

What is a Stream?

And why is it important....

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US Army Corps of Engineers
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Stream Overview

- What is a Stream?
- Stream Functions and Services
- Types of Streams



What is a Stream?

- Definition

- ▶ Ecological: ***Stream System*** (channel, floodplain, riparian zone)

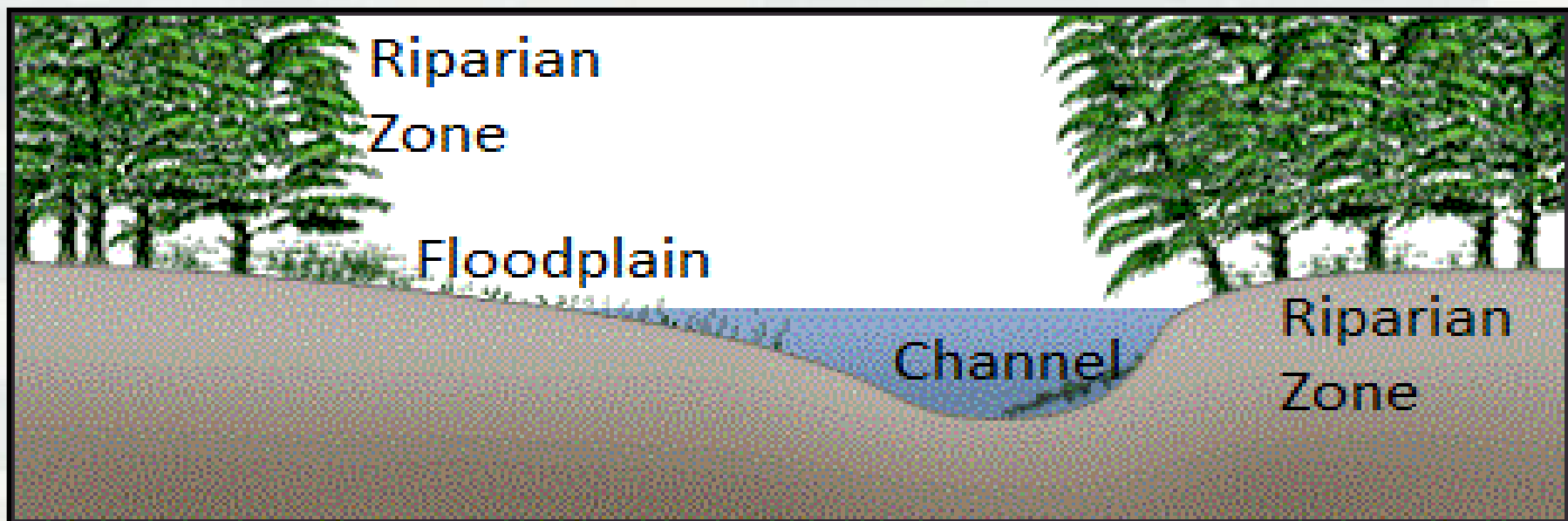


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What is a Stream?

