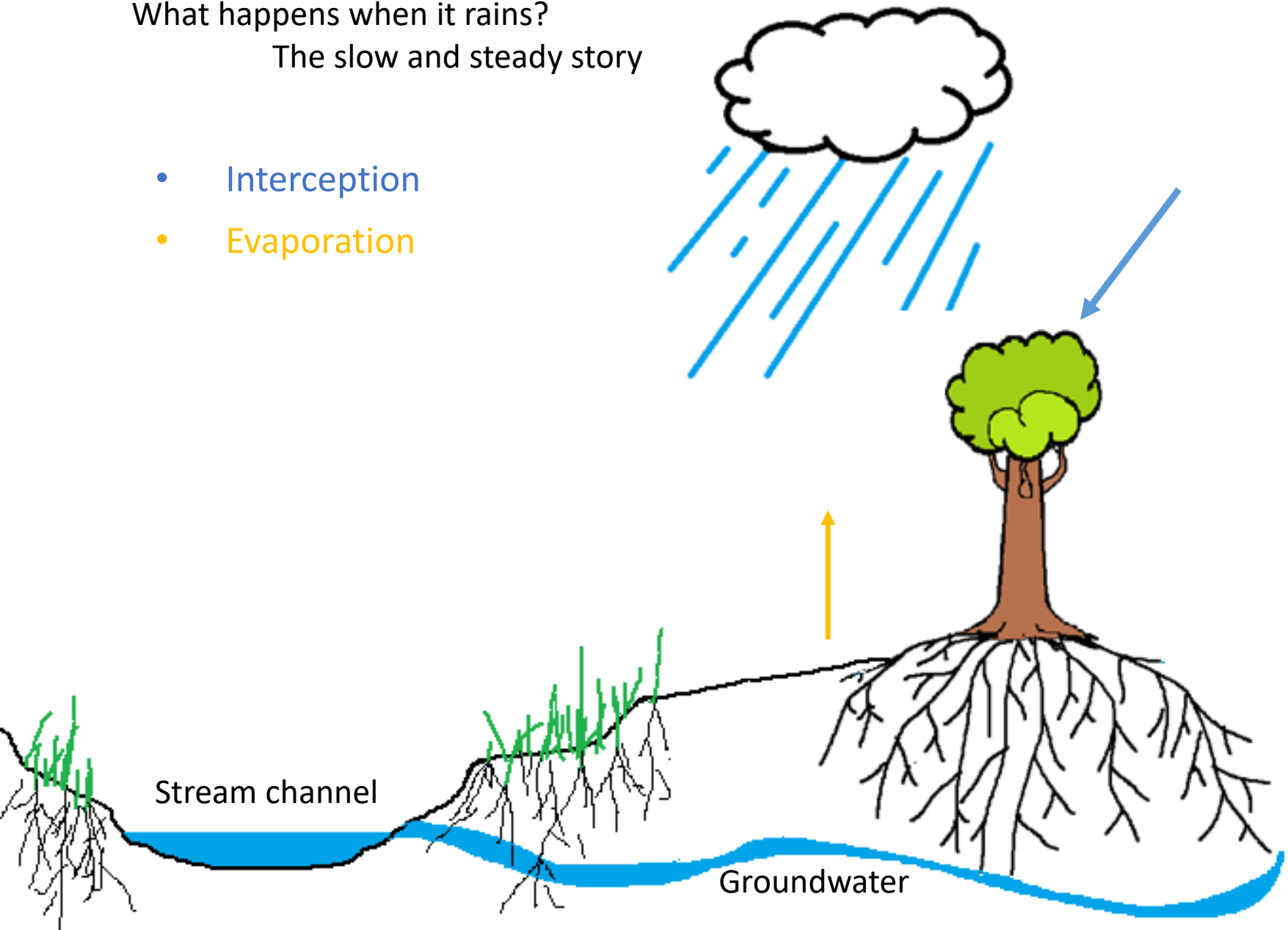


Two different stormwater stories....



