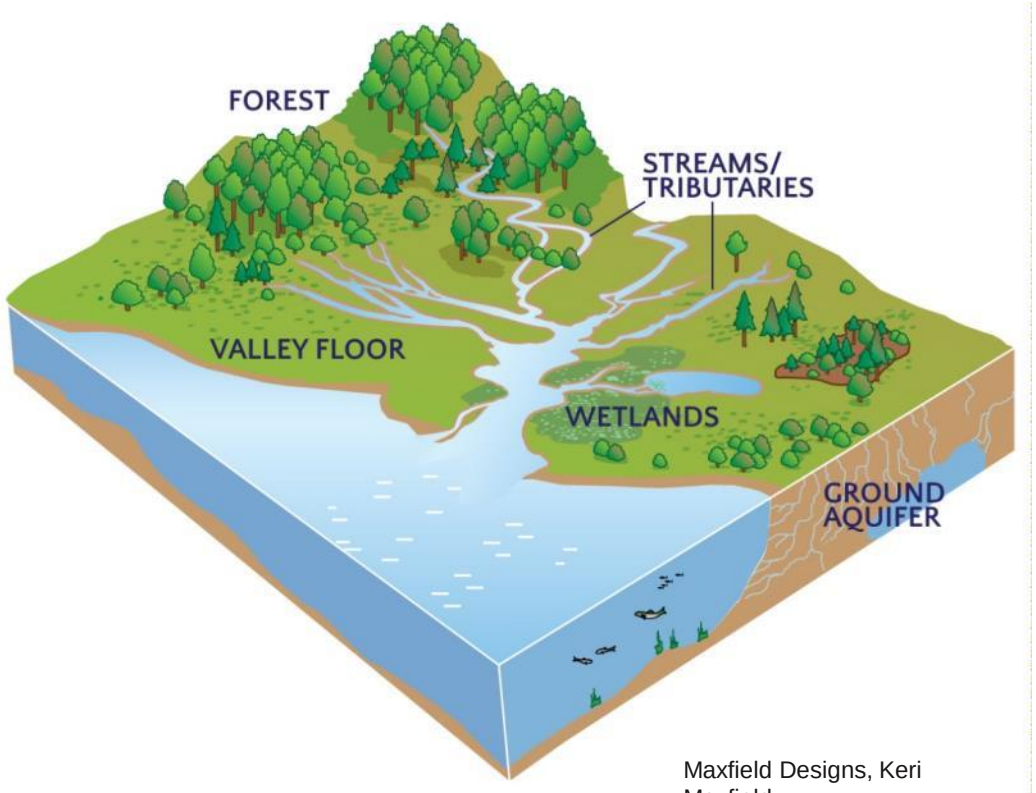
Stormwater Basics

Danielle Rhea, Penn State Extension

PennState Extension