Stream system

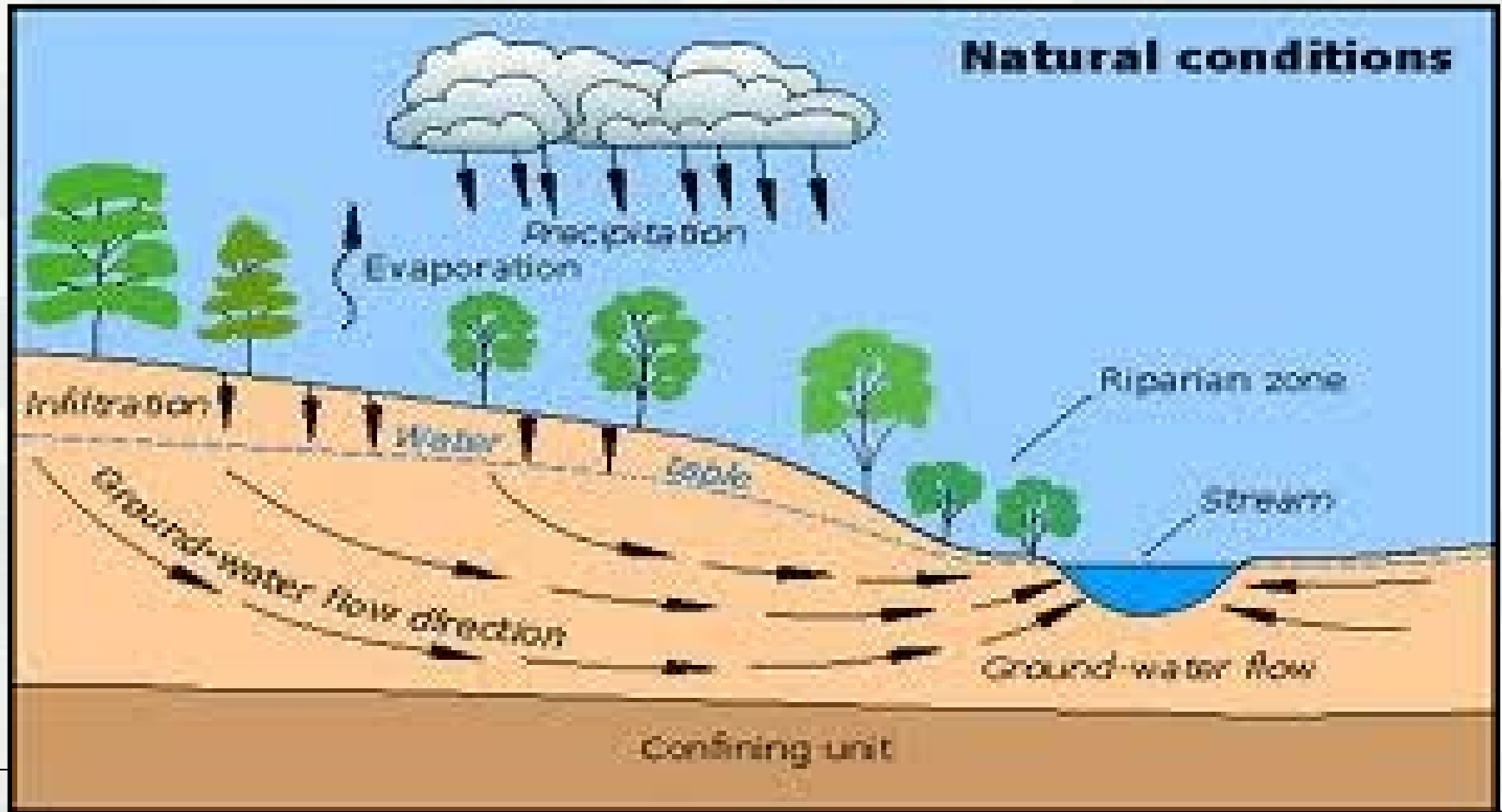
- Channel: stream (bed and bank)
- Riparian Zone:
 - ▶ Transition zone between channel & upland
 - ▶ often contains wetlands
 - ▶ stream bank stability & protection
 - ▶ filters sediment & pollutants
 - ▶ leaf litter/woody debris
 - ▶ shading/temp regulation/
reduces invasion of exotics
 - ▶ wildlife habitat and movement
 - ▶ Evapotranspiration (water loss)
- Floodplain:
 - ▶ wider than riparian area
 - ▶ contains flood waters



What is a Stream?