What happens when it rains?
The slow and steady story

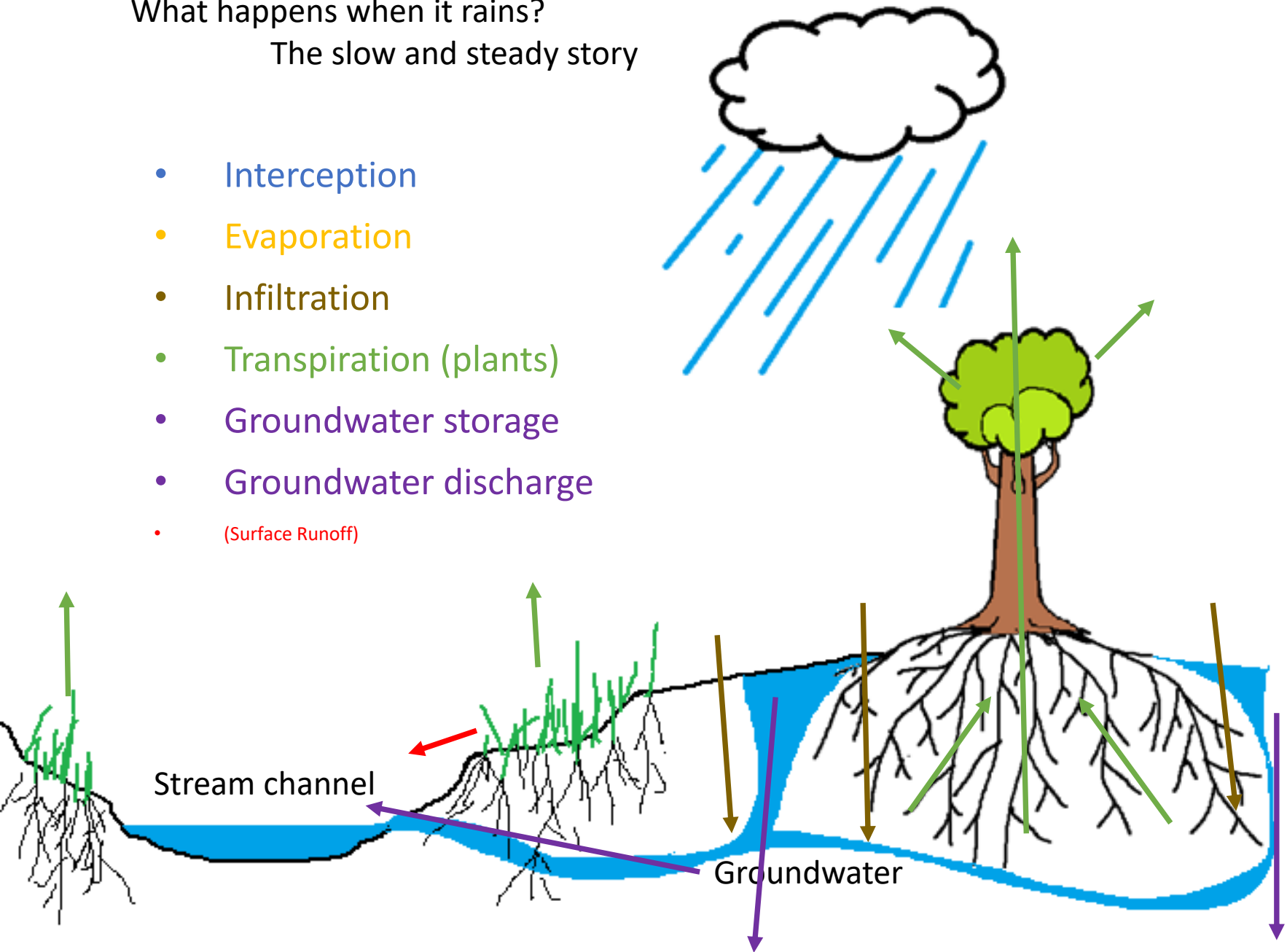
- Interception
- Evaporation



What happens when it rains?

The slow and steady story

- Interception
- Evaporation
- Infiltration
- Transpiration (plants)
- Groundwater storage
- Groundwater discharge
- (Surface Runoff)