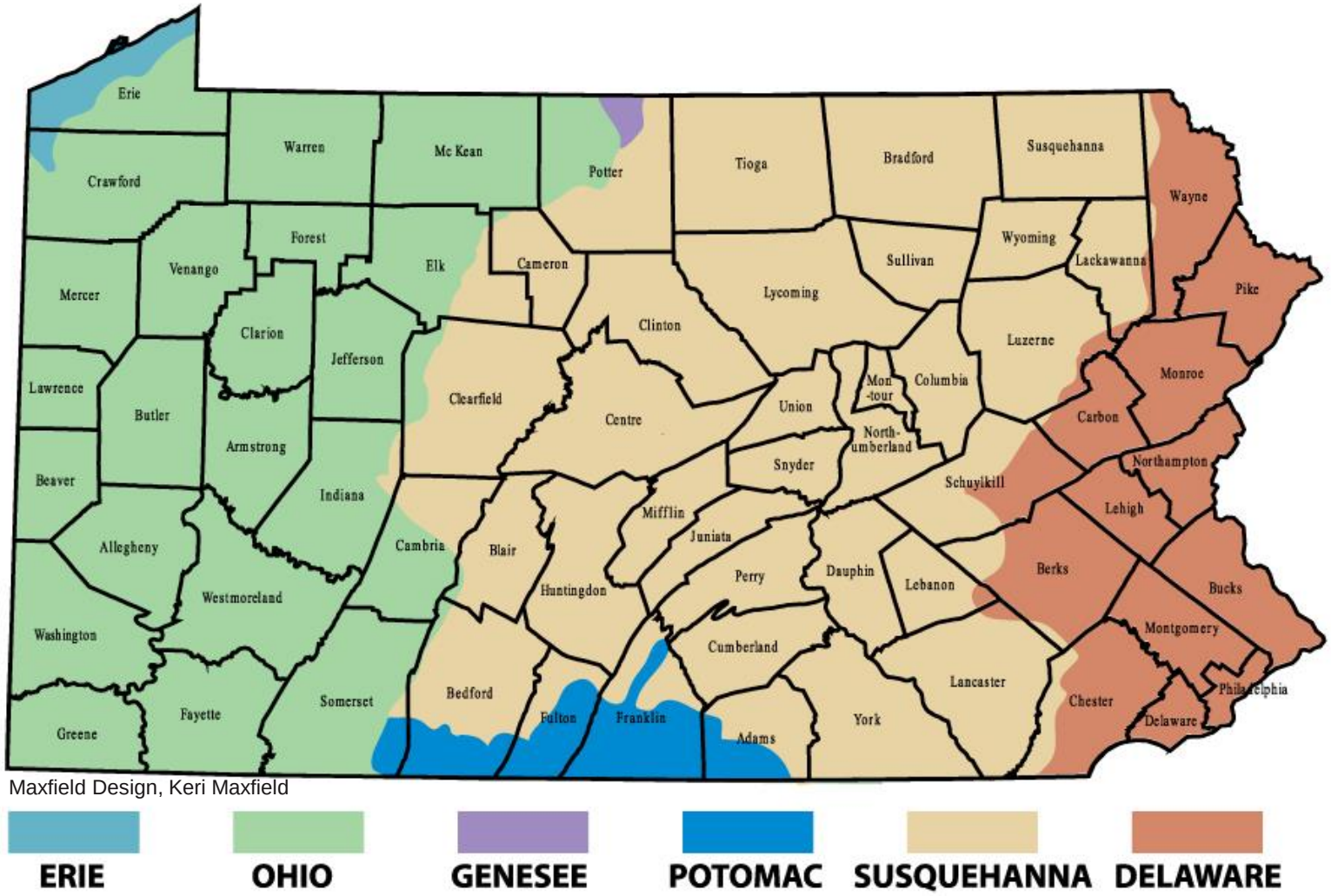
What is a Watershed?

The land area that contributes runoff to a particular point along a waterway.