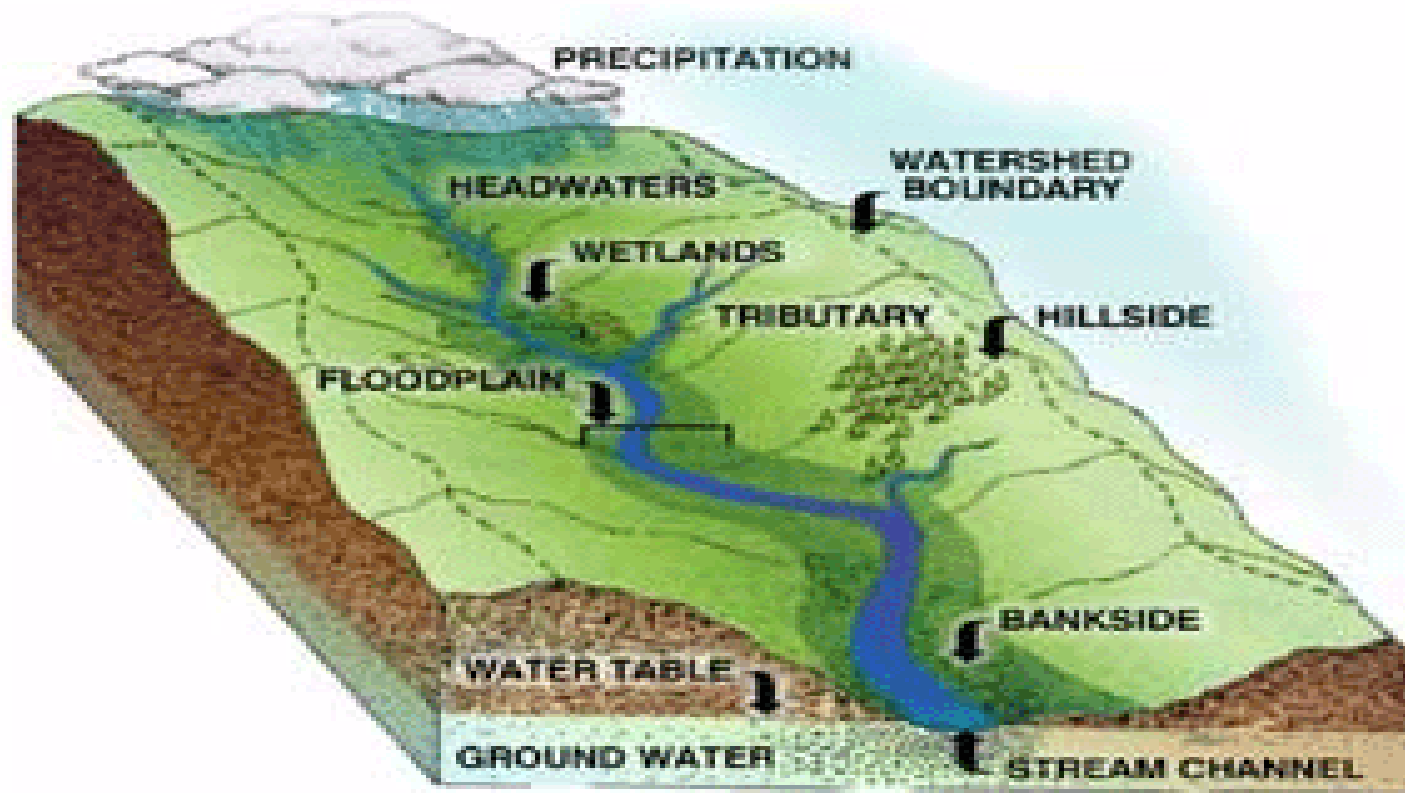
Stream System

Interaction of the channel, floodplain & riparian zone



What is a Stream?

