

“Nature always wears the colors of the spirit” —EMERSON

EUSCR Update

Eastern U.S. Freshwater Program

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Colin Apse

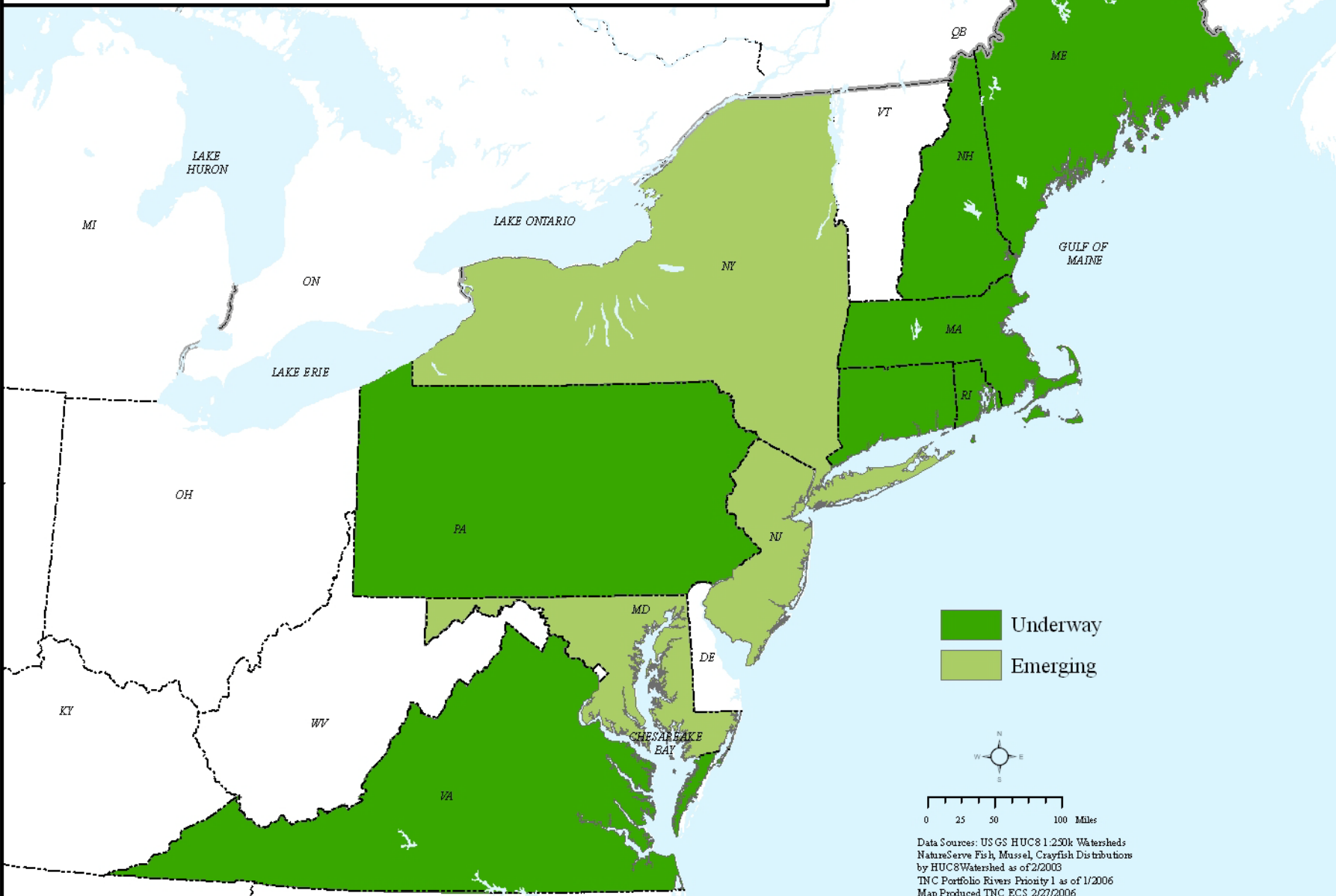


Overview

- Background
- Connecticut Draft Streamflow Regs
- Ecological Water Supply Mgmt Project
- Southeast Instream Flow Network
- Other Efforts – ME, MA, MI

