

Watershed 101

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MISSOURI
DEPARTMENT OF
NATURAL RESOURCES

Content

- In this training we will:
 - Discuss the value of water resources
 - Introduce the concept of a watershed
 - Provide an overview of watersheds and Missouri Hydrologic Units
 - Discuss cause and affect of activities affecting water quality



Definitions

- Hydrologic Unit Code (HUC)
 - Classification System; More digits = smaller area
- Watershed or Basin
 - The land area that drains to a common waterway, such as a stream or a lake
- Point Source
 - One clearly identified source
 - Regulations prescribe limitations on their discharge
- Nonpoint Source (NPS)
 - A source that cannot be defined to originating from one, discrete point.
 - Many times there are multiple contributors
 - Work to address nonpoint sources is voluntary



The Value of Water and the Watershed

- All of us depend on clean, abundant water; it affects our health, industry, commerce, recreation, etc.
 - 66% of Missouri citizens use surface water for main water source and 34% use ground water for their main water source.
 - Two leading industries in Missouri are agriculture and tourism – highly dependent on clean, abundant water
 - So what does this have to do with why watersheds matter?
- Healthy, protected watersheds can ensure clean, abundant water for drinking, irrigation, industrial processes, and recreation. The condition of a watershed directly affects the quality and quantity of water in a lake, river, stream or wetland.

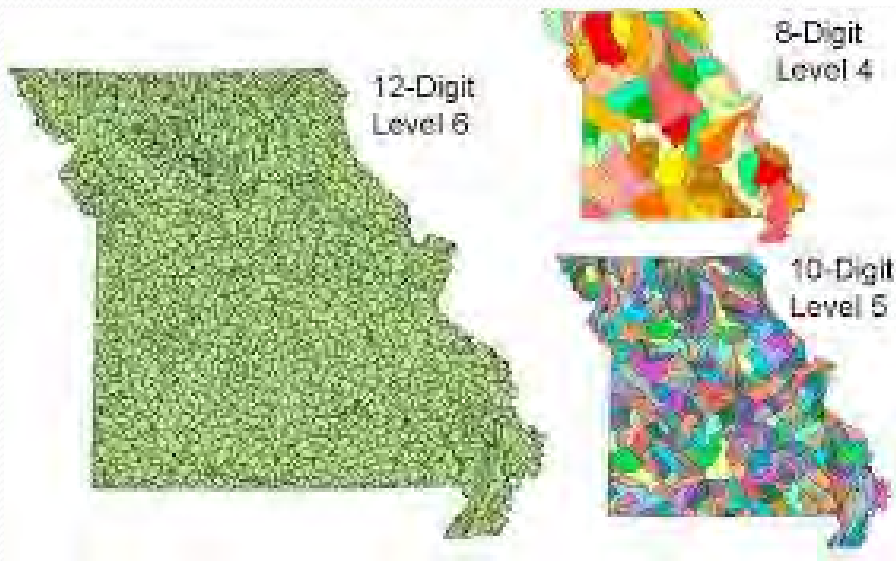
What is a Watershed?

The land area that drains to a common water-body, such as a stream or a lake

- Everyone lives in a watershed! We might live in a community or in a rural area, but you're always in a watershed.
- All of **OUR** activities affect our watershed and impact our valuable water resources.
- The term watershed and basin are often used synonymously.
- Watersheds come in different sizes...