Stream System



Conceptual Watershed Cross Section



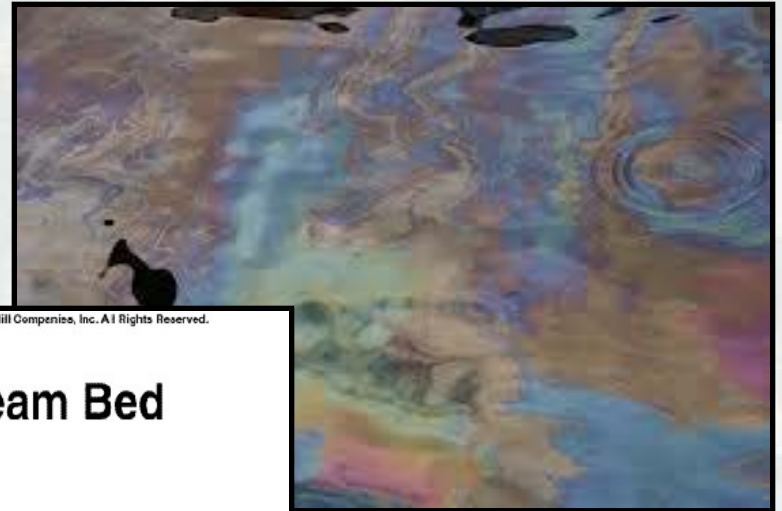
Stream Functions & Services

- Functions vs. Services
 - ▶ Functions: physical, chemical and biological **processes** that occur in lotic ecosystems
 - ▶ Services (values): the **benefits** that **humans** receive from those functions



