



# R. L. Harris Hydroelectric Project

## FERC No. 2628

### Meeting Summary Harris Action Team 3 – Fish and Wildlife November 5, 2020 9:00 am to 10:00 am Conference Call

#### **Participants:**

Angie Anderegg – Alabama Power Company (Alabama Power)  
Dave Anderson – Alabama Power  
Jeff Baker – Alabama Power  
Jason Carlee – Alabama Power  
Keith Chandler – Alabama Power  
Evan Collins – United States Fish and Wildlife Service (USFWS)  
Allan Creamer – Federal Energy Regulatory Commission (FERC)  
Colin Dinken – Kleinschmidt Associates  
Amanda Fleming – Alabama Power  
Todd Fobian – Alabama Department of Conservation and Natural Resources (ADCNR)  
Chris Goodman – Alabama Power  
Jim Hancock – Balch and Bingham  
Martha Hunter – Alabama Rivers Alliance (ARA)  
Carol Knight – Downstream Property Owner  
Matthew Marshall – ADCNR  
Lydia Mayo – Environmental Protection Agency (EPA)  
Ashley McVicar – Alabama Power  
Tina Mills – Alabama Power  
Jason Moak – Kleinschmidt Associates  
Erin Padgett – USFWS  
Kelly Schaeffer – Kleinschmidt Associates  
Sandra Wash – Kleinschmidt Associates  
Jack West – ARA

#### **Meeting Summary:**

Angie Anderegg (Alabama Power) opened the meeting and introduced everyone. Following a safety briefing, Jason Moak (Kleinschmidt Associates) presented the effects of the downstream release alternatives on downstream aquatic habitat. Attachment A contains the HAT 3 presentation. Jason explained that the downstream release scenario involving releasing 100 percent (%) of the discharge of the previous day at Heflin (100% Prior Day Heflin) was not analyzed in HEC-RAS because, in practice, Green Plan (GP) releases equal or exceed that amount. Jason presented the relative percent difference in wetted perimeter from the GP for each downstream release scenario at a sample of different transects representing different habitats (riffles, runs, pools). Jason also presented figures summarizing the amount of time each release scenario equaled or exceeded wetted perimeter values at each transect. The impact of downstream release alternatives on wetted perimeter is typically less in pools than in riffles and attenuates for all habitat types with increasing distance from the dam.

Jason also reviewed wetted perimeter stability, which is defined as the daily fluctuation in wetted perimeter for each scenario, compared to GP. Negative percentages indicate greater fluctuation, and positive numbers indicate less fluctuation or greater stability. In some of the riffles, there is increased stability with increase in flows.

Evan Collins (USFWS) asked why instability is relatively consistent among scenarios at certain transects. For example, transect 23 does not have a general trend of increasing stability as total discharge of the downstream release scenarios increased. Jason indicated that there might be some kind of hydraulic control occurring and that he would investigate the morphology of the river channel and determine what variables could cause these types of anomalies.

Jason asked the HAT 3 participants to request any additional metrics that would be of interest within 2-3 weeks of the meeting; any suggestions should be sent to Angie Anderegg.

Jack West (ARA) asked Jason to further clarify why 100% Prior Day Heflin was not analyzed in HEC-RAS. Jason said at least 100% of Prior Day Heflin flow is regularly released under the current GP. Angie added that the GP criteria states that at least 75% of the prior day's flow at Heflin would be released. Translating that minimum requirement into the 10, 15, and 30 minute GP pulsing operations results in releases well above 75% of the prior day's Heflin flow. Therefore, comparing actual GP baseline operations to 100% of the prior day's Heflin flow in HEC-RAS is not necessary, because there is no discernible difference. Alabama Power will include this explanation in the Phase 2 Downstream Release Alternatives Study Report.

Colin Dinken (Kleinschmidt Associates) presented Auburn University's progress on its research for the Aquatic Resources Study. Jack West asked about the location of the potential alternative reference site for fish community sampling that was proposed in Appendix B of the Draft Aquatic Resources Study Report. This alternative reference site was proposed, because the unregulated site located about four miles upstream of Lee's Bridge seemed to be more influenced by dam operations than anticipated. Colin stated that Auburn University determined that the reference site for fish community sampling will remain the same, because no suitable alternative sites further upstream could be located. It was important that sampling methodology to be consistent at both sites; however, the areas located further upstream would not have allowed Auburn to use the same sampling equipment, thereby altering the study methods. It was determined that since the reference site upstream of Lee's Bridge is riverine, and the operational influence is limited to a decrease in water level of one to two feet, continuing to sample at the original unregulated site was preferred over changing sampling methodology at an alternative site. The Final Aquatic Resources Study Report will be filed by April 2021.

Jason reviewed the history of GP spawning windows. During the development of the GP, the stakeholders wanted Alabama Power to provide periods of stable flows to benefit fish spawning and recruitment downstream of Harris Dam. Spawning windows were requested by Elise Irwin (United States Geological Survey) in 2006 but could not be provided due to a tropical storm. There were no additional requests from stakeholders or agencies between 2006 and 2017. In 2017, Alabama Power met with the GP technical team to evaluate a 14-day period in March to withhold peaking and include three, 10-minute pulses per day. This operational regime was initiated, but the spawning window could not be maintained for the entire 14 days due to increasing inflows into the reservoir. Jason also reviewed lake stabilization for spawning. The

ADCNR typically requests that Alabama Power maintain stable or slightly rising lake levels during the spring for 14 days to benefit fish that spawn in the shallow regions of Harris Reservoir. These spawning windows are typically provided during the spring when temperatures are suitable for bass and sunfish spawning; however, the full 14-day window is not always achieved if inflows are high.

Colin provided an update on the Threatened and Endangered Species Study. Field surveys have been conducted for Finelined Pocketbook (*Hamiota altilis*), Palezone Shiner (*Notropis albizonatus*), White Fringeless Orchid (*Platanthera integrilabia*), and Price's Potato-bean (*Apios priceana*) specimens and Red-cockaded Woodpecker (*Picoides borealis*) habitat occurring within the Project Boundary at Lake Harris and at Skyline. It was determined that none of these species are likely to occur within the Project Boundary. The survey reports and revised Threatened and Endangered Species Desktop Assessment will be filed with the Final Threatened and Endangered Species Study Report in January 2021.

The meeting adjourned.

Attachment A – Presentation from November 5, 2020 HAT 3 Meeting

# R.L. Harris Project Relicensing

## HAT 3 – Fish and Aquatic Resources

**November 5, 2020**



# Meeting Agenda



- Safety Moment
- Roll Call
- Downstream Aquatic Habitat – New Release Scenarios
- Aquatic Resources Study Update
- Green Plan Spawning Windows and Lake Stabilization
- Threatened & Endangered Species Study Update





# Phone Etiquette

- ☐ Be patient with any technology issues
- ☐ Follow the facilitator's instructions
- ☐ Phones will be muted during presentations
- ☐ Follow along with PDF of presentations
- ☐ Write down any questions you have for the designated question section
- ☐ Clearly state name and organization when asking questions
- ☐ Facilitator will ask for participant questions following the presentation



