

Development of an Interim Stream Quantification Tool for Georgia



Eric Somerville
Oceans, Wetlands & Streams Protection Branch
U.S. EPA Region 4

somerville.eric@epa.gov

Georgia Interim SQT, 2018

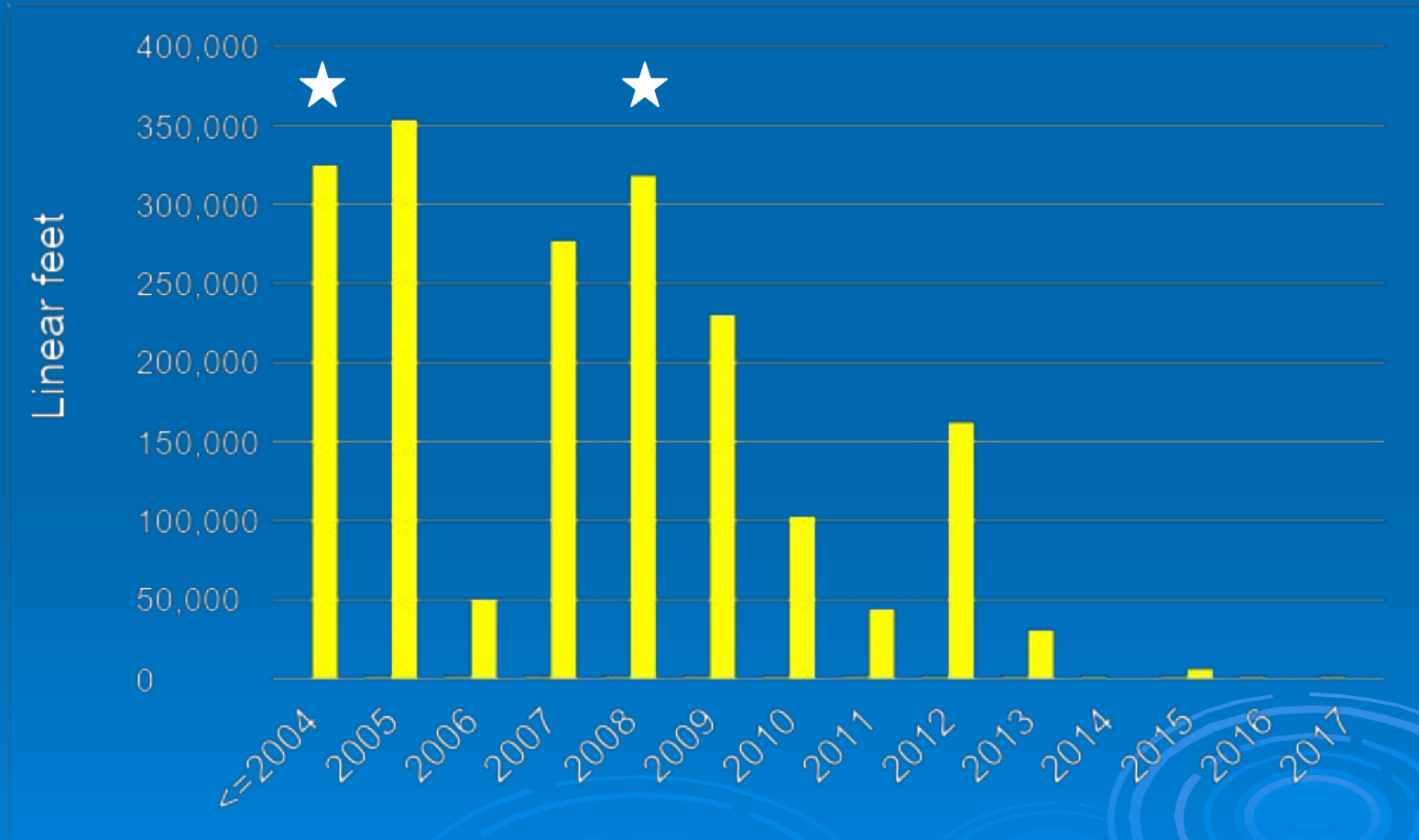
Not the “what,” but the “why”



Photo: St. Mary's Fluvial Studies, <https://sites.google.com/site/stmarysfluvialstudies/meanders-alice-emily>

The following presentation is based solely on views of the author and is neither endorsed by, nor the official position of the U.S. Environmental Protection Agency.