Maxfield Designs, Keri Maxfield

We all live in a watershed



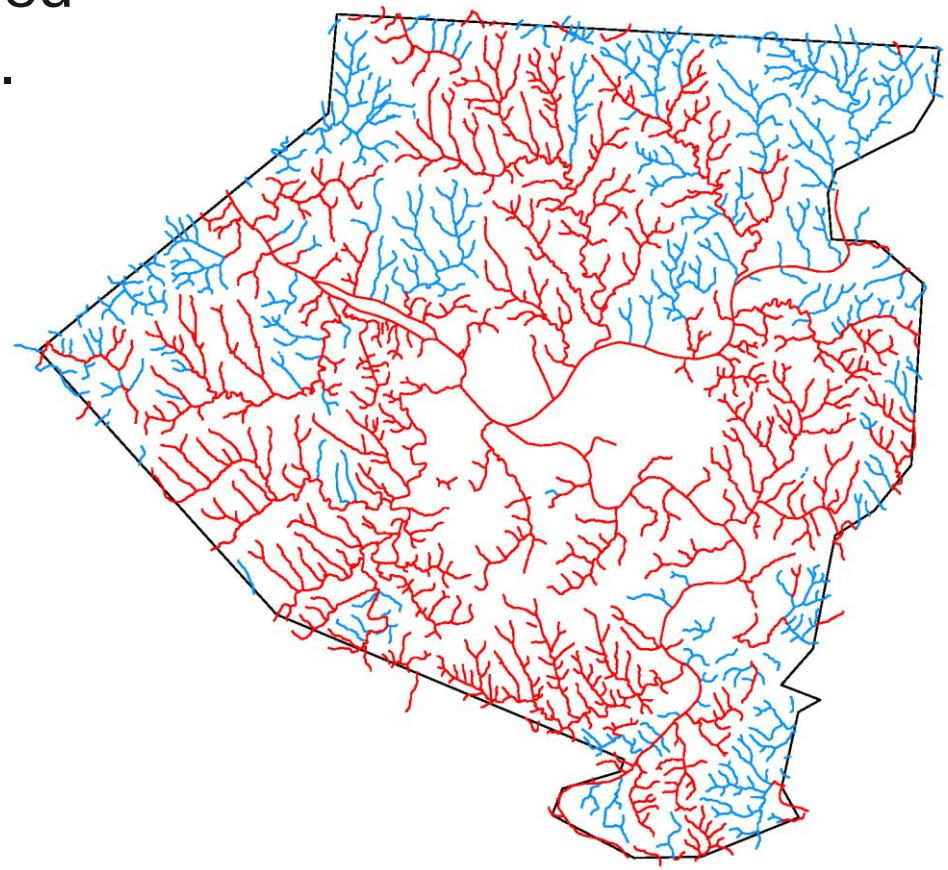
Maxfield Design, Keri Maxfield

ERIE OHIO GENESEE POTOMAC SUSQUEHANNA DELAWARE

What watershed do you live in?

Impaired Streams

The red signifies impaired streams in the counties.



According to the EPA, an impaired stream is:
"…waters that are too polluted or otherwise degraded to meet water quality standards."

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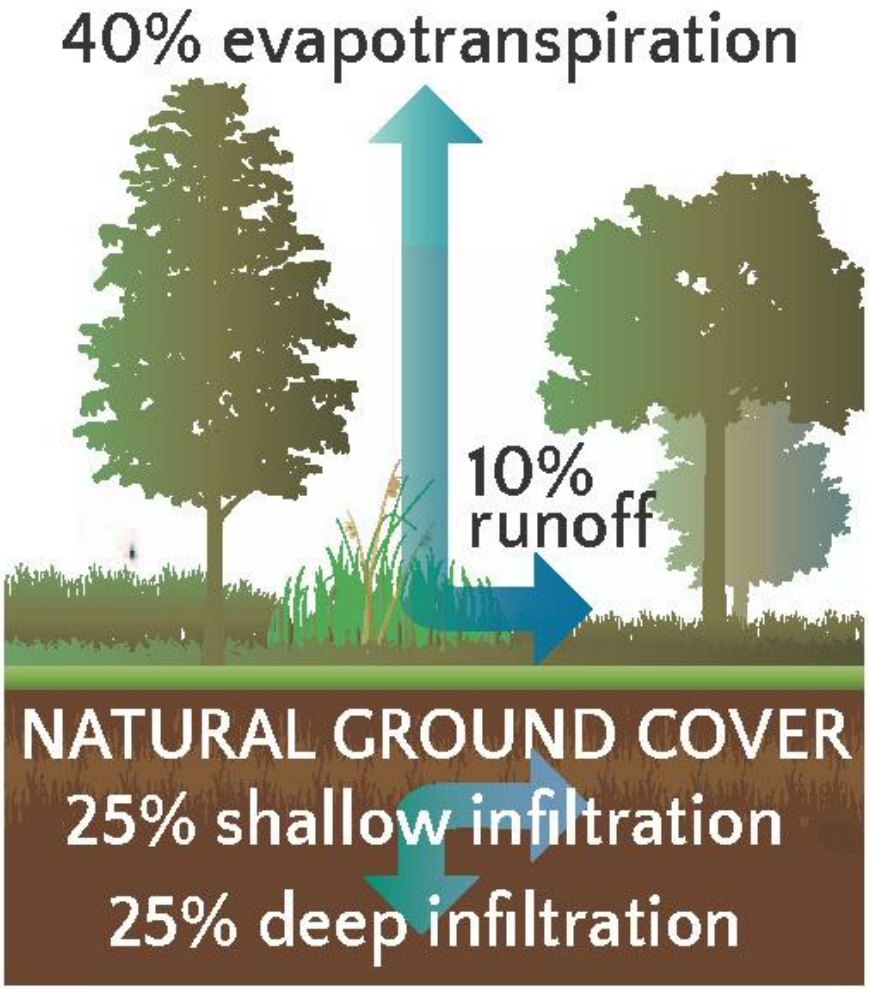

