

# A Framework for Effective Coastal Watershed Restoration Planning



North Carolina  
Coastal Federation  
*Working Together for a Healthy Coast*

# Protecting and Restoring Coastal Hydrology

## Strategy:

- Demonstrate that hydrologic restoration improves water quality by reducing the ***Volume*** of surface runoff.
- Collaborate with multiple partners to reduce impaired waters now and in the future.
- Conduct urban and large-scale rural restoration projects.



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# Watershed Restoration Guidebook

## Purpose, Goal and Strategy

- **Purpose** - To provide clear guidance for developing watershed restoration plans meeting EPA 9 elements.
- **Goal** – Restore the natural hydrology to reduce urban and rural runoff volumes, reduce pollution loads and improve or restore water quality.
- **Strategy** – Estimate runoff occurring from hydrologic modifications and establish a volume reduction goal to reach restoration targets.



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# Watershed Restoration Guidebook Principles

- Concentrate on coastal watersheds with water quality impairments.
- Reduce the *volume* of surface runoff instead of eliminating pollution *sources*.



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# Stormwater Volume Increase Cause and Effect

Land use change



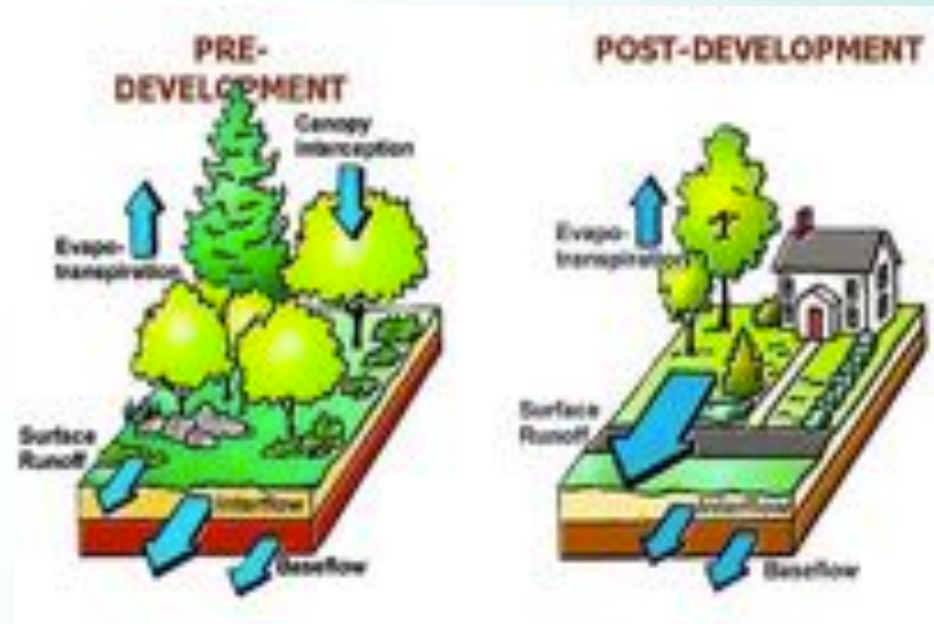
Hydrologic modification



Increased stormwater volumes



Water impairments



*Courtesy of the State of Maryland's StormwaterPrint*

# Watershed Restoration Guidebook

To provide clear guidance for developing watershed restoration plans that position local governments and watershed partners to reach their water quality restoration goals.



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# Watershed Restoration Guidebook

## Chapter 1

### Volume Reduction Philosophy



# Watershed Restoration Guidebook

## Chapter 2



Provides Regulatory Background about the CWA, impaired waters, etc.