# Downstream Release Alternatives Habitat Analysis

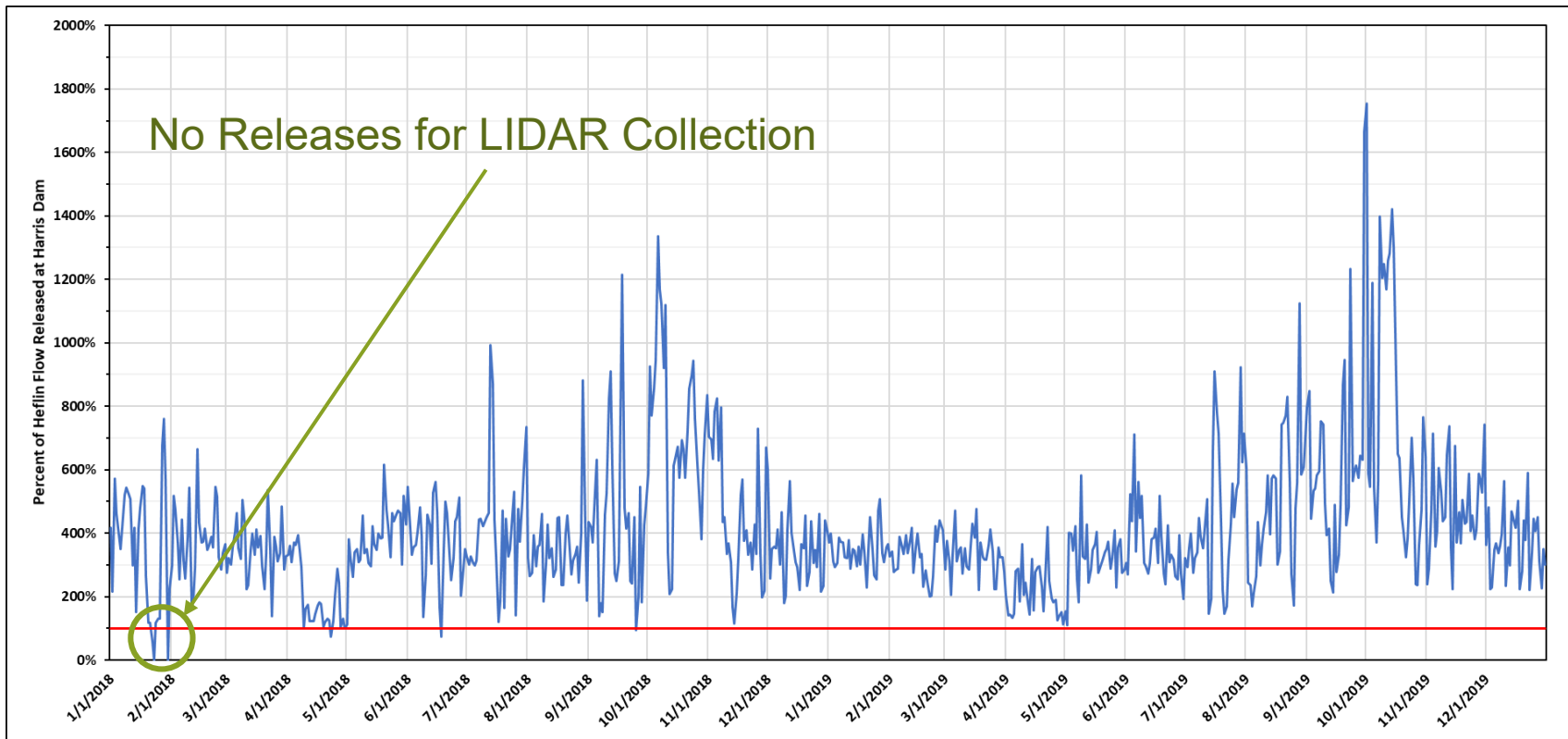


# Analysis of Release Scenarios



- Pre-Green Plan (PGP)
- Green Plan (GP)
- 150 cfs Continuous Minimum Flow (150CMF)
- Modified Green Plan (ModGP) [Pulses at 2 am, 10 am, and 6 pm, generation as need if water available]
- 100% Prior Day Heflin
- 300 Continuous Minimum Flow (300CMF)
- 600 Continuous Minimum Flow (600CMF)
- 800 Continuous Minimum Flow (800CMF)
- Green Plan Plus 150 cfs Continuous Minimum Flow (150CMF+GP)
- Green Plan Plus 300 cfs Continuous Minimum Flow (300CMF+GP)
- Green Plan Plus 600 cfs Continuous Minimum Flow (600CMF+GP)
- Green Plan Plus 800 cfs Continuous Minimum Flow (800CMF+GP)

# Harris Releases and Heflin Flows



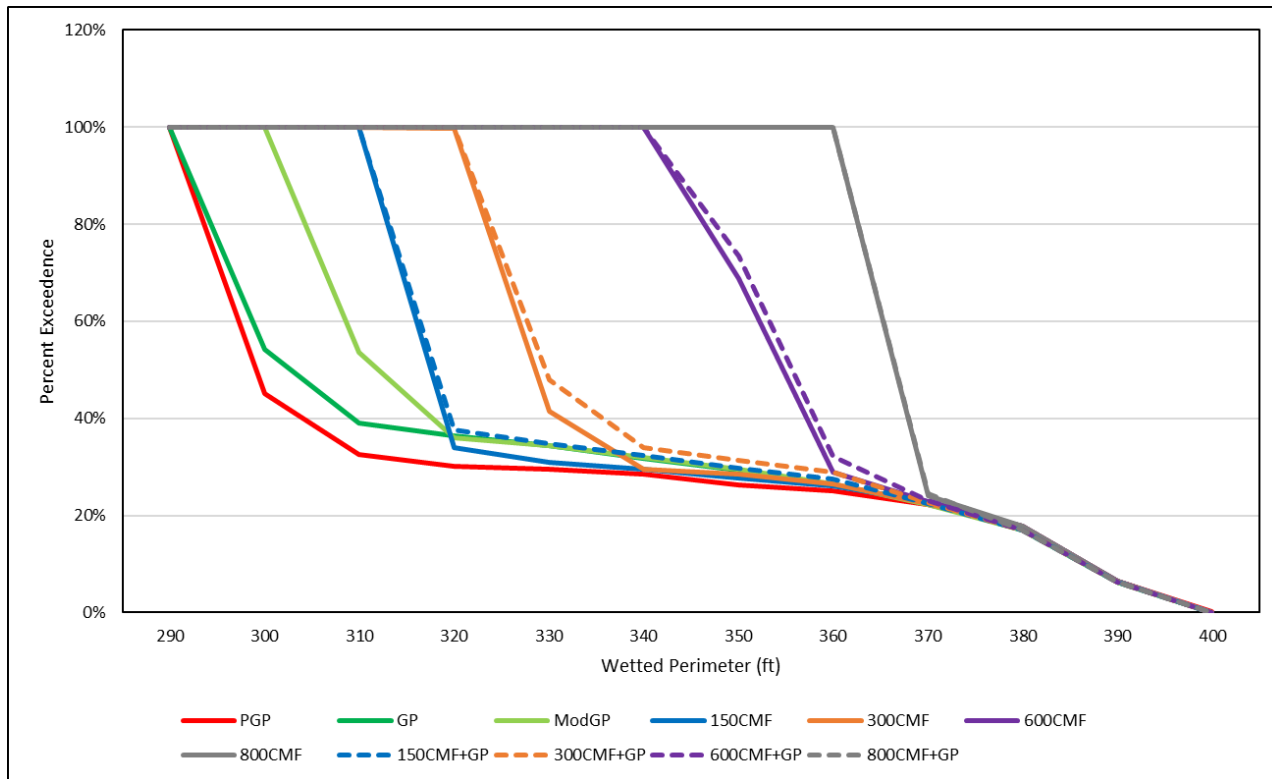
# Amount of Wetted Perimeter



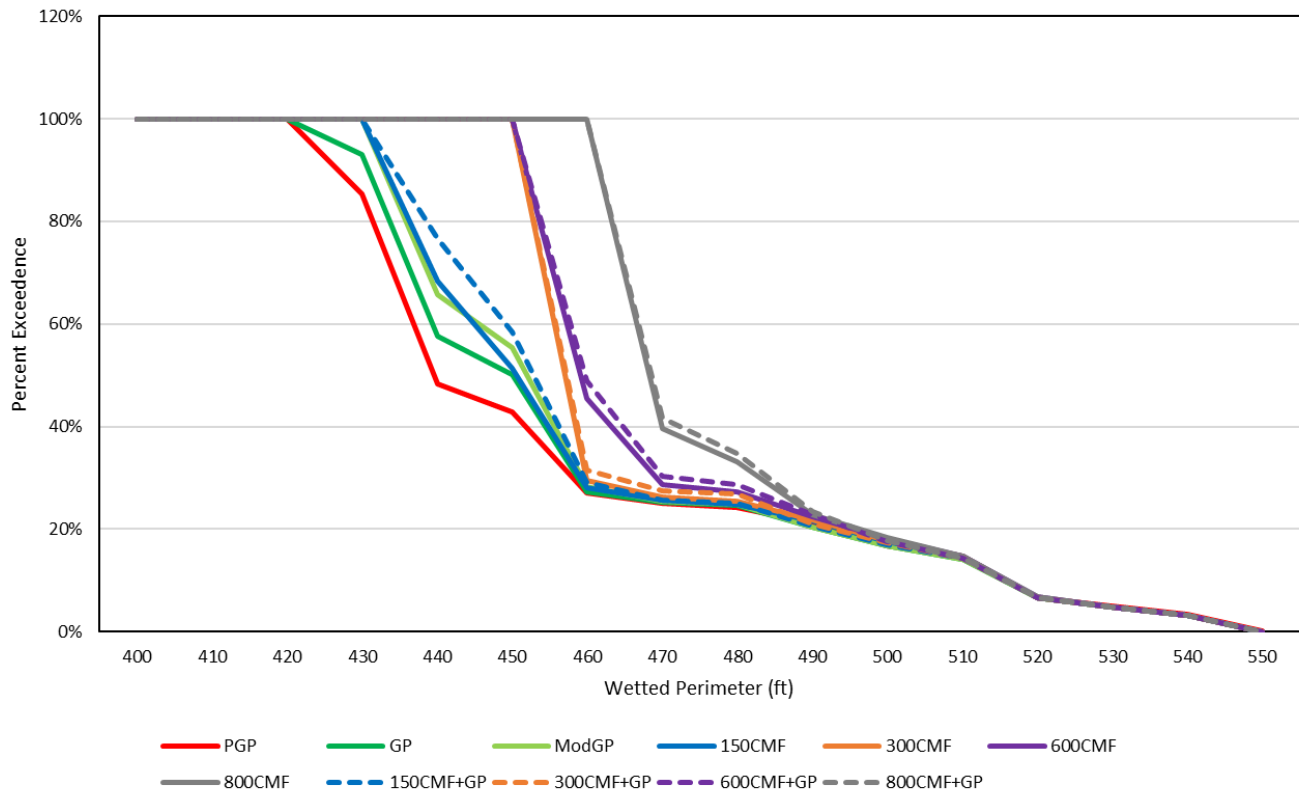
$$\text{Relative \% Difference} = (\text{DailyAvgWP}_{\text{PGP}} - \text{DailyAvgWP}_{\text{GP}}) \div ((\text{DailyAvgWP}_{\text{PGP}} + \text{DailyAvgWP}_{\text{GP}})/2)$$