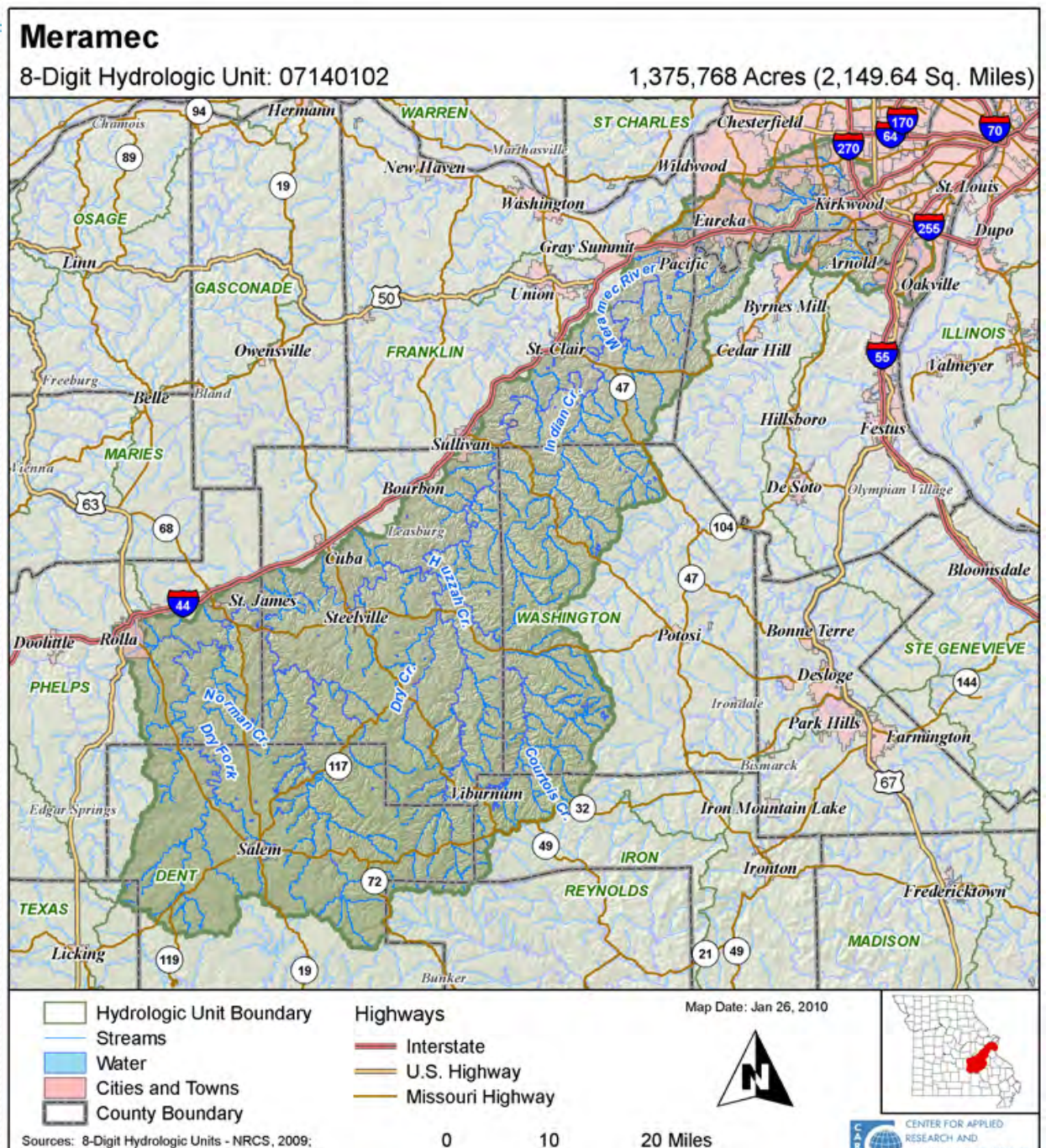
A watershed can be large, such as the Mississippi River watershed

Mississippi River Basin



A watershed can be small. There are 66 HUC-8 watersheds in Missouri. At the HUC-12 size, there are nearly 2,000.

Our focus is on the 8 digit Meremac HUC. This covers an area from almost Licking to the Mississippi River.



Watershed Characteristics

- There are some basic watershed characteristics that can help us identify sensitive areas
- Information can help us see trends that may lead to impacts on our water resources
 - Geology & soil type
 - Geography & slopes
 - Climate and rainfall
 - Land use
 - Land cover
 - Types of industry
 - Population (growing/shrinking)



Common Watershed Stressors

- Point sources
 - Activities that directly discharge to water
- Nonpoint sources
 - Sediment
 - Nutrients
 - Bacteria
 - Pesticides
 - other
- Population growth can lead to more urban areas, which leads to more stormwater runoff
- New industry can change the demands on water supply



Cause and Effect

- Just listing potential watershed stressors may not give us a clear picture of what they cause.
 - Soil erosion – habitat loss
 - Nutrient runoff /fertilizer – algae growth and low DO
 - Organics in water – can mean soil, plant materials, etc. May be caused by soil erosion and nutrient loading
 - Algae blooms/Blue Green Algae – partially caused by excessive nutrients and suspended sediment
 - Low DO – caused by not enough shade, too much algae, etc.



Cause and Effect (con't)

- Once we have identified possible pollution sources we need to identify practical solutions that help minimize the impact.
 - Inventory the human resources available
 - Identify people that can provide technical, educational and financial support
 - Agency, watershed groups, local citizens, etc.
 - Find resources to develop solutions for areas of concern
 - Identify the practice(s) to reduce the potential pollution source
 - NRCS, MDC, SWCD, Ext, County/city stormwater, etc.



Successful Watershed Planning

- Should be a voluntary approach
- Involves the different interest in the watershed
- Incorporates local input
- Needs local buy-in to make it successful
- Changes as new information becomes available or as implementation occurs
- Is as successful as local residents want it to be

Questions????

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