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# Watershed Restoration Guidebook

## Chapter 3

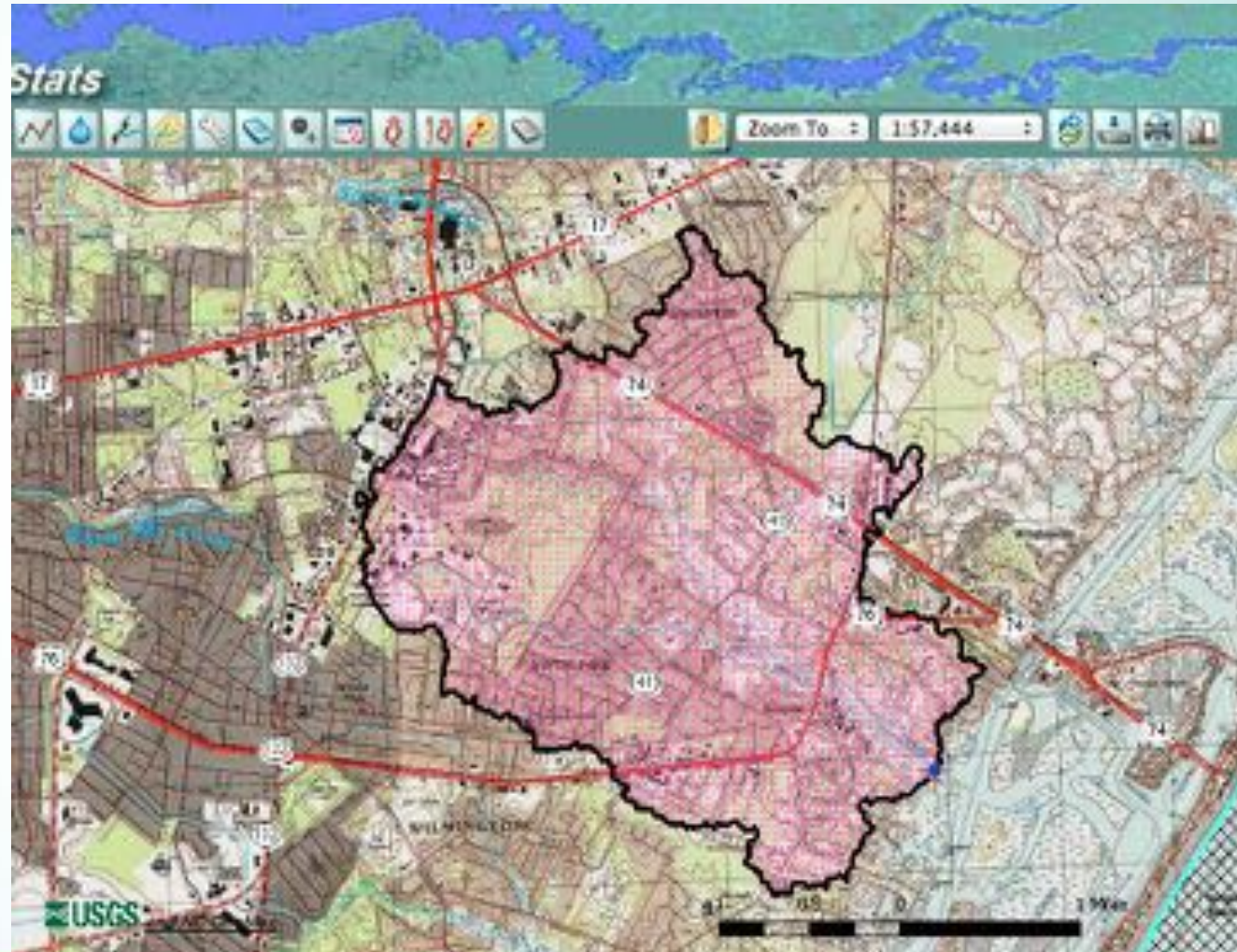
Offers strategies for building partnerships and community support



# Watershed Restoration Guidebook

## Chapter 4

Gives  
instruction for  
setting  
planning goals  
and defining  
watersheds



# Watershed Restoration Guidebook

## Chapter 5

Offers information on how to gather existing data and create a watershed inventory