Miles Below Harris	0.4	1	2	4	7	10	14	19	23	38	43
Mesohabitat Type	Riffle	Riffle	Riffle	Pool	Pool	Riffle	Run-Pool	Riffle-Run	Riffle	Riffle	Pool
PGP	-1%	0%	-2%	0%	-2%	0%	0%	-1%	-1%	0%	0%
GP	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
ModGP	2%	1%	2%	0%	3%	1%	0%	1%	1%	0%	0%
150CMF	3%	1%	2%	0%	2%	0%	0%	1%	1%	1%	0%
150CMF+GP	3%	1%	3%	0%	3%	1%	0%	1%	1%	1%	0%
300CMF	6%	2%	7%	0%	6%	1%	1%	2%	3%	1%	1%
300CMF+GP	6%	2%	7%	1%	7%	1%	1%	3%	3%	1%	1%
600CMF	11%	3%	8%	1%	11%	2%	1%	7%	7%	2%	1%
600CMF+GP	11%	3%	8%	1%	11%	2%	1%	7%	7%	2%	1%
800CMF	14%	4%	9%	1%	12%	2%	1%	11%	11%	3%	2%
800CMF+GP	14%	4%	9%	1%	13%	2%	1%	11%	11%	3%	2%

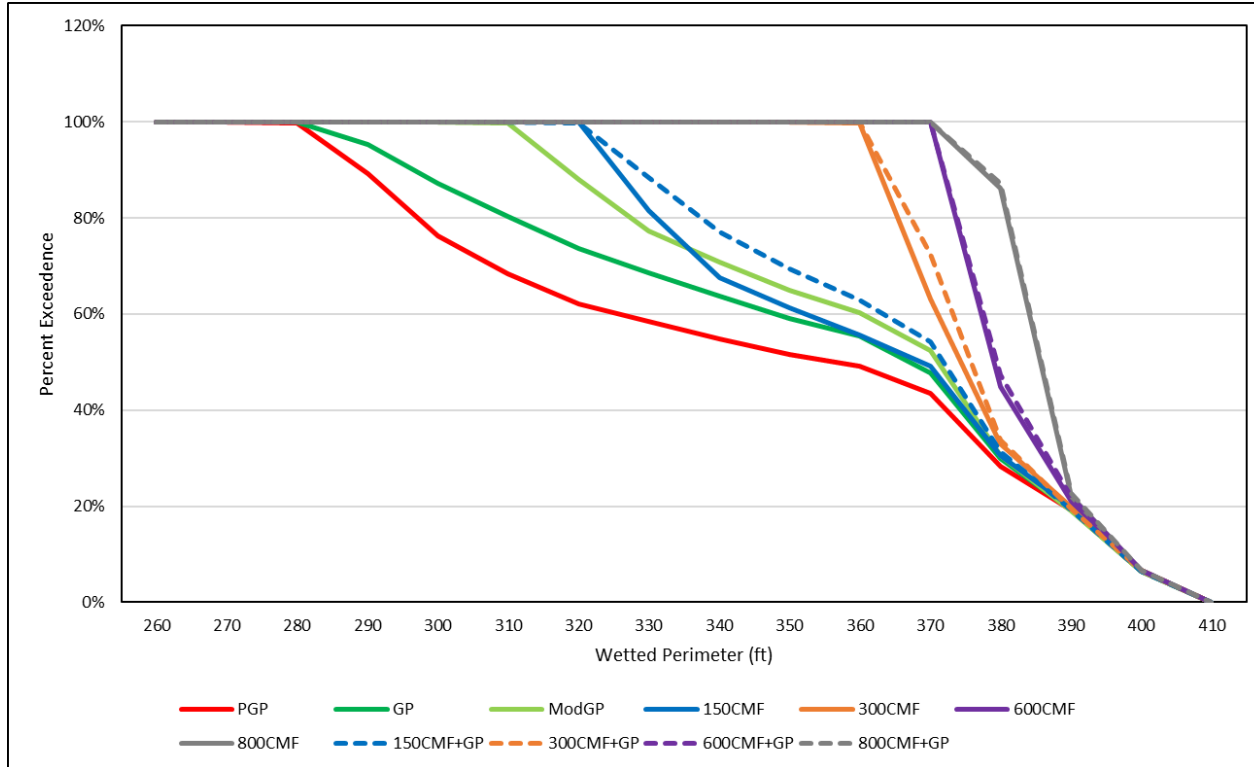
# 0.4 Miles Downstream (Riffle)



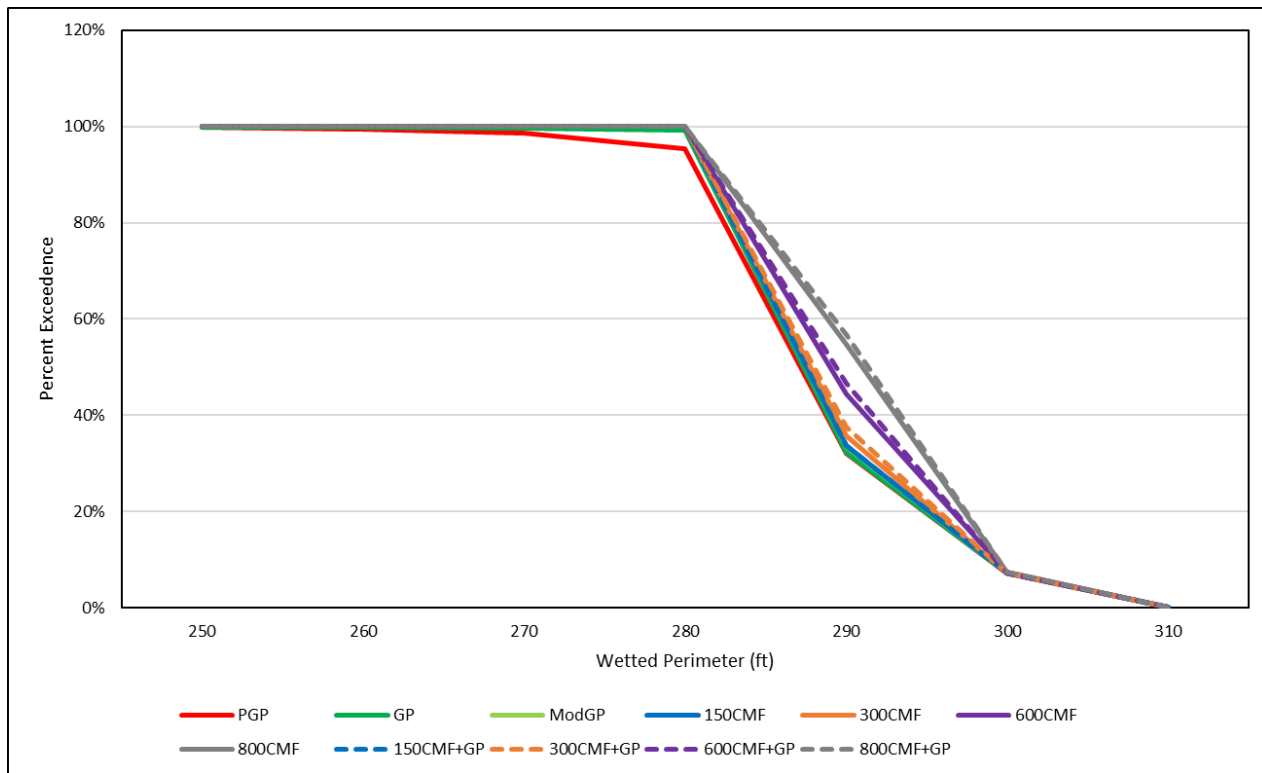
# 1 Mile Downstream (Riffle)