States Working on Instream Flow Policy

DRAFT OF 10/1/2006

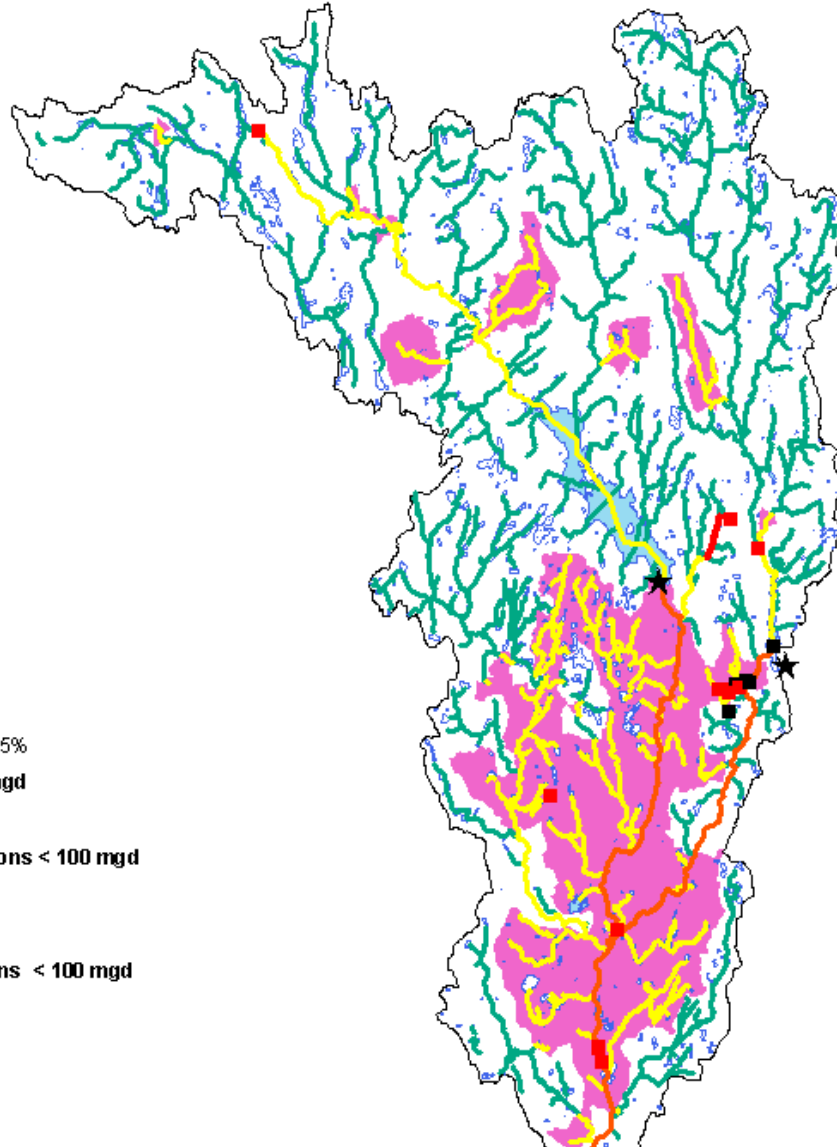


Data Sources: USGS HUC8 1:250k Watersheds
NatureServe Fish, Mussel, Crayfish Distributions
by HUC8Watershed as of 2/2003
TNC Portfolio Rivers Priority 1 as of 1/2006
Map Produced TNC ECS 2/27/2006



Connecticut Draft Regulation: Key Features

- Legislature required new regulation based on protection of natural flow variability
- Committee input for 1 ½ years
- Using “River Classes” with tiered narrative standard
- Presumptive compliance criteria based on bioperiods
- Flow management plans for those not meeting presumptive standard, evaluated using IHA statistics



— Class 1 Streams

— Class 2 Streams

— Class 3 Streams

— Class 4 Streams

■ Impervious Surface Area > 5%

Consumptive Diversions > 100 mgd

★ Surface Water

Consumptive Registered Diversions < 100 mgd

■ Surface Water

■ Ground Water

Consumptive Permitted Diversions < 100 mgd

■ Surface Water

■ Ground Water



Little River Hanover

99th Percentile (cfs)

Enter 99th 4.90

Month	BioPeriod	HydroPeriod	cfsm	Scale factor	99th Percentile Flow Multiplier		
					Class 1	Class 2	Class 3
Dec							
Jan	Overwinter	High-Medium Flow	1.53	9	0.05	2.25	4.50
Feb							
Mar	Habitat Forming	High Flow	2.58	14	0.05	3.58	7.17
Apr							
May	Clupeid Spawning	High-Medium Flow	1.53	9	0.05	2.13	4.25
Jun	Resident Spawing	Low-Medium Flow	0.71	4	0.05	0.99	1.97
Jul							
Aug	Rearing & Growth	Low Flow	0.18	1	0.05	0.25	0.50
Sep							
Oct							
Nov	Salmonid Spawning	Low-Medium Flow	0.71	4	0.05	0.99	1.97

Month	BioPeriod	HydroPeriod		Allowable Extraction						
				Class 1	Class 2	Class 3				
Dec										
Jan	Overwinter	High-Medium flow	<i>cfs</i>	0.25	11.03	22.05				
Feb							<i>gpd</i>	158,348	7,125,645	14,251,290
Mar	Habitat Forming	High Flow	<i>cfs</i>	0.25	17.56	35.12				
Apr							<i>gpd</i>	158,348	11,348,249	22,696,499
May	Clupeid Spawning	High-Medium Flow	<i>cfs</i>	0.25	10.41	20.83				
			<i>gpd</i>	158,348	6,729,776	13,459,552				
Jun	Resident Spawing	Low-Medium Flow	<i>cfs</i>	0.25	4.83	9.66				
			<i>gpd</i>	158,348	3,122,968	6,245,936				
Jul										
Aug	Rearing & Growth	Low Flow	<i>cfs</i>	0.25	1.23	2.45				
Sep							<i>gpd</i>	158,348	791,738	1,583,477
Oct										
Nov	Salmonid Spawning	Low-Medium Flow	<i>cfs</i>	0.25	4.83	9.66				
			<i>gpd</i>	158,348	3,122,968	6,245,936				



Evaluating Flow Management Plans

- Central tendency = % change in monthly median flows for 3 groups of bioperiods
- Low flows = %change in: event frequency 7 duration below Q90, 7-day low flow
- High flows = %change in: frequency & duration of 2+ year floods, 2 year flood magnitude, 1-day annual maximum flow timing
- Rate of change = % change in Flashiness Index



Maine Instream Flow & Water Level Standards: Key Features

- Tiered instream flow standards tied to water quality classification (AA, A, B, C)
- AA allows no more than 10% flow alteration
- A-C protects a “seasonal aquatic baseflow”- 6 seasons based on a monthly median flow
- A with additional high flow protections
- “Certificate” for Community Water Systems



Other Efforts of Interest

MA Sustainable Yield Estimator:

- USGS effort to simulate unimpacted and current condition flow regimes statewide
- Being picked up by Connecticut & potentially the CT Basin



QPPQ Transform