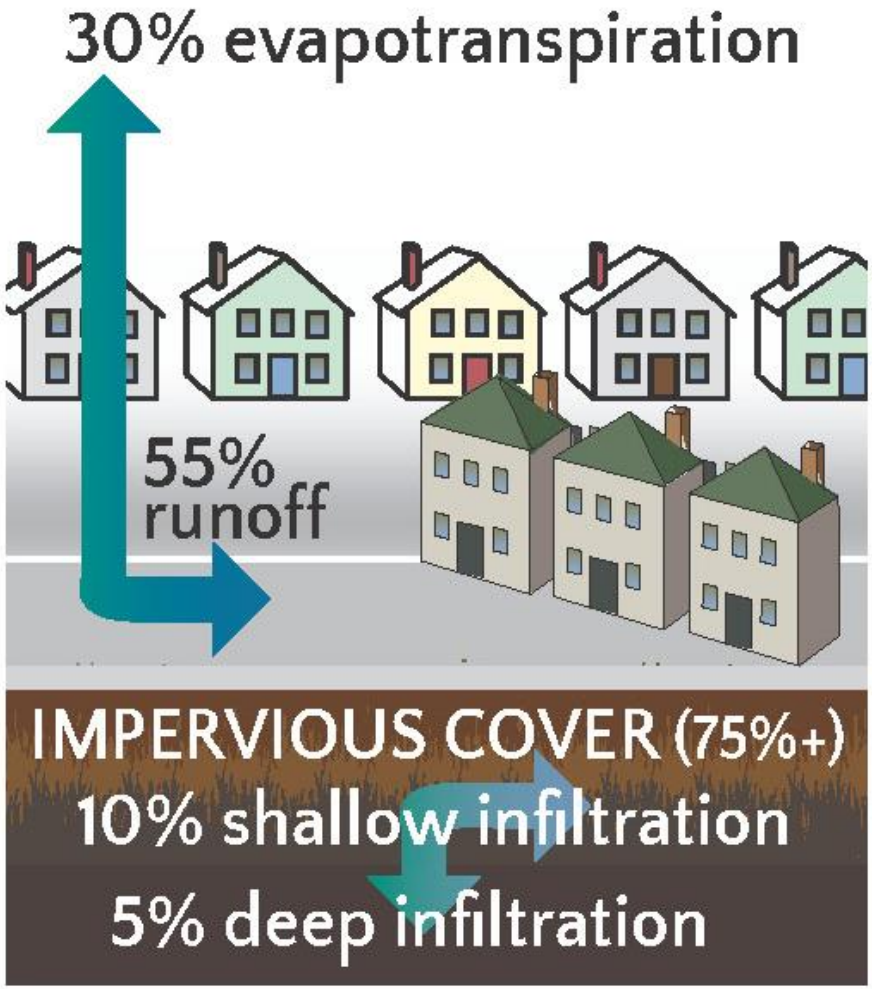

Excess stormwater runoff is a result of impervious surfaces

Historic Approach to Stormwater Management

Move water off the site as quickly as possible!