# 2 Miles Downstream (Riffle)

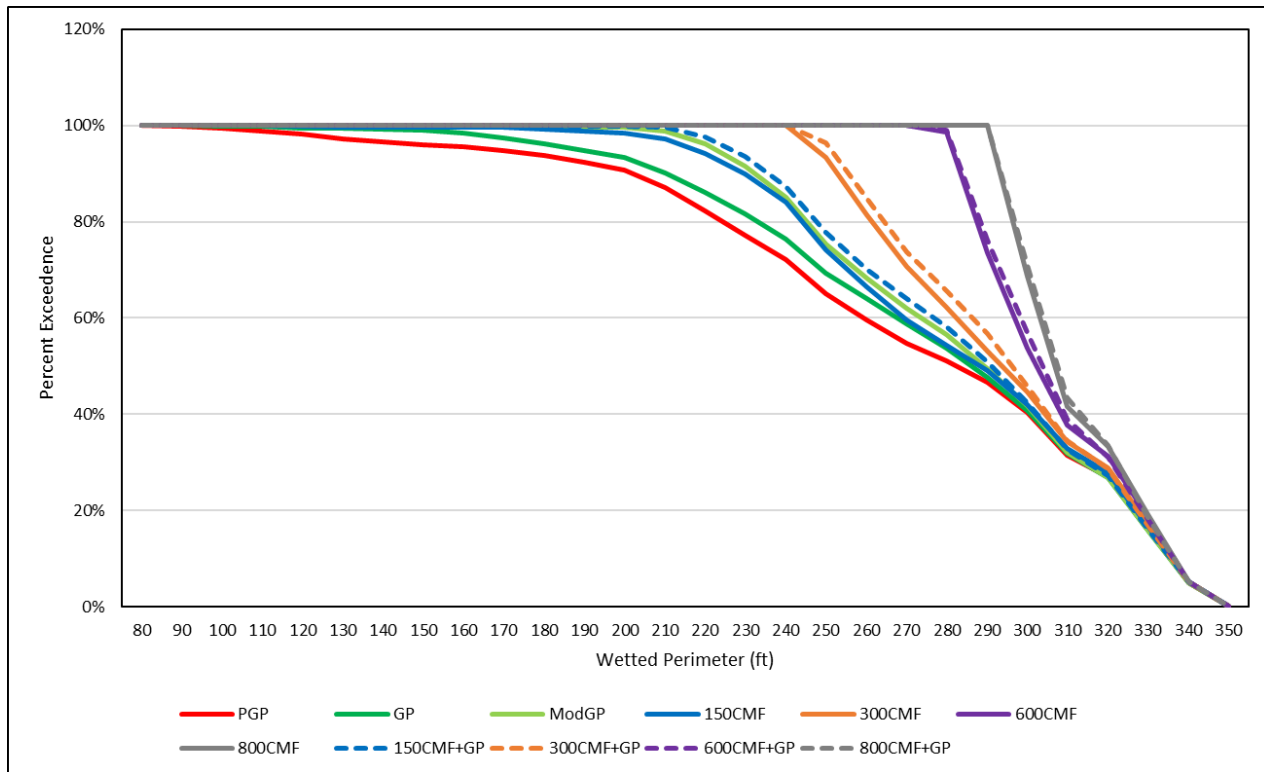


# 4 Miles Downstream (Pool)



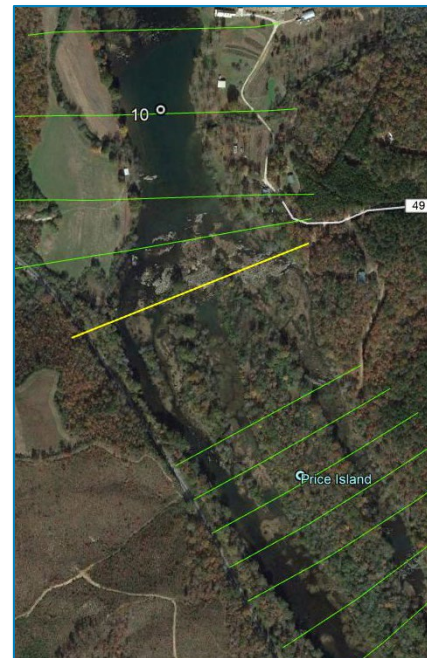
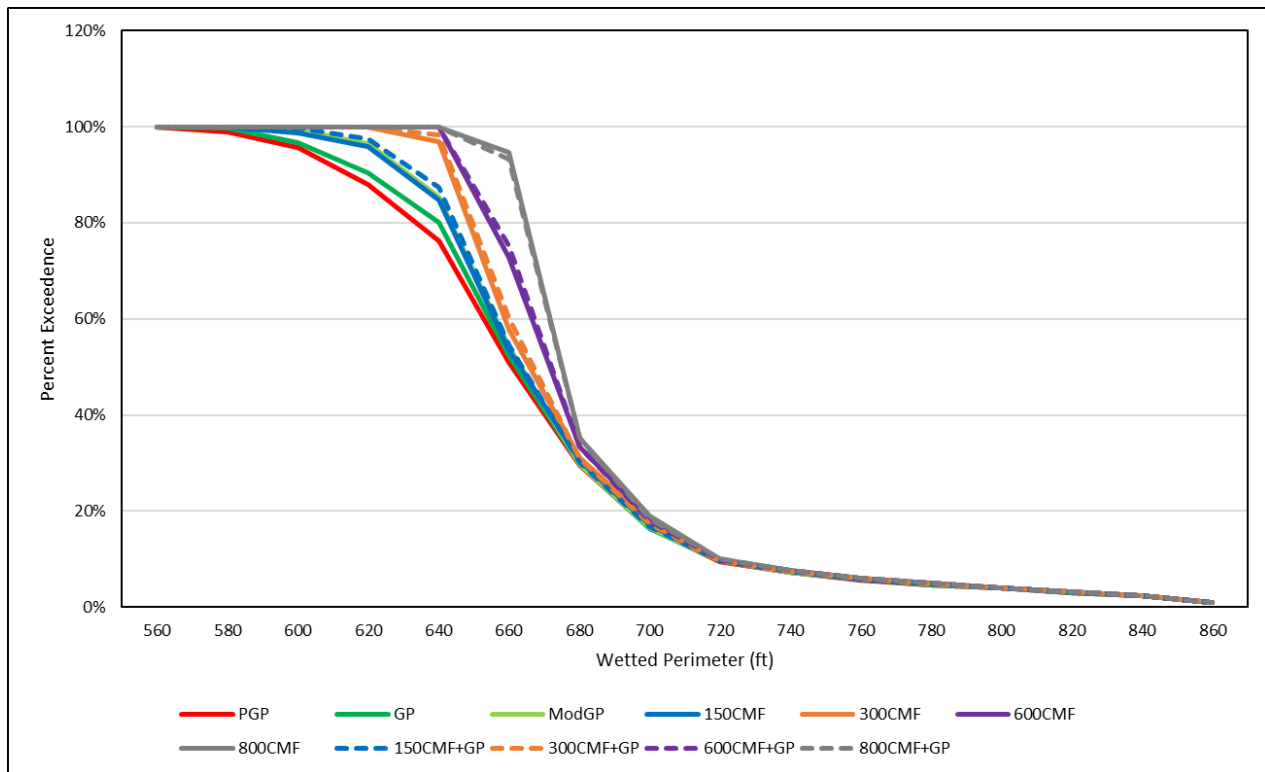