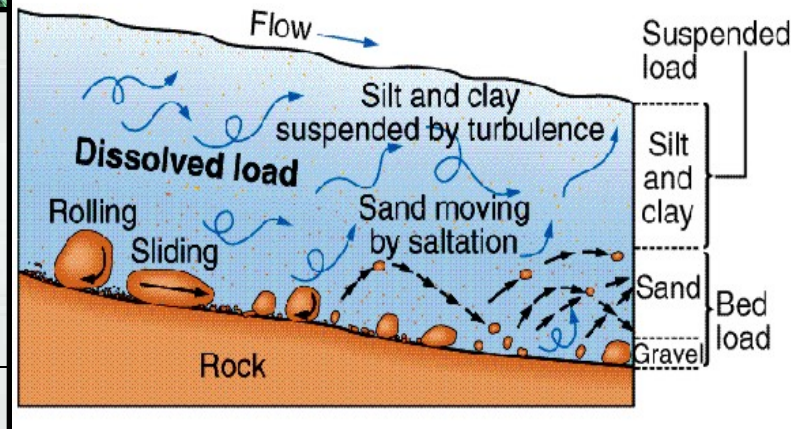
Stream System Functions

Water, Sediment, and Chemical Transport



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Contents of a Stream Bed



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Stream System Functions

Chemical Transformation

Storage of Floodwaters

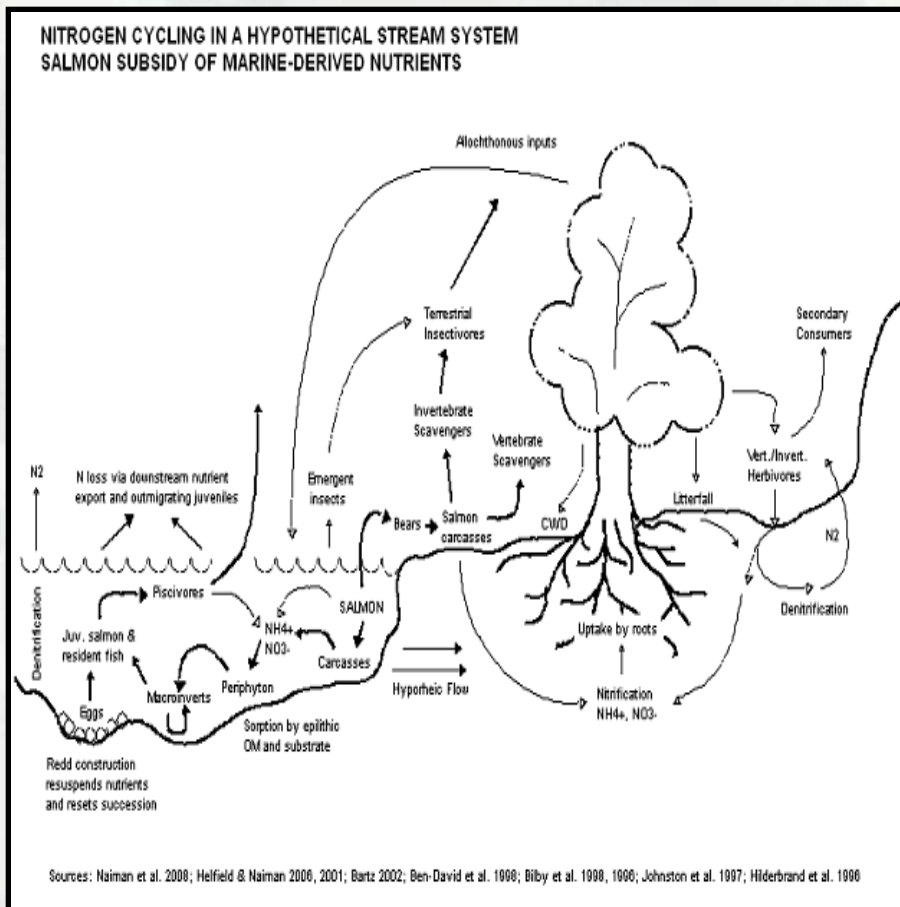
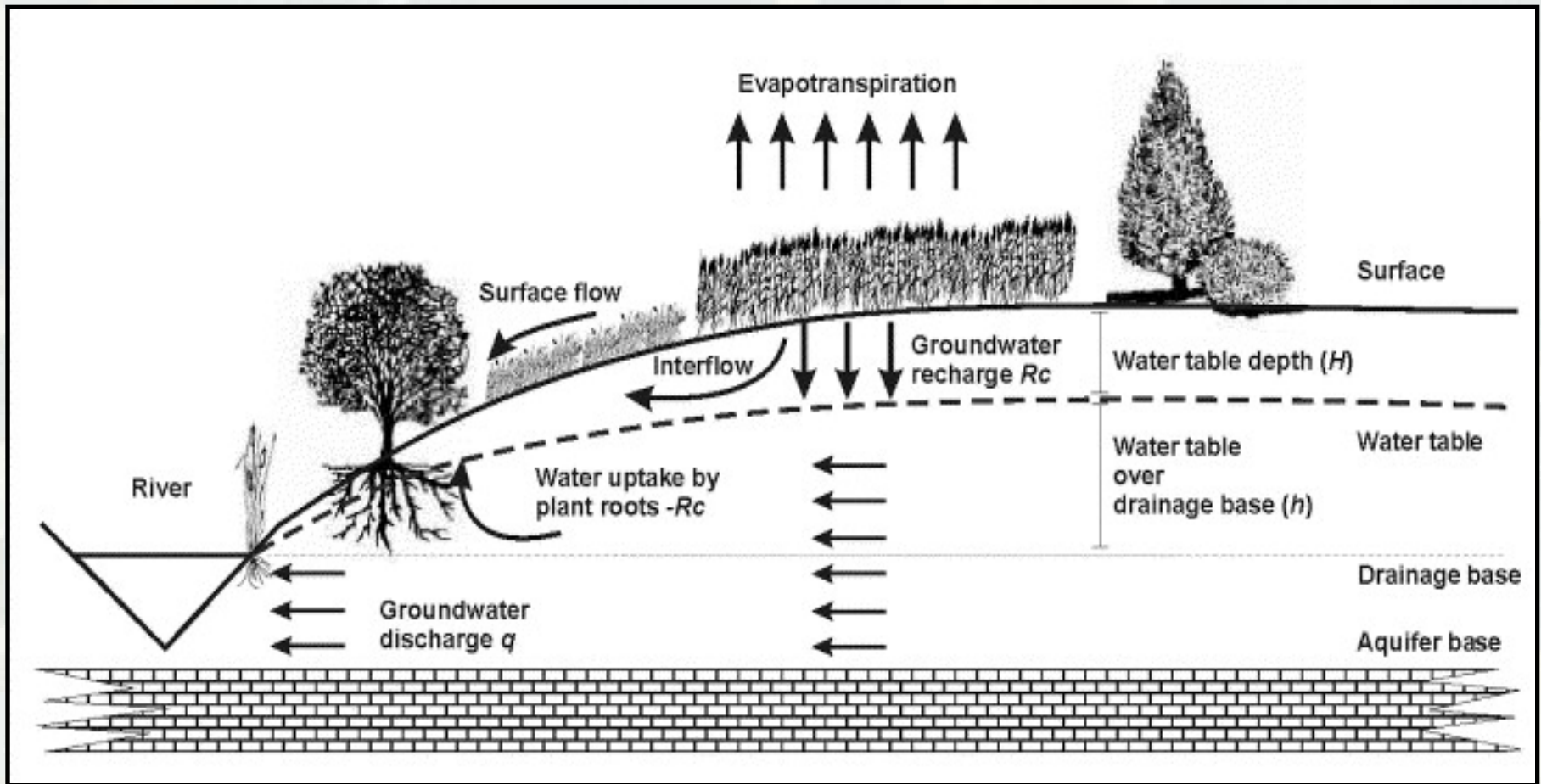