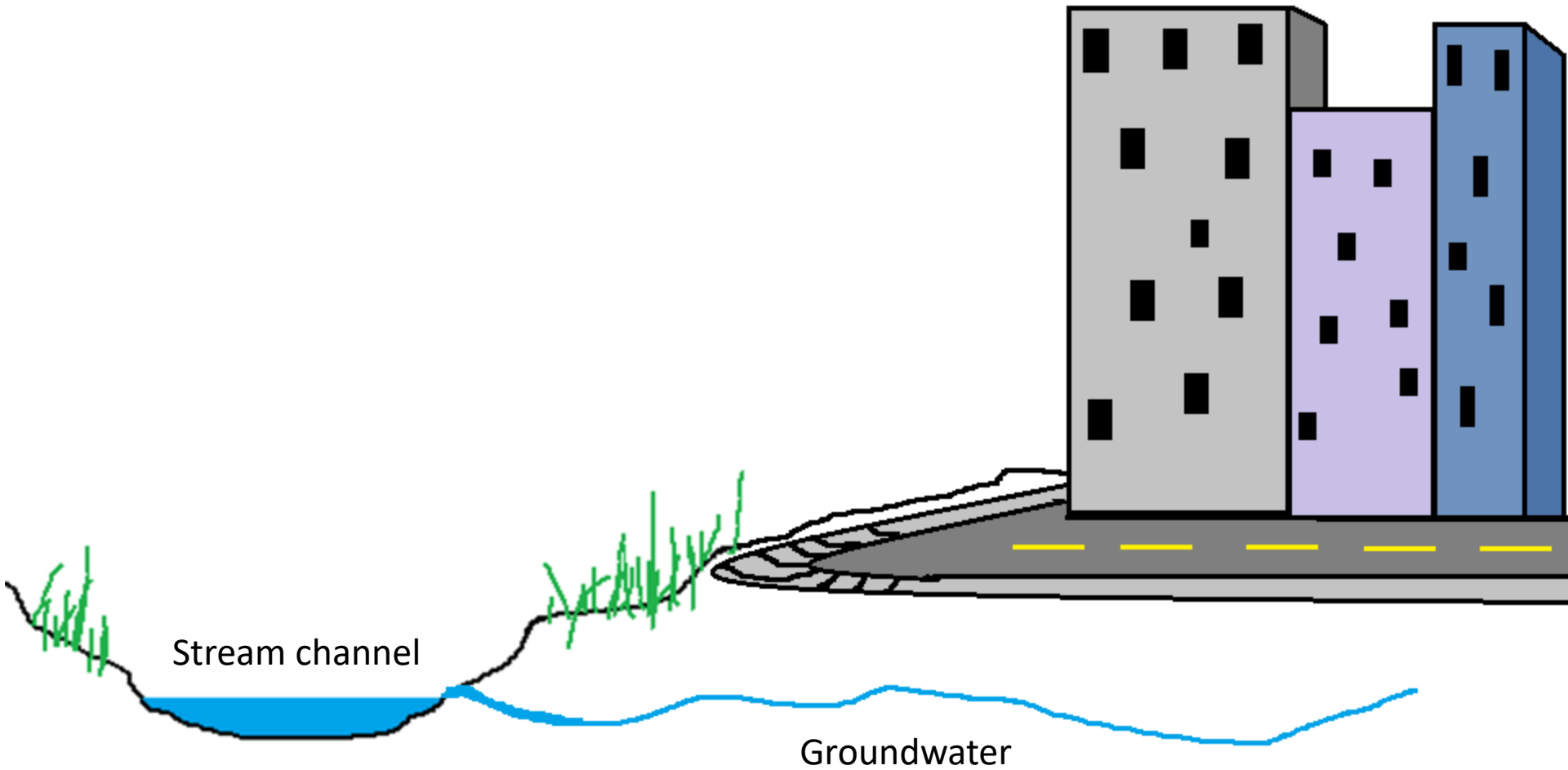
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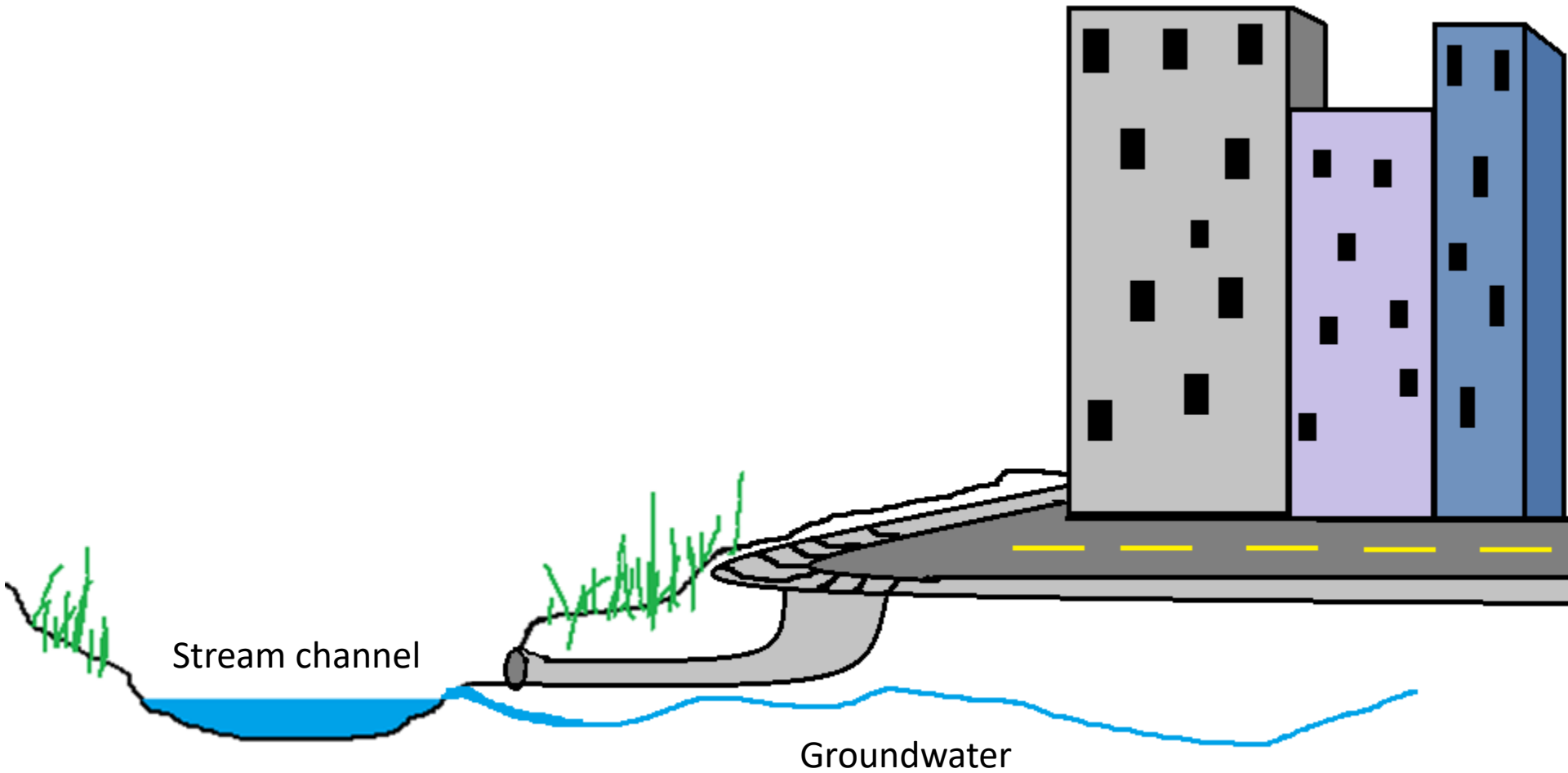