# 7 Miles Downstream (Riffle)

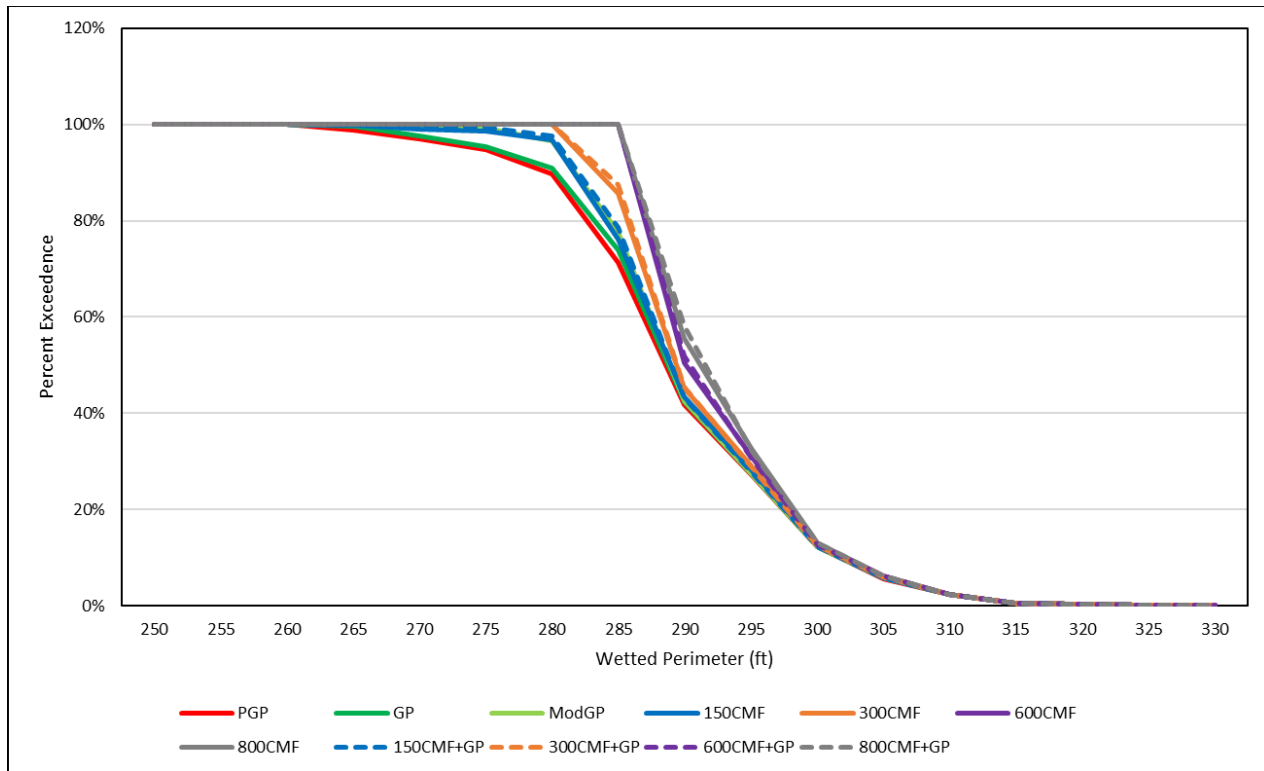




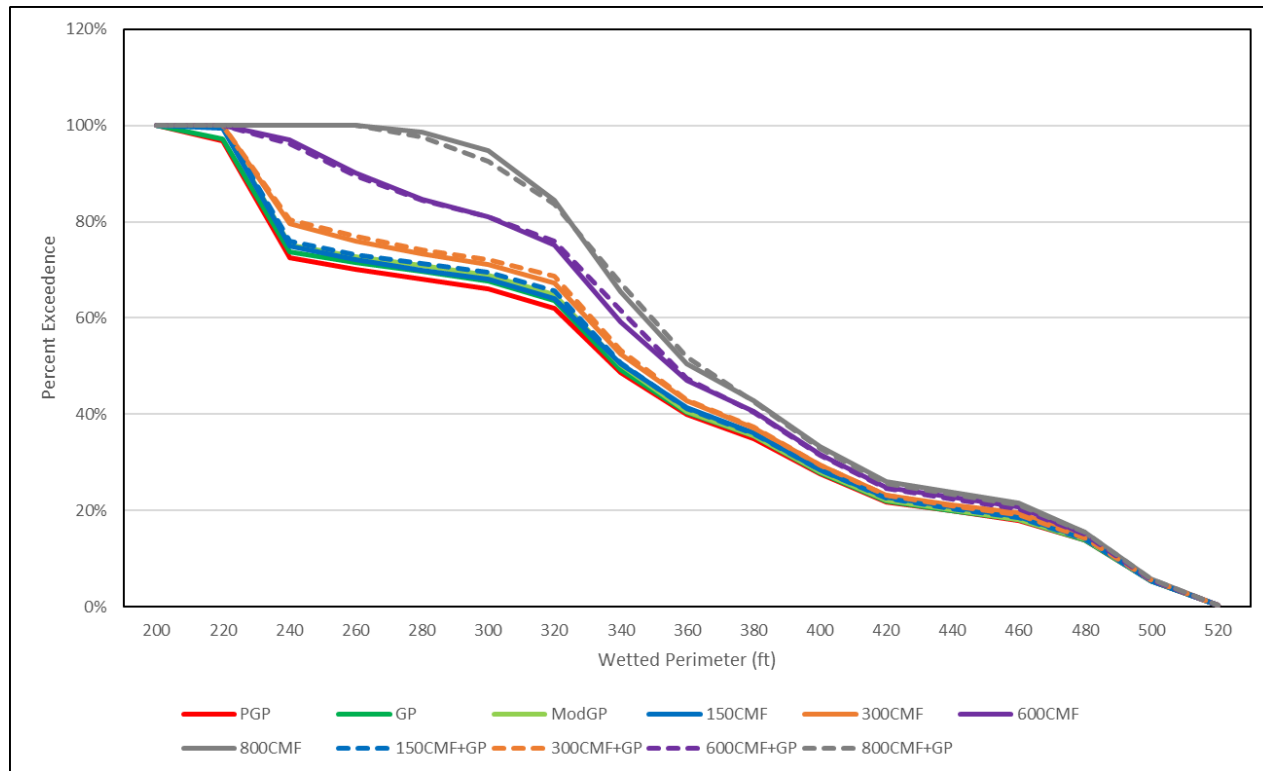
# 10 Miles Downstream (Riffle)



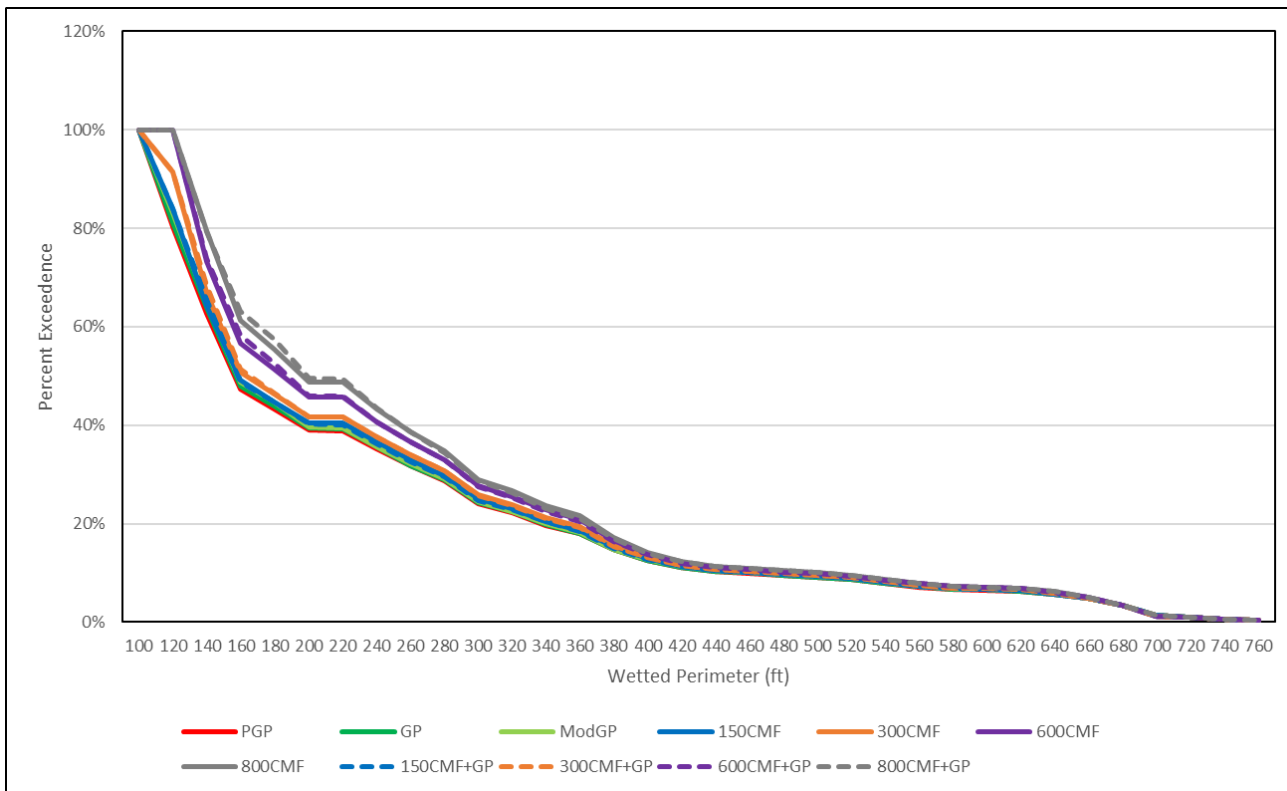
# 14 Miles Downstream (Pool)