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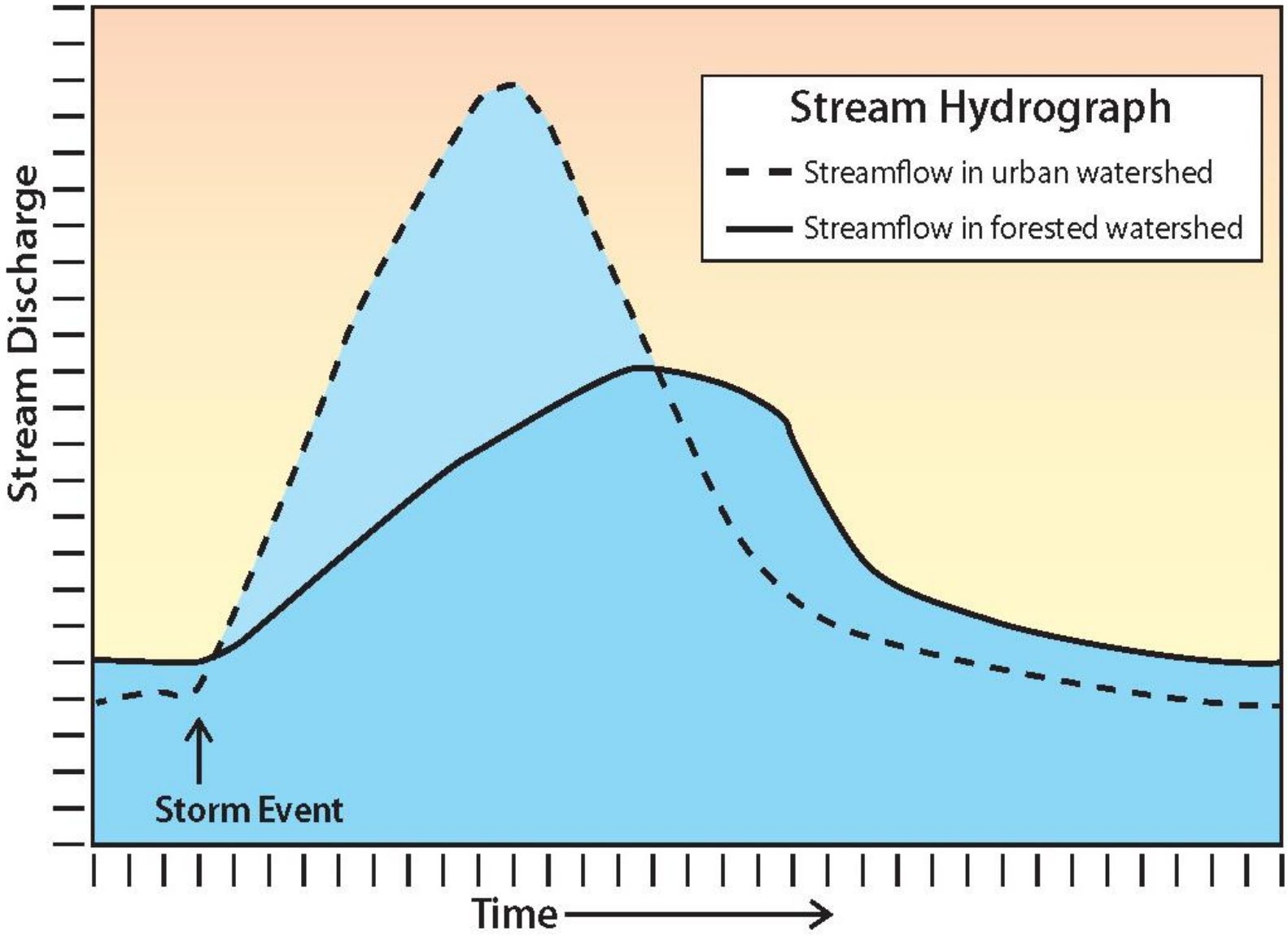