Image Source: enquirer.com, 10/10/13



Stream System Functions

Groundwater Recharge



Stream System Functions

Habitat



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Stream System Services

Flood Control/Reduction



Image Source: courierpress.com, 10/10/13

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Stream System Services

Food Production



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Stream System Services

Drinking Water Source

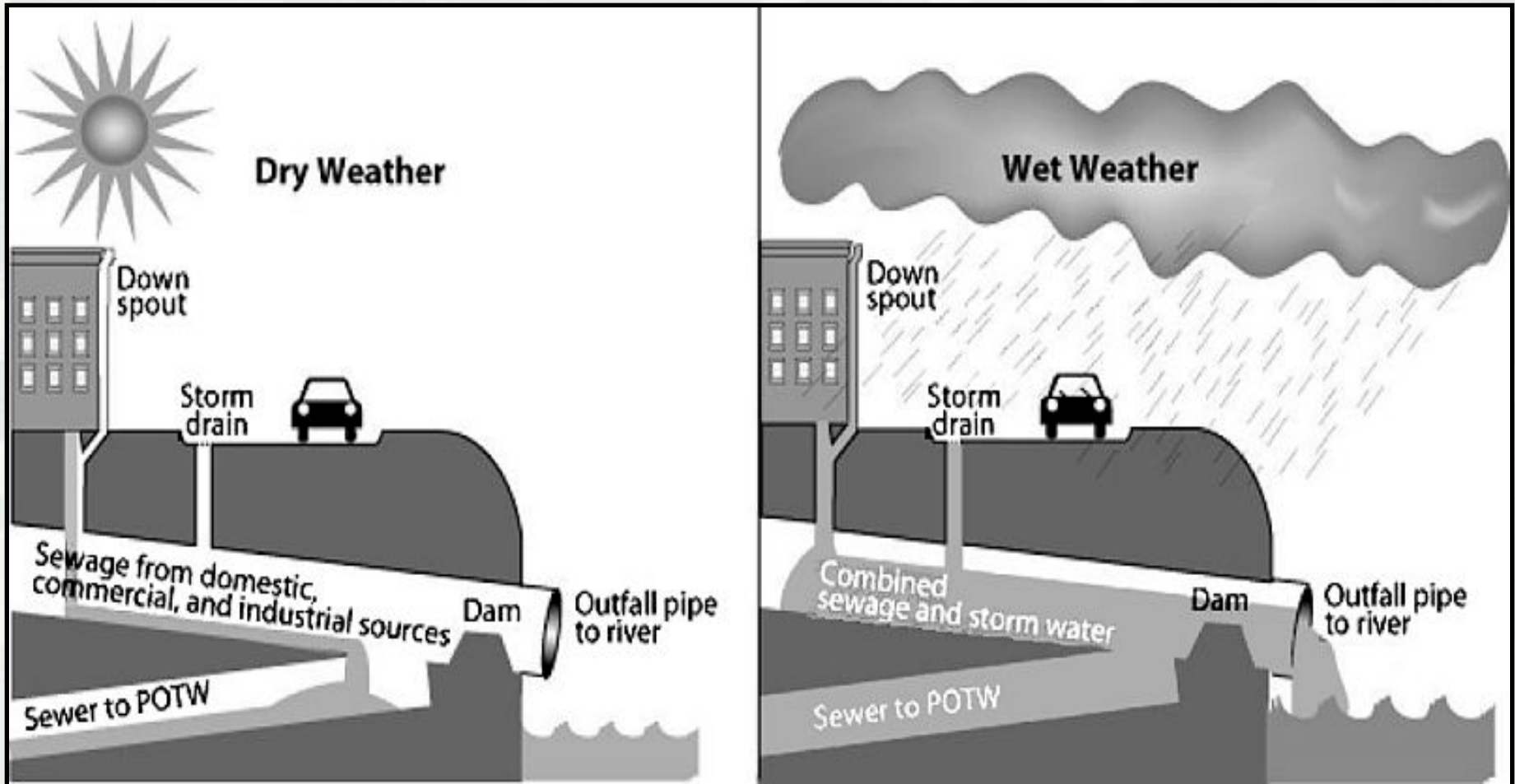


Image Source: louisvilleky.gov, 10/10/13

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Stream System Services

Wastewater Treatment/Dilution



Stream System Services

Irrigation



Image Source: uky.edu, 10/10/13



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Stream System Services

Transportation



Images Source:
riverboatblog.com,
10/10/13



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Stream System Services

Hydroelectric Power