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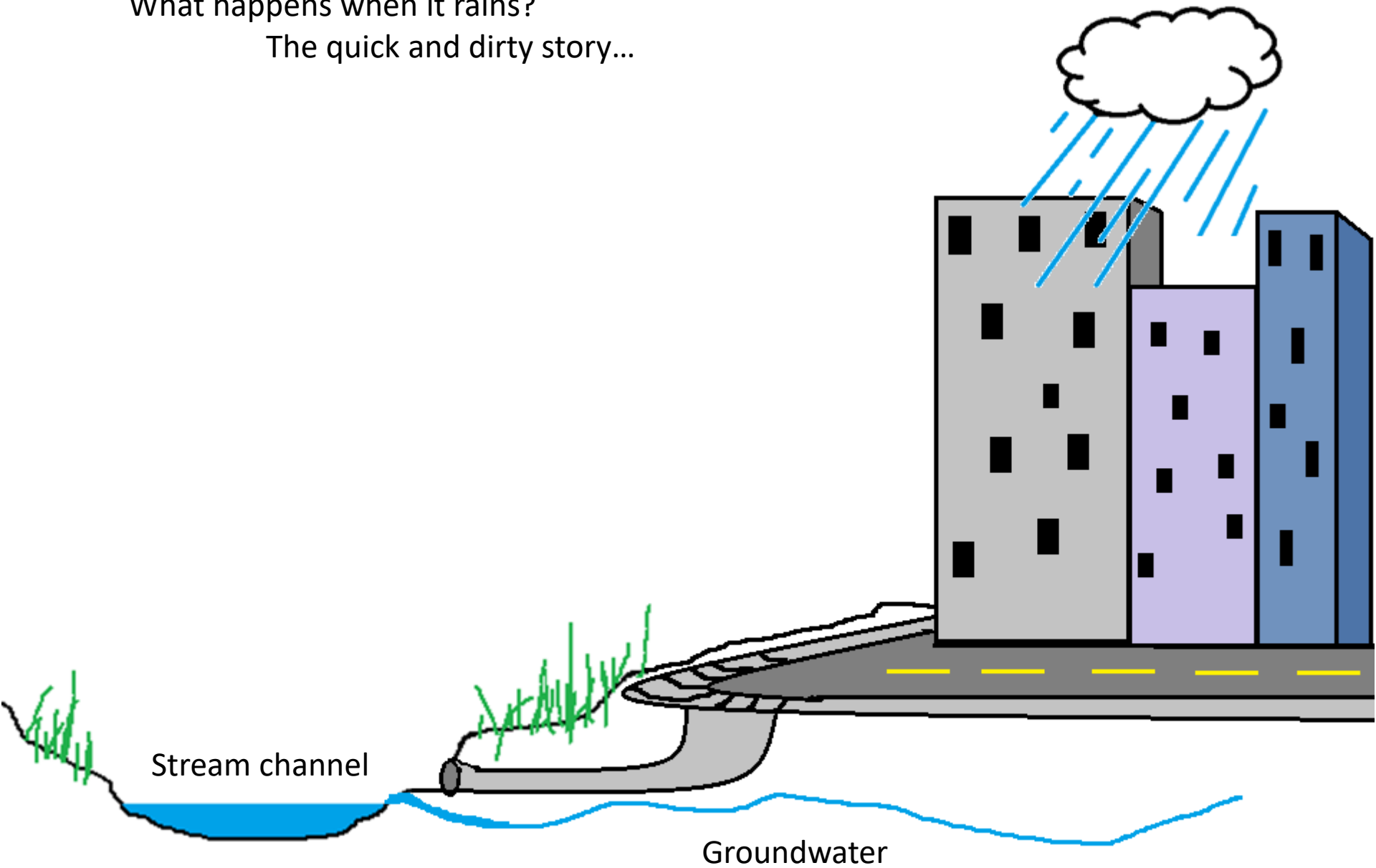
What happens when it rains?
The quick and dirty story...