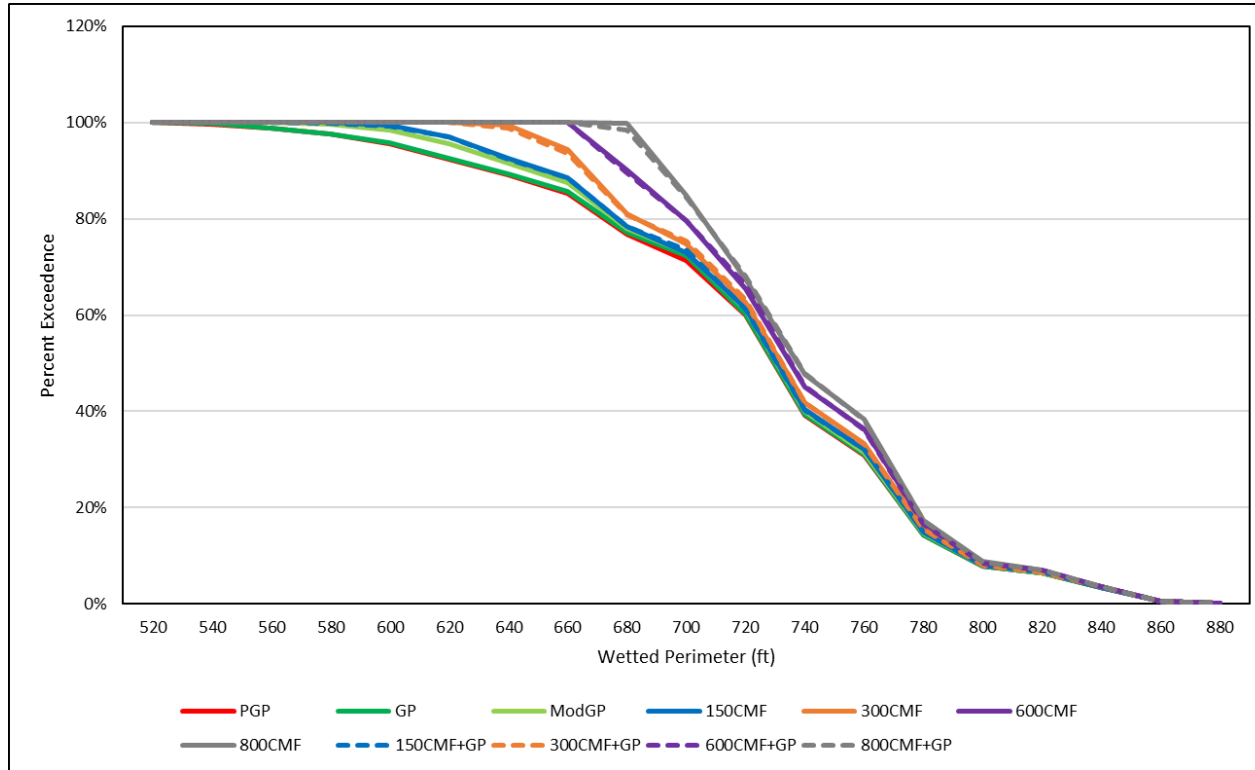
# 19 Miles Downstream (Riffle)



# 23 Miles Downstream (Riffle)

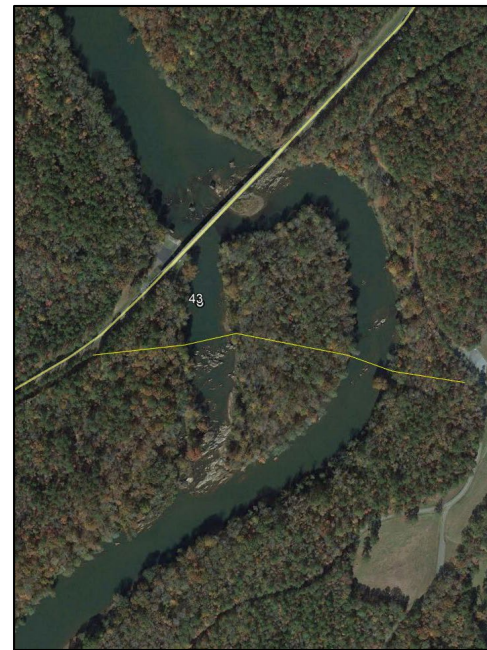
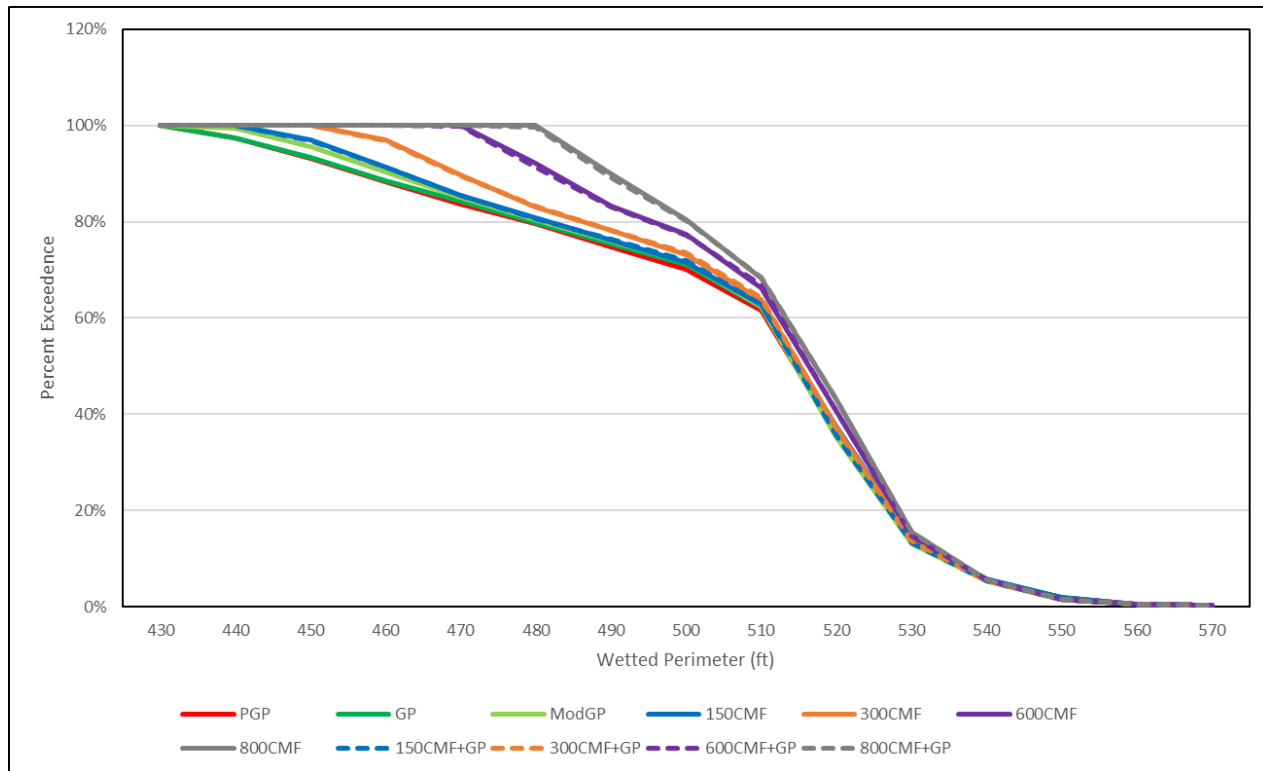


# 38 Miles Downstream (Griffin Shoals)





# 43 Miles Downstream (Horseshoe Bend)



# Amount of Wetted Perimeter



$$\text{Relative \% Difference} = (\text{DailyAvgWP}_{\text{PGP}} - \text{DailyAvgWP}_{\text{GP}}) \div ((\text{DailyAvgWP}_{\text{PGP}} + \text{DailyAvgWP}_{\text{GP}})/2)$$

Miles Below Harris	0.4	1	2	4	7	10	14	19	23	38	43
Mesohabitat Type	Riffle	Riffle	Riffle	Pool	Pool	Riffle	Run-Pool	Riffle-Run	Riffle	Riffle	Pool
PGP	-1%	0%	-2%	0%	-2%	0%	0%	-1%	-1%	0%	0%
GP	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
ModGP	2%	1%	2%	0%	3%	1%	0%	1%	1%	0%	0%
150CMF	3%	1%	2%	0%	2%	0%	0%	1%	1%	1%	0%
150CMF+GP	3%	1%	3%	0%	3%	1%	0%	1%	1%	1%	0%
300CMF	6%	2%	7%	0%	6%	1%	1%	2%	3%	1%	1%
300CMF+GP	6%	2%	7%	1%	7%	1%	1%	3%	3%	1%	1%
600CMF	11%	3%	8%	1%	11%	2%	1%	7%	7%	2%	1%
600CMF+GP	11%	3%	8%	1%	11%	2%	1%	7%	7%	2%	1%
800CMF	14%	4%	9%	1%	12%	2%	1%	11%	11%	3%	2%
800CMF+GP	14%	4%	9%	1%	13%	2%	1%	11%	11%	3%	2%