Image Source: American Electric Power, 10/10/13

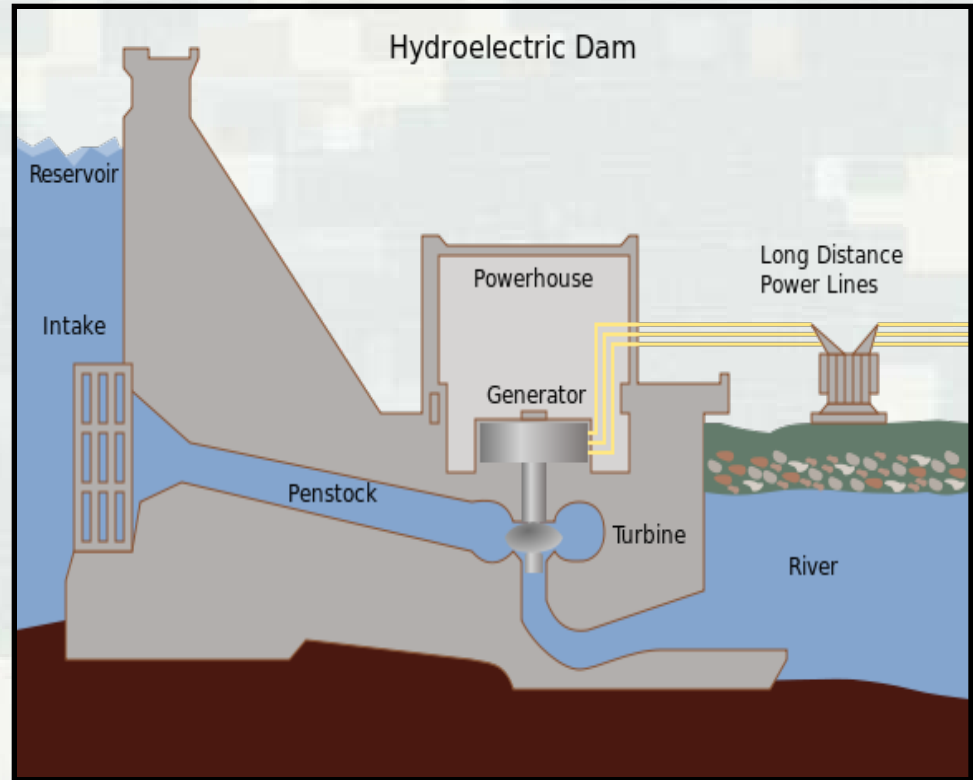


Image Source: Tomia, 10/10/13



Stream System Services

Recreation



Image Source: louisvillewaterways.wordpress.com, 10/10/13



Image Source: sailforacure.org, 10/10/13



Image Source: courier-journal.com, 10/10/13



Stream System Services

Aesthetics



Images Source: parks.ky.gov, 10/10/13

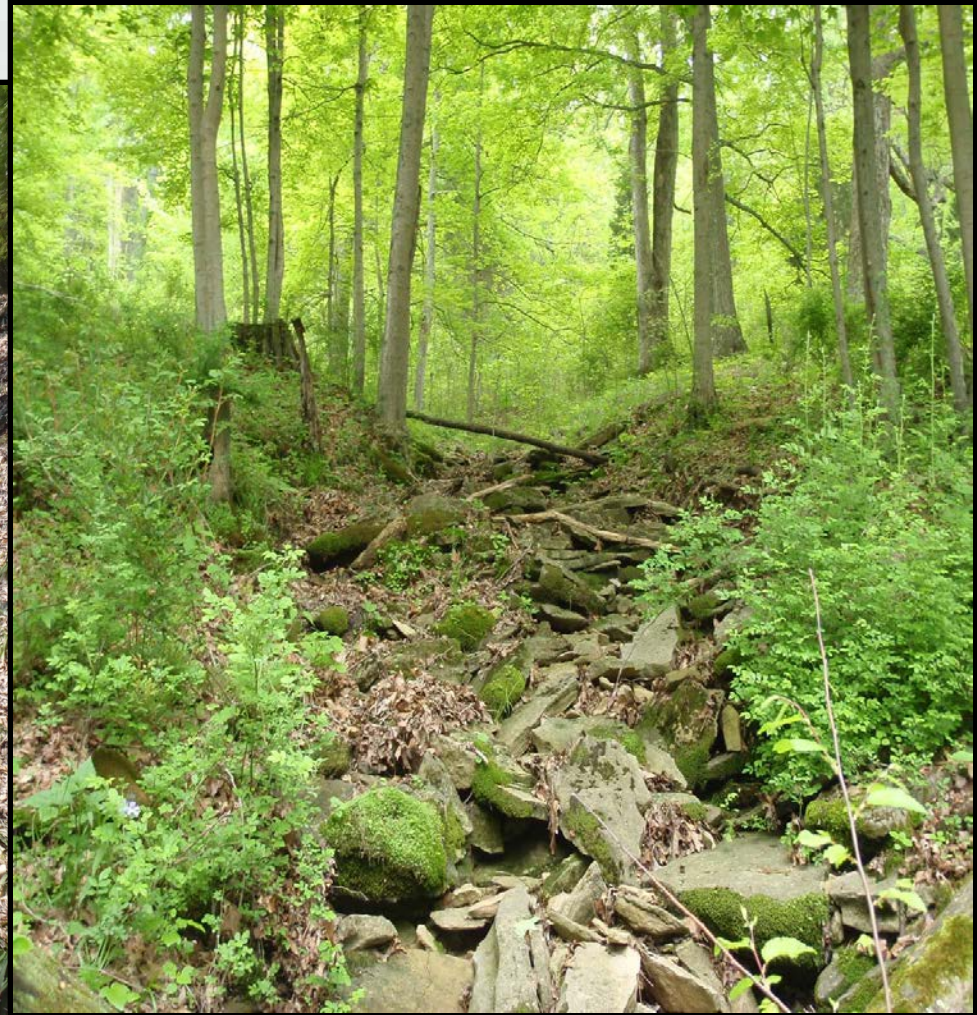


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Stream Types



Ephemeral Streams



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Intermittent Streams



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Perennial Streams



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Stream Overview

- What is a Stream?
 - ▶ Stream System
- Functions & Services
 - ▶ What Streams Do & Why We Care
- Types of Streams
 - ▶ Ephemeral, Intermittent, Perennial



Questions?



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