Annual Approved Stream Mitigation in Georgia



Source: RIBITS, accessed 7/6/2018

Georgia Stream Mitigation Credits, 2004

STREAM CHANNEL RESTORATION, STREAM RELOCATION AND STREAMBANK RESTORATION WORKSHEET				
Net Benefit	All proposals must include at least a 25' riparian buffer on both banks Buffers >50' +2'/%slope also may generate riparian credit (use see buffer worksheet)			
	Streambank Stabilization	Structure Removal	Stream Channel Restoration and Stream Relocation	
	2.0	4.0 to 8.0	Priority 4 1.0	Priority 3 4.0
Monitoring/ Contingency	Minimal (Required) 0	Moderate 0.3	Substantial 0.4	Excellent 1.0
Priority Area	Tertiary 0.05	Secondary 0.2	Primary 1.0	
Control	RC on restored channel and 25' buffer (Required) 0.1	Required RC + CE or GPP 0.3	Required RC + CE + GPP 0.5	
Mitigation Timing	Schedule 3 0	Schedule 2 (Use for all banks) 0.1	Schedule 1 0.5	

2008 Mitigation Rule:

Mitigation objective

- Offset environmental losses resulting from unavoidable impacts to waters of the U.S.,
- Based on the lost aquatic resource functions,
 - ~must identify a target resource type & resource functions.

Ecological Performance Standards

- Based on project objectives,
- Based on attributes that are objective and verifiable,
- Used to determine if the project is developing into the desired resource type & providing the expected functions.

The SQT is here!!

The SQT is here!!



Georgia Interim SQT



SQT vs “SQT Light”

5 **BIOLOGY** » *Biodiversity and the life histories of aquatic and riparian life*

3 **GEOMORPHOLOGY** » *Transport of wood and sediment to create diverse bed forms and dynamic equilibrium*

2 **HYDRAULIC** » *Transport of water in the channel, on the floodplain, and through sediments*

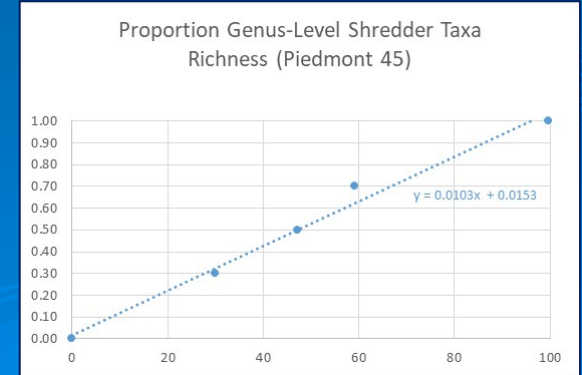
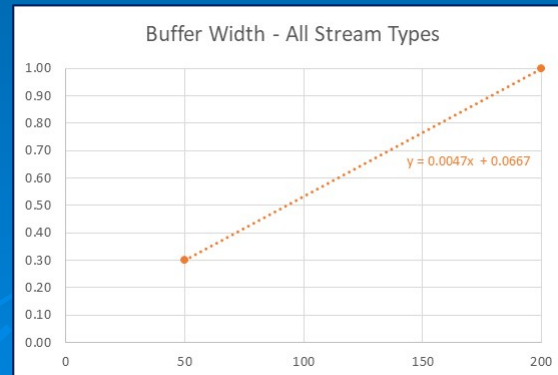
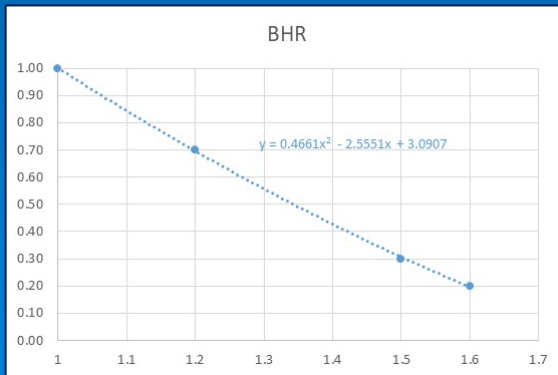
- Savannah District 2018 SOP
- Site Selection Criteria
 - Watershed, Catchment, Site Assessment
 - Go or No-Go

- SQT
 - Hydraulics, Geomorphology, Biology
 - Credits

- Monitoring Requirements & Performance Standards
 - When, What, How
 - Credit Releases

“Georgia SQT Light”

Functional Category	Function-Based Parameters	Measurement Method
Hydraulics	Floodplain Connectivity	Bank Height Ratio Entrenchment Ratio
Geomorphology	Riparian Vegetation	Left Buffer Width (ft) Right Buffer Width (ft)
	Bed Form Characterization	Pool Spacing Ratio Percent Riffle LWD Index
Biology	Macros	Proportion EPT Taxa Richness Proportion Clinger Taxa Richness Proportion Shredder Taxa Richness Proportion Burrower Taxa Richness



“As restoration science and practice develop, it is imperative that we examine and reexamine the assumptions and scientific evidence (or lack thereof) that underlie restoration efforts,”

-Margaret

Palmer, 2009