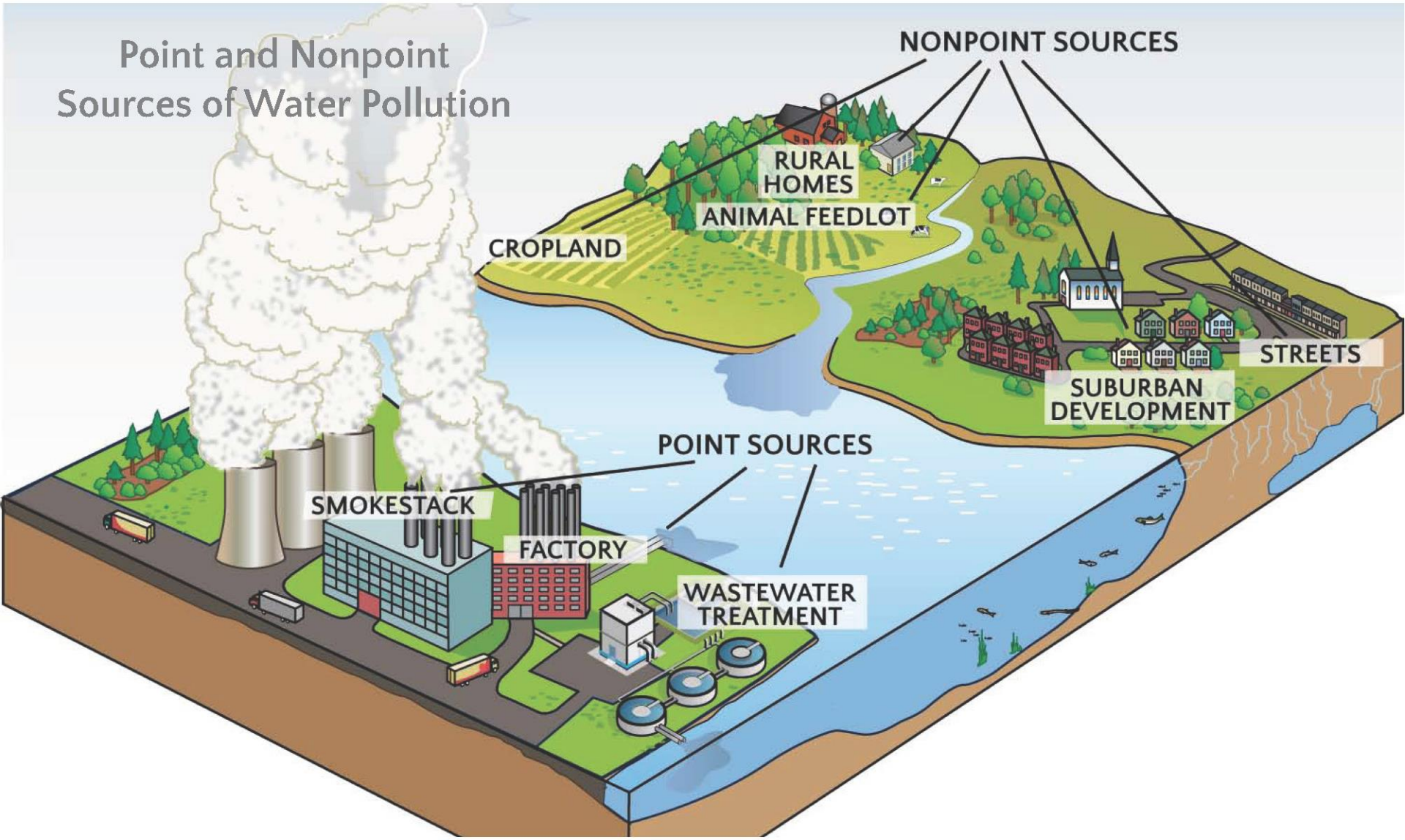
Jenn Fetter, Penn State