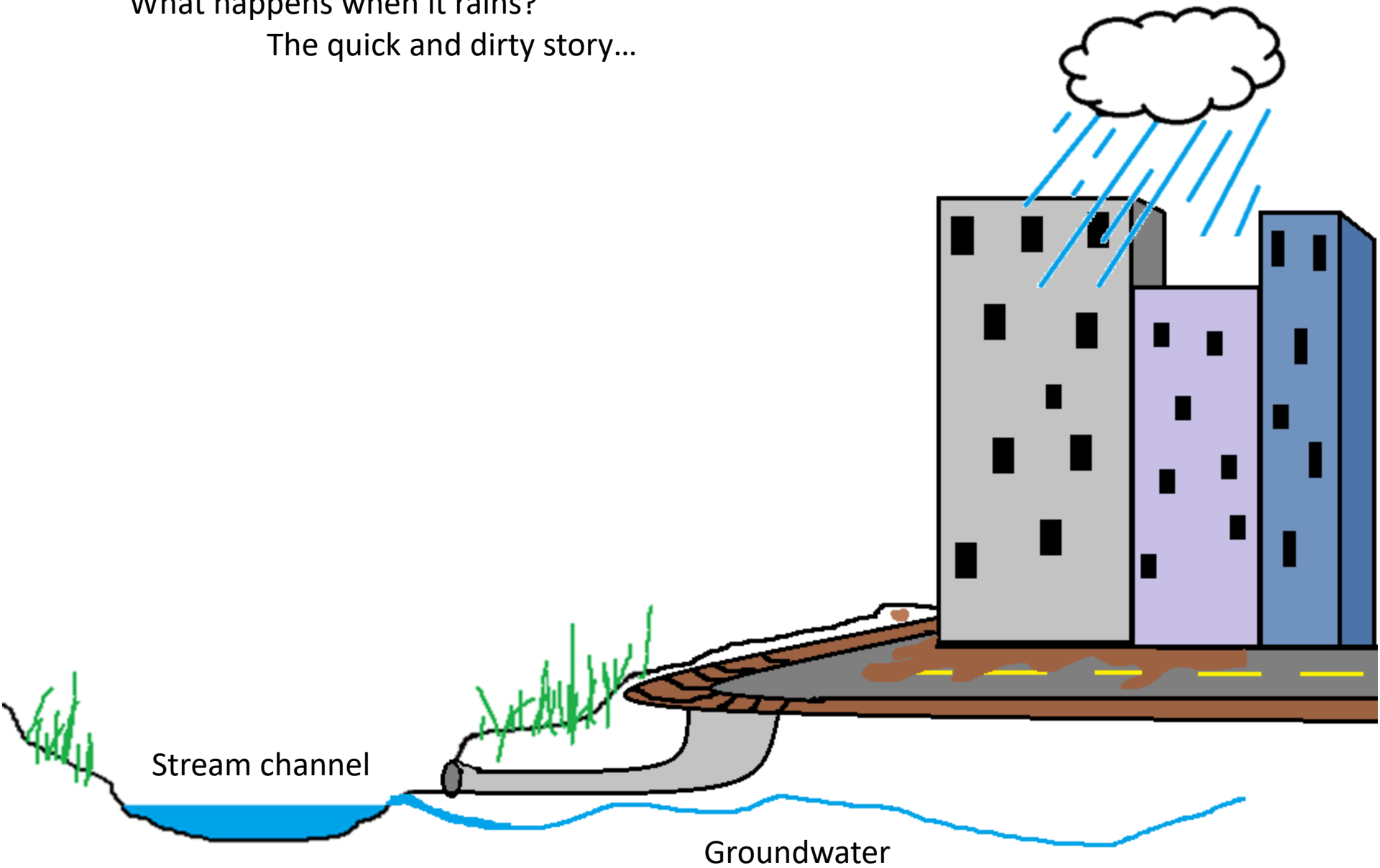
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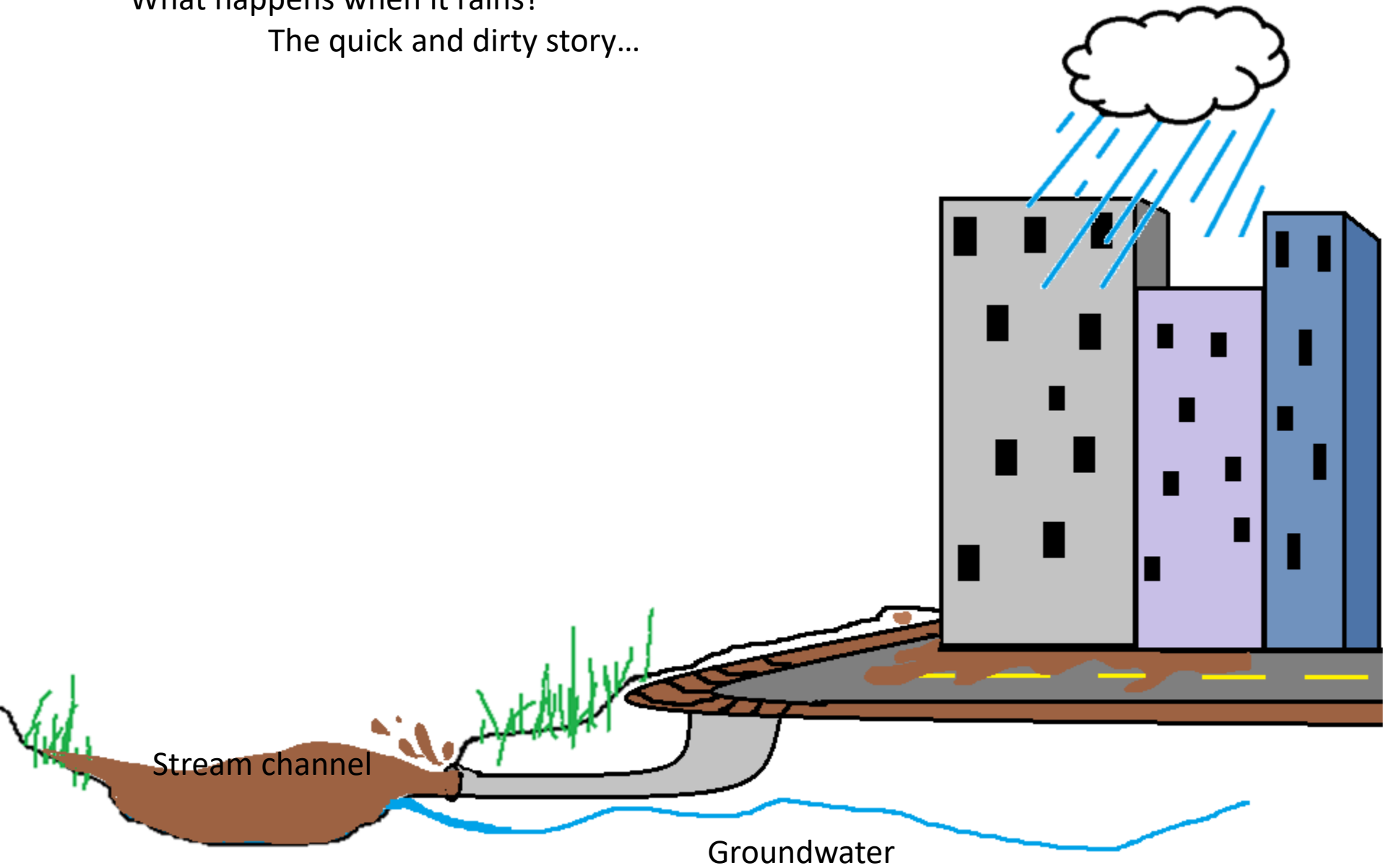
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What happens when it rains?
The quick and dirty story...