Types of Useful Data				
Physical and Natural Properties	Land Use and Population Characteristics	Waterbody and Watershed Conditions	Pollutant Sources	Waterbody Monitoring
Watershed boundaries	Aerial photography	Water quality standards	Point sources	Water quality
Hydrology	Land use and land cover	305(b) report	Animal operations	Flow
Topography	Existing management strategies	303(d) list	Wastewater	Biology
Soils	Demographics	TMDL report	Nonpoint sources	Geomorphology
1 yr./ 24 hr. storm		Source Water Assessments	Stormwater	
Habitat				
Wildlife				

# Watershed Restoration Guidebook

## Chapter 6

Focuses on how  
to establish  
volume  
reduction goals



# Watershed Restoration Guidebook

## Chapter 7

Identify  
management  
strategies



# Watershed Restoration Guidebook

## Chapter 8

Create plan and  
implementation  
schedule



# North Carolina Coastal Federation

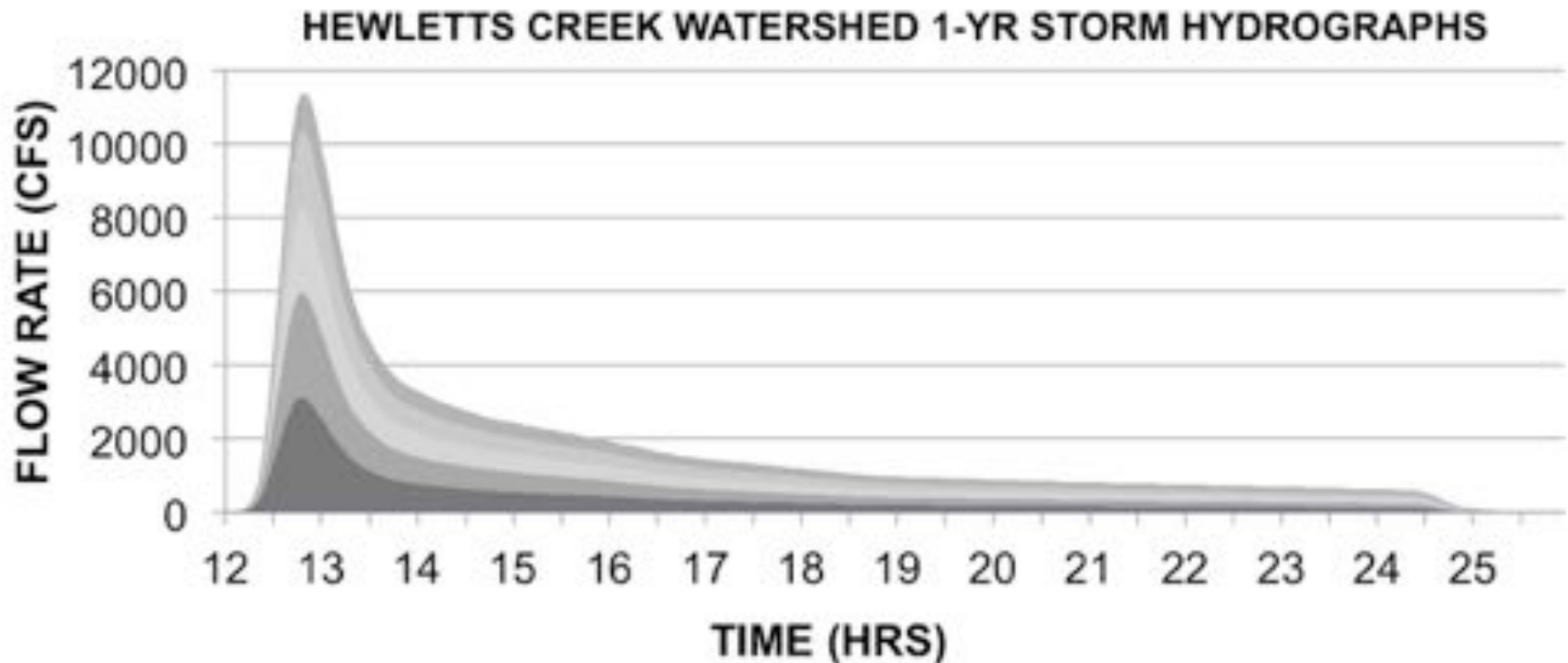
*“Working together for a Healthy Coast”*