Jenn Fetter, Penn State


Stream Hydrograph
Streamflow in urban watershed
Streamflow in forested watershed
Stream Discharge
Storm Event
Time



Stormwater runoff transports nonpoint sources of pollution to our waterways

Stormwater is the primary pathway of pollutants entering our local waterways.

Stormwater Impacts

- Flash Flooding
- Pollution
- Threats to Human Health
- Stream Bank Erosion
- Sedimentation in Stream Beds
- Loss of Groundwater Recharge
- Costly water treatment

Why Does My Community Flood More Than it Used to?

Stormwater Basics Education Series

PennState Extension

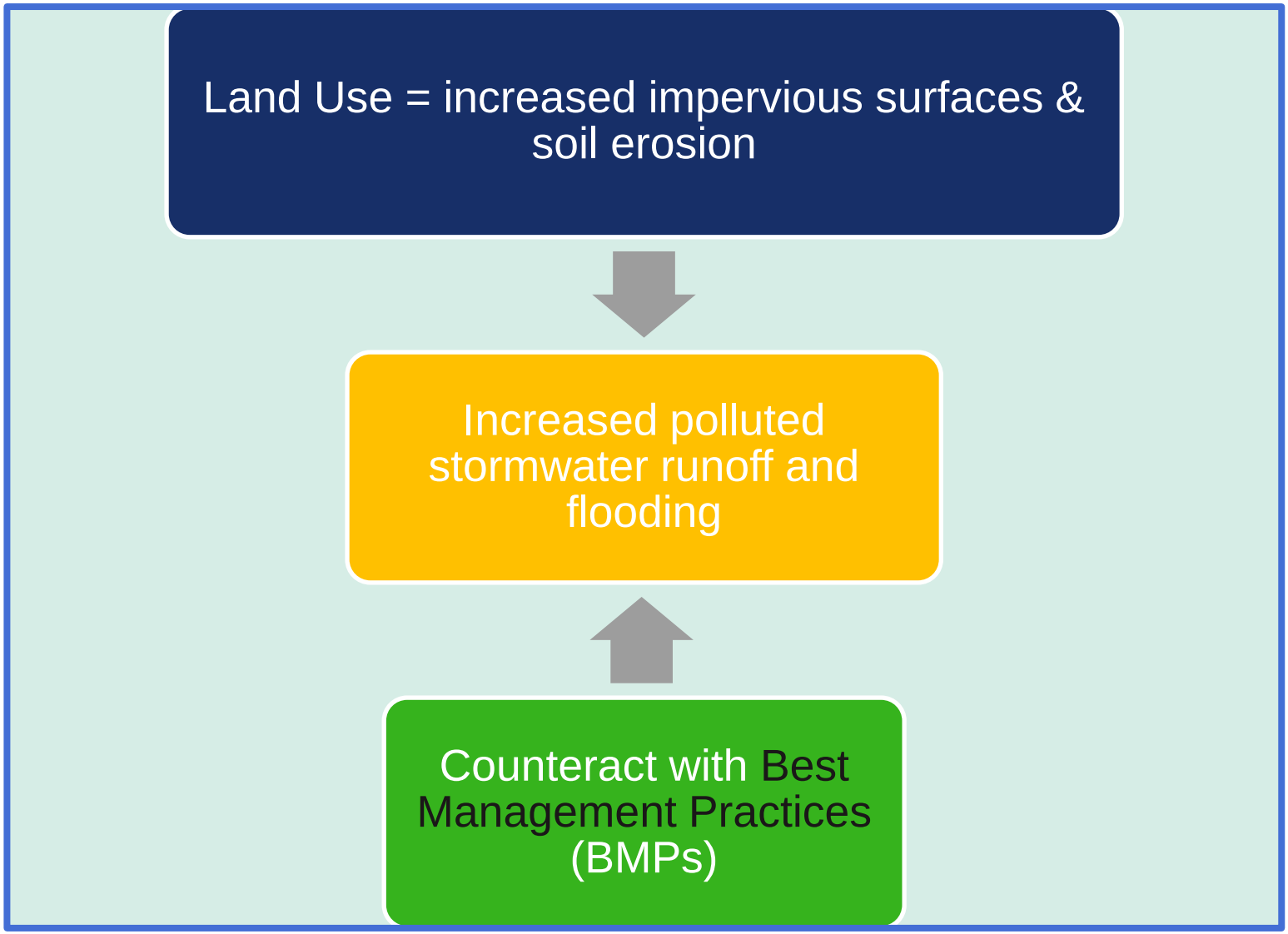
Pollution

Streambank Erosion

Danielle Rhea Penn State

Sedimentation

Jennifer Fetter, PSU


Land Use = increased impervious surfaces & soil erosion
Increased polluted stormwater runoff and flooding
Counteract with Best Management Practices (BMPs)

Homeowner Best Management Practices (BMPs)