# Wetted Perimeter Stability



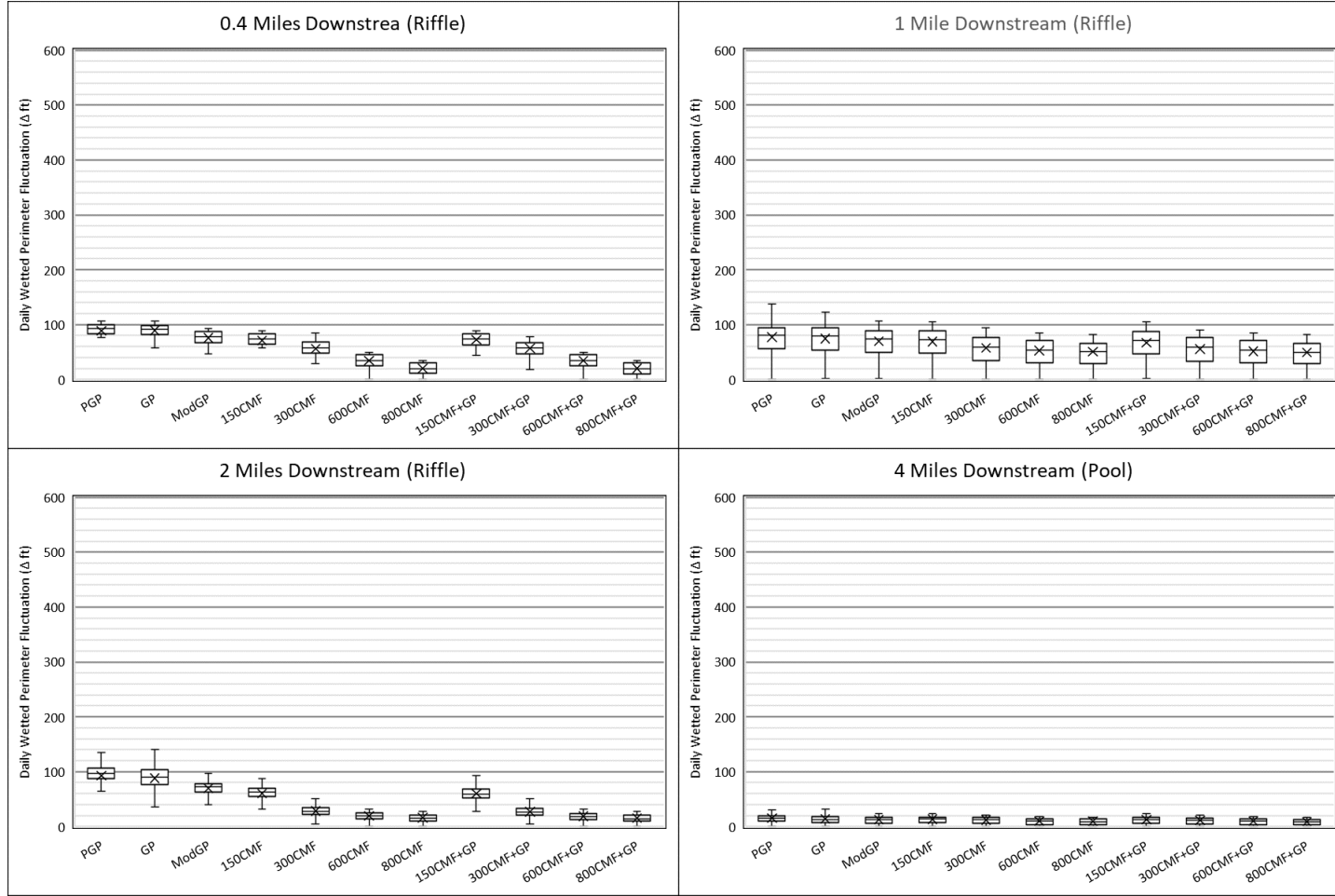
Daily Maximum – Daily Minimum = Daily Range

Relative % Difference =  $(\text{Daily Range}_{\text{PGP}} - \text{Daily Range}_{\text{GP}}) \div ((\text{Daily Range}_{\text{PGP}} + \text{Daily Range}_{\text{GP}})/2)$

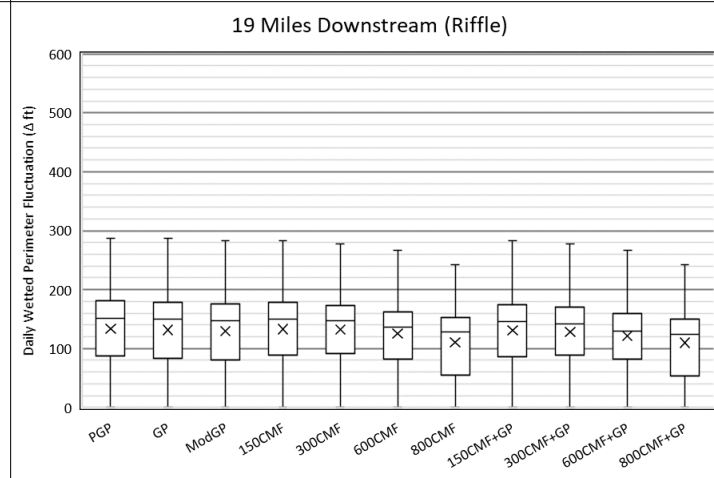
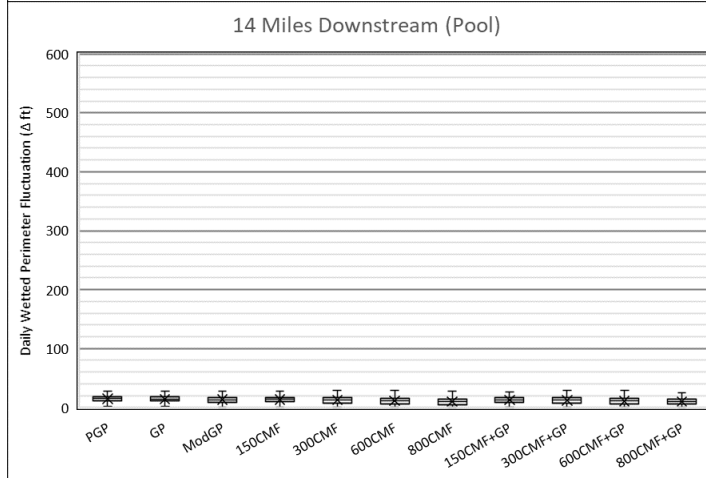
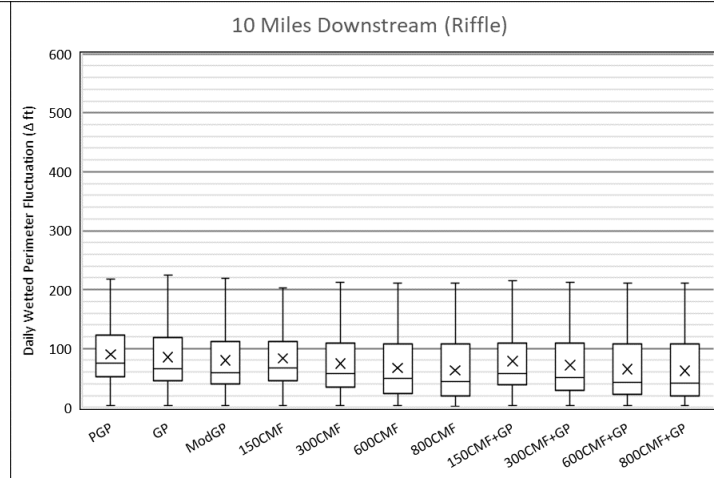
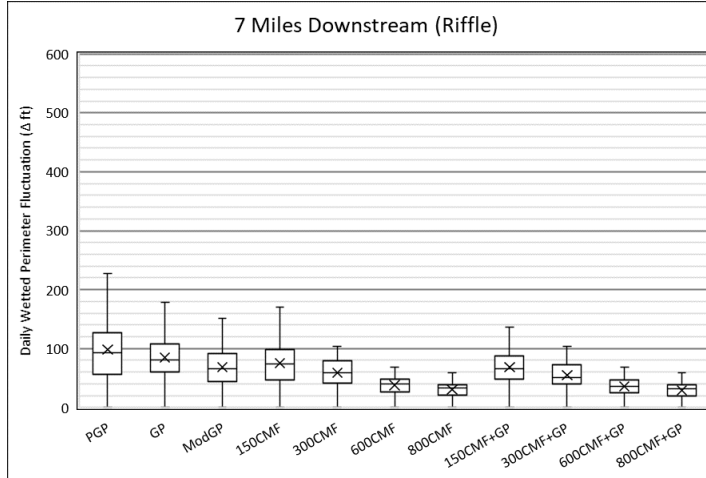
Mesohabitat Type	Riffle	Riffle	Riffle	Pool	Pool	Riffle	Run-Pool	Riffle-Run	Riffle	Riffle	Pool
Miles Below Harris	0.4	1	2	4	7	10	14	19	23	38	43
PGP	1%	-3%	-5%	-13%	-16%	-5%	-4%	-2%	0%	-1%	-1%
GP	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
ModGP	15%	7%	21%	9%	19%	7%	9%	2%	0%	5%	4%
150CMF	20%	7%	31%	7%	11%	3%	5%	-1%	-1%	3%	2%
150CMF+GP	19%	10%	32%	10%	19%	8%	10%	1%	-1%	5%	5%
300CMF	37%	23%	68%	14%	31%	13%	13%	0%	-3%	9%	9%
300CMF+GP	37%	25%	70%	18%	35%	16%	16%	3%	-2%	10%	10%
600CMF	61%	29%	78%	28%	56%	22%	23%	5%	-4%	14%	20%
600CMF+GP	61%	31%	78%	30%	58%	24%	25%	8%	-2%	15%	21%
800CMF	77%	32%	82%	35%	64%	26%	28%	16%	-2%	17%	27%
800CMF+GP	78%	34%	82%	37%	66%	28%	29%	17%	-1%	18%	27%