Paradigm

a framework of thought shared by
members of a
particular group

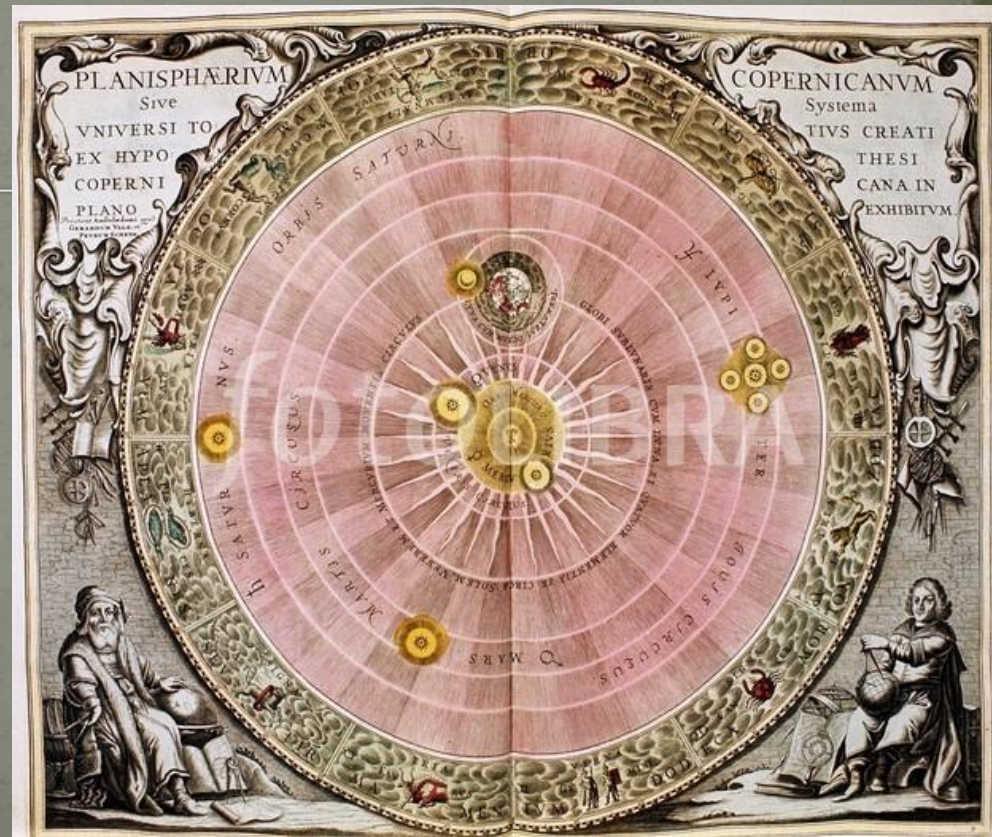
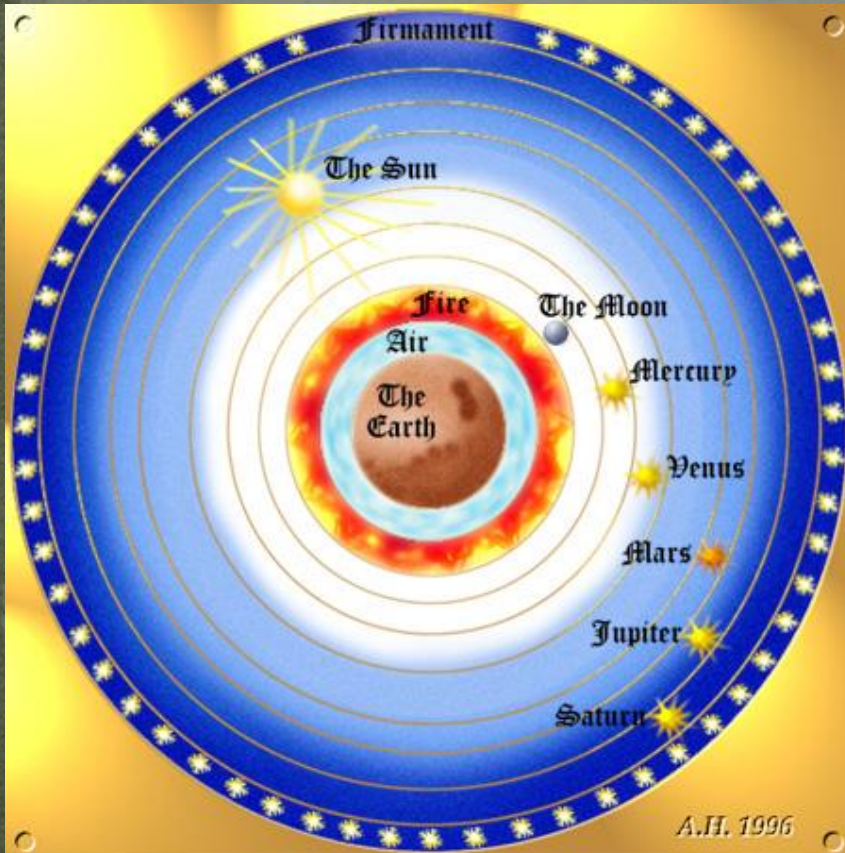