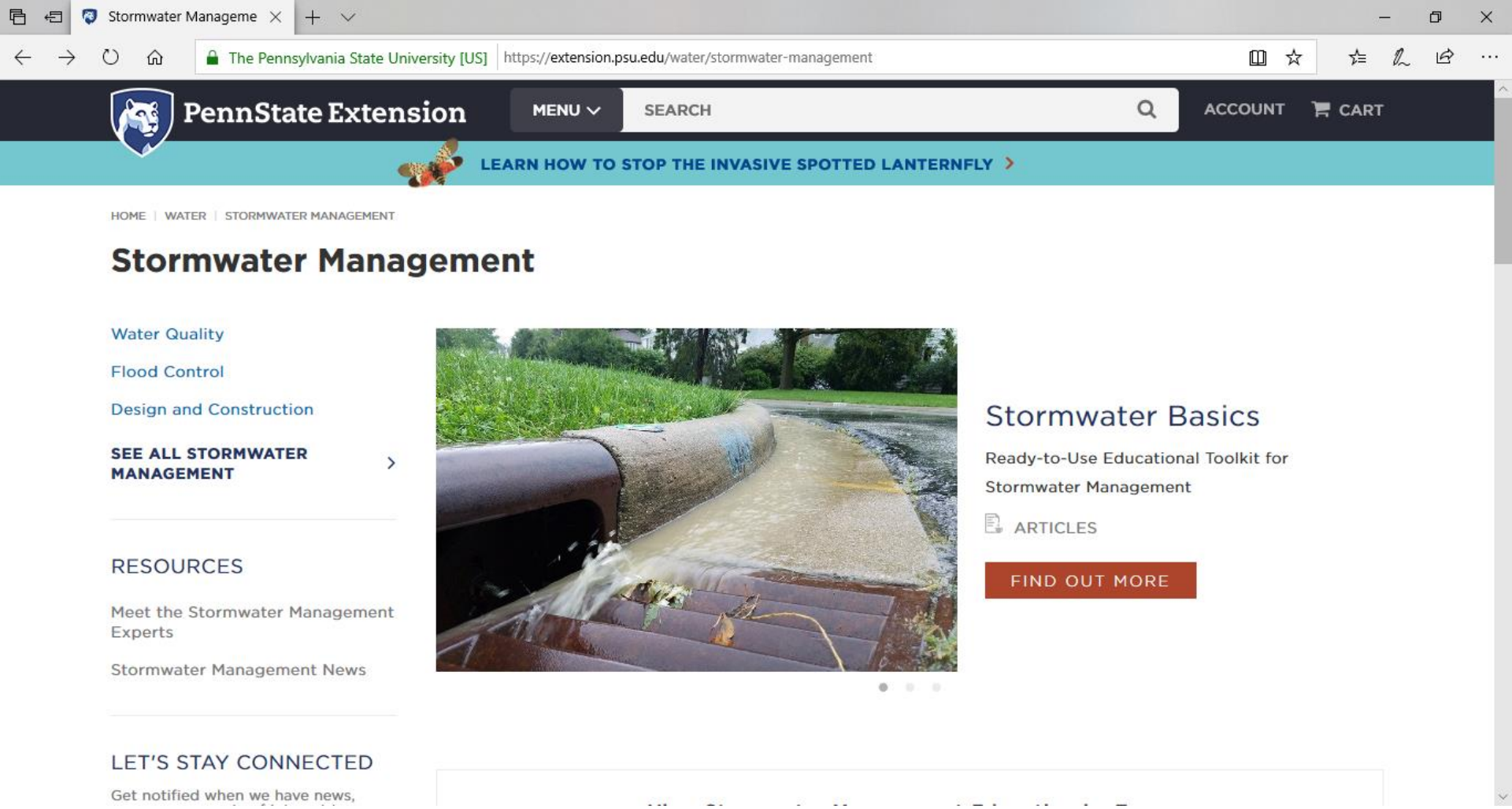
BMPs are physical devices or changes in behavior that will control the volume, rate and/or quality of stormwater runoff.

- Reduce Pollution
- Improve Infiltration
- Conserve Water

Homeowner BMPs

- Rain barrels
- Rain gardens
- Vegetated swale
- Native meadow
- Riparian buffers
- Scoop the poop
- Green/pervious driveways
- Amended soils
- Service septic system
- Properly dispose of hazardous household items
- Water conservation
- Wise lawn management

Kristen Kyler, Penn State



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Visit our website to access resources like local workshops, articles, videos, online courses, and more.

PennState Extension

https://extension.psu.edu/stormwater-basics

Stormwater Basics includes videos and articles to answer common questions from your local residents, such as:

- What is stormwater?
- What is the problem with stormwater and why should I care?
- What can I do about stormwater?
- Why does my community flood more than it used to?
- Is stormwater damaging my property?
- What are stormwater pollutants?
- What are combined sewer overflows?
- What is an MS4?
- How much is my stormwater project going to cost?
- How can I be a good stormwater neighbor?
- What is Sediment and Why is it a Stormwater Pollutant?
- How can I move Stormwater from here to there?
- Why Use a Rain Barrel?
- What's Allowed to go in a Storm Drain?

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Presentation adapted from:
“Stormwater The Issue and Solutions for your Home” by Kristen Kyler, Penn State Ag and Environment Center

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