- Curriculum Materials at <http://southatlanticalliance.org/?p=1710>
- Online Event Survey
- Tour Directions/Groups



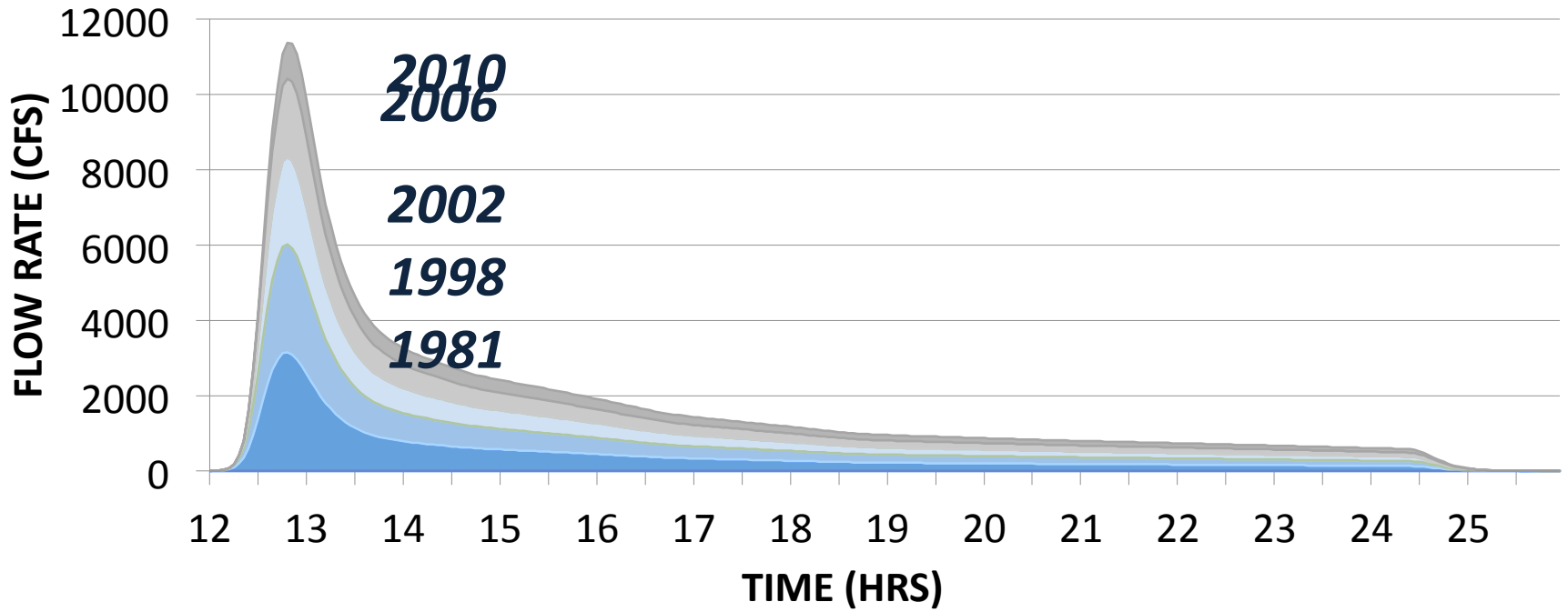
# Establishing Volume Reduction Goals

1. Formalize baseline year
2. Gather necessary data – historic land use, rain fall, history of water closures
3. Develop a hydrograph – calculate the increase in runoff over time and the necessary target volume reductions





# HEWLETTS CREEK WATERSHED 1-YR STORM HYDROGRAPHS



**A-1** SGA Identifier

SGA Boundary

Closure Lines

**SGA Classifications**

- APP
- CA-D
- CA-C
- CSHA-P