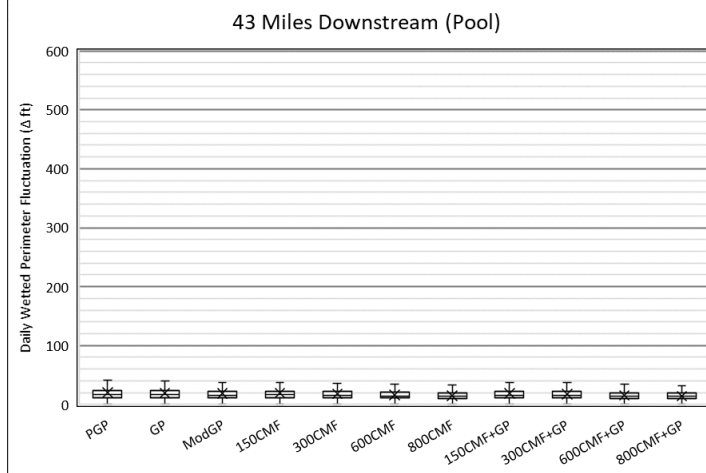
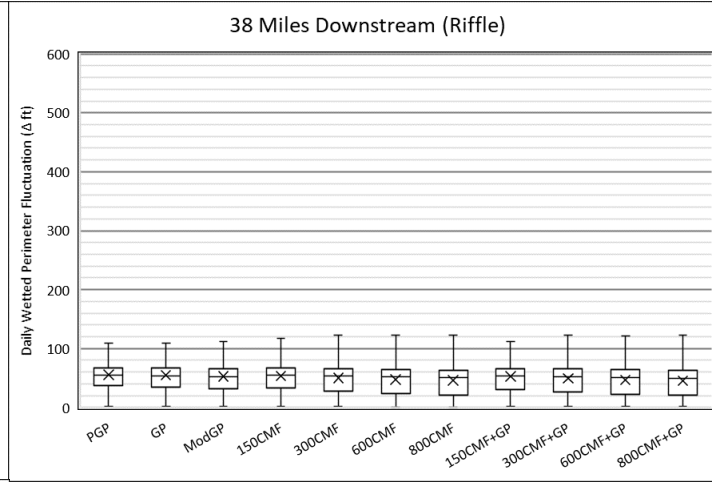
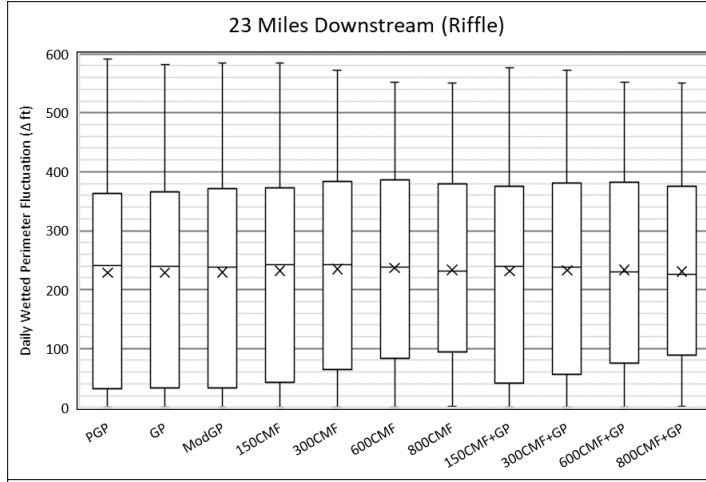
# Wetted Perimeter Daily Fluctuations



# Wetted Perimeter Daily Fluctuations



# Wetted Perimeter Daily Fluctuations



# Summary of Wetted Perimeter Analysis



## Amount

Miles Below Harris	0.4	1	2	4	7	10	14	19	23	38	43
Mesohabitat Type	Riffle	Riffle	Riffle	Pool	Pool	Riffle	Run-Pool	Riffle-Run	Riffle	Riffle	Pool
PGP	-1%	0%	-2%	0%	-2%	0%	0%	-1%	-1%	0%	0%
GP	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
ModGP	2%	1%	2%	0%	3%	1%	0%	1%	1%	0%	0%
150CMF	3%	1%	2%	0%	2%	0%	0%	1%	1%	1%	0%
150CMF+GP	3%	1%	3%	0%	3%	1%	0%	1%	1%	1%	0%
300CMF	6%	2%	7%	0%	6%	1%	1%	2%	3%	1%	1%
300CMF+GP	6%	2%	7%	1%	7%	1%	1%	3%	3%	1%	1%
600CMF	11%	3%	8%	1%	11%	2%	1%	7%	7%	2%	1%
600CMF+GP	11%	3%	8%	1%	11%	2%	1%	7%	7%	2%	1%
800CMF	14%	4%	9%	1%	12%	2%	1%	11%	11%	3%	2%
800CMF+GP	14%	4%	9%	1%	13%	2%	1%	11%	11%	3%	2%

## Stability

PGP	1%	-3%	-5%	-13%	-16%	-5%	-4%	-2%	0%	-1%	-1%
GP	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
ModGP	15%	7%	21%	9%	19%	7%	9%	2%	0%	5%	4%
150CMF	20%	7%	31%	7%	11%	3%	5%	-1%	-1%	3%	2%
150CMF+GP	19%	10%	32%	10%	19%	8%	10%	1%	-1%	5%	5%
300CMF	37%	23%	68%	14%	31%	13%	13%	0%	-3%	9%	9%
300CMF+GP	37%	25%	70%	18%	35%	16%	16%	3%	-2%	10%	10%
600CMF	61%	29%	78%	28%	56%	22%	23%	5%	-4%	14%	20%
600CMF+GP	61%	31%	78%	30%	58%	24%	25%	8%	-2%	15%	21%
800CMF	77%	32%	82%	35%	64%	26%	28%	16%	-2%	17%	27%
800CMF+GP	78%	34%	82%	37%	66%	28%	29%	17%	-1%	18%	27%

# Aquatic Resources Study Update

# Updates on Downstream Fish Population Study by Auburn University



- Fish Sampling
  - Two remaining sampling events: November 2020 and January 2021
  - All fish samples to date have been worked up and all target species aged
- Fish Movement
  - Electromyogram (EMG) tags replaced with acoustic/radio (CART) tags
  - 8 passive receivers between Harris Dam and Malone and 2 at Wadley
  - 13 Alabama Bass and 3 Tallapoosa Bass tagged between late July and early August
  - Roughly a month and a half of movement data gathered so far
  - Fish also manually tracked with radio receiver
  - Data analysis has begun to investigate how fish respond to releases

# Updates on Downstream Fish Population Study by Auburn University



- Respirometry
  - Static trials have continued
  - 5 specimens per target species per site per trial
- Temperature Data
  - Continuing temperature comparison between regulated and unregulated
- Final Aquatic Resources Report: April 2021

# Green Plan Spawning Windows and Lake Stabilization



# Spawning Windows



## Tallapoosa River – Green Plan Spawning Windows

- Based on hypothesis that periods of stable flow without hydropeaking should increase opportunities for fish to spawn and larvae to develop successfully
- Requested by Irwin in 2006 but could not be accomplished due to a tropical storm system
- Alabama Power coordinated with technical team members to evaluate a 14-day period in March 2017
  - Avoided peaking and provided three 10-minute pulses per day
  - Could not be accomplished during the full 14-day period due to increasing inflows to the lake

# Spawning Windows



## Lake Harris

- At the request of ADCNR, Alabama Power holds lake levels stable or slightly rising for 14 days to benefit fish that spawn in shallow water areas of the lake, such as bass and sunfish
- Typically occurs in April, based on water temperatures
- The full 14 days is not always achieved if inflows are too high

# Threatened & Endangered Species Study Update

# Threatened & Endangered Species Study Progress



- Field Surveys

Species	Nov 2019	Dec 2019	Jan 2020	Feb 2020	Mar 2020	Apr 2020	May 2020	Jun 2020	Jul 2020	Aug 2020	Sep 2020	Oct 2020
Finelined Pocketbook	Harris							Harris	Harris			
Palezone Shiner								Skyline				
White Fringeless Orchid										Harris	Skyline	
Price's Potato Bean											Skyline	
Red-cockaded Woodpecker											Harris	

- Final Threatened and Endangered Species Report: January 2021
- Threatened and Endangered Species Survey Reports
- Revised Threatened and Endangered Species Desktop Assessment

Questions/Comments?

[harrisrelicensing@southernco.com](mailto:harrisrelicensing@southernco.com)