Attributes of Paradigms

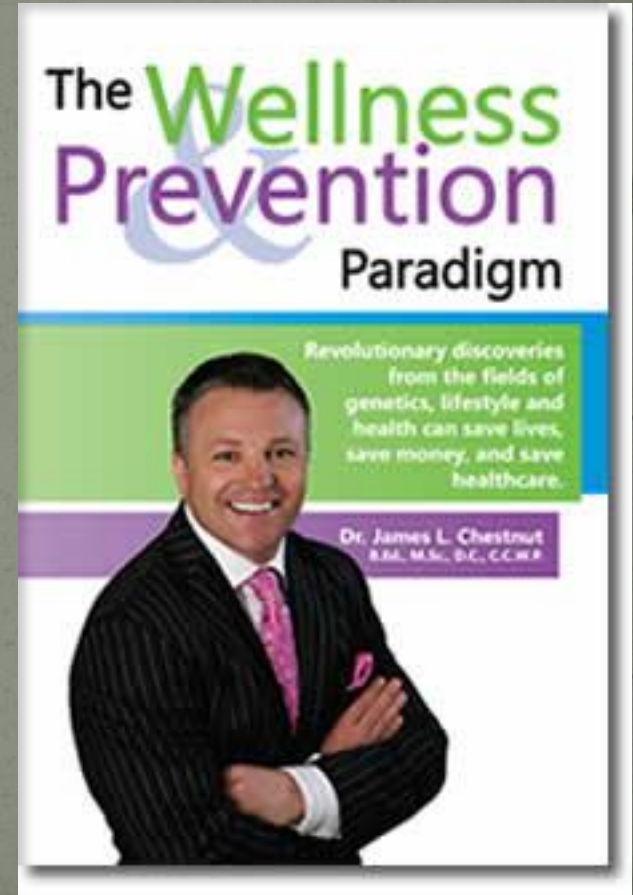
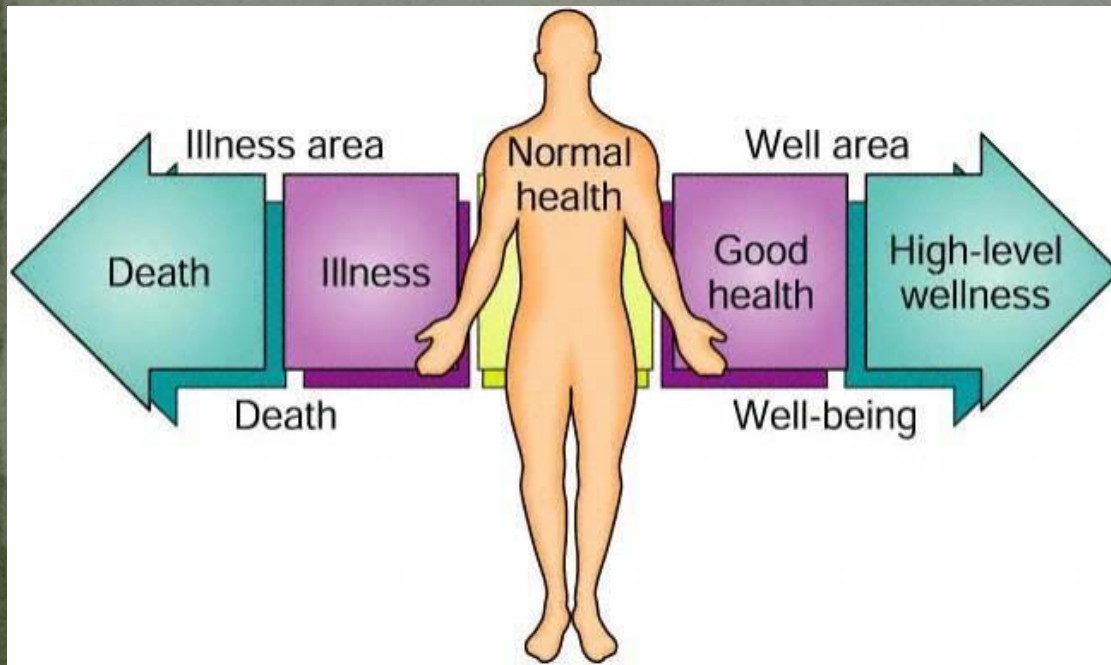
- Its hard to recognize you are in one
- When you are in one, its hard to think outside of it
- Paradigms will reinforce behaviors and behaviors will reinforce paradigms
- Paradigms can be replaced or they can undergo a shift, but not easily

Examples of Paradigm Shifts

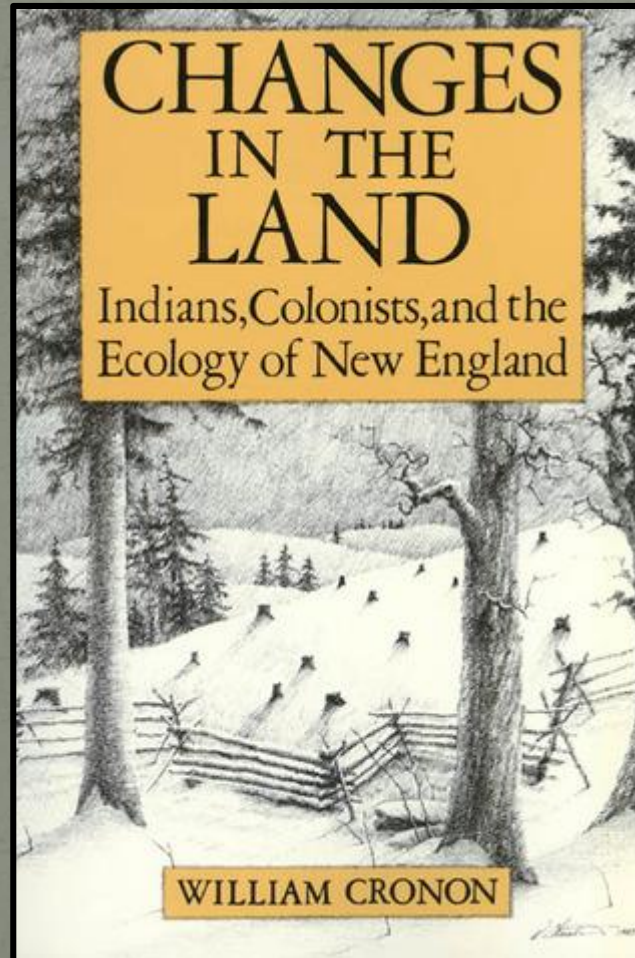
Geocentrism - Heliocentrism



Intervention vs. Wellness



Using Land vs Owning Land (Fitting *in* vs. Imposing *on*)







Planting seeds changes my
feelings about rain.

- Luci Shaw