



















The Core Creek –



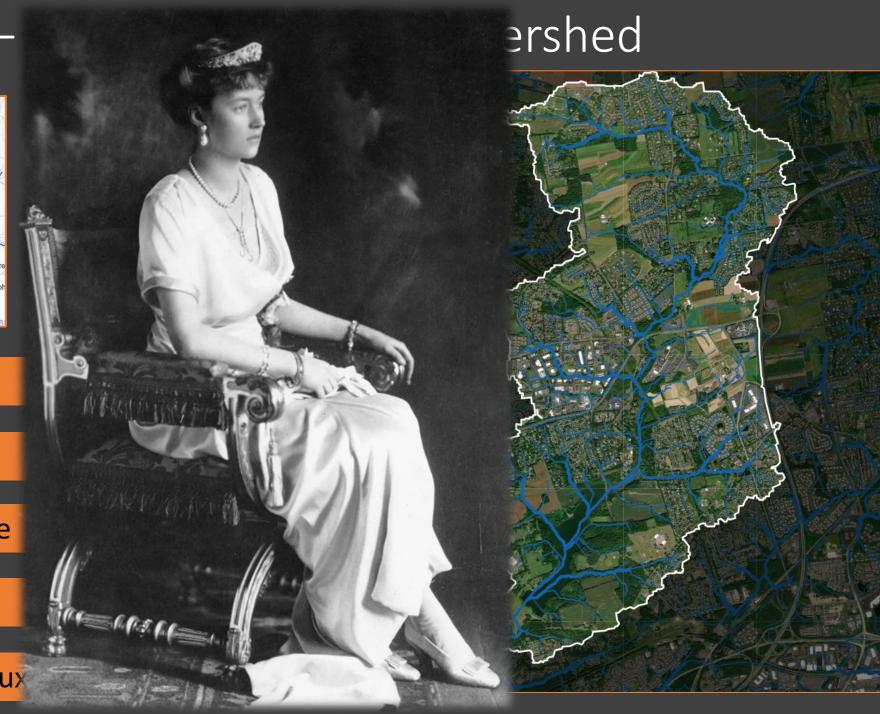
6,033 acres / 10 square mi

Just over half developed

3,000+ parcels ~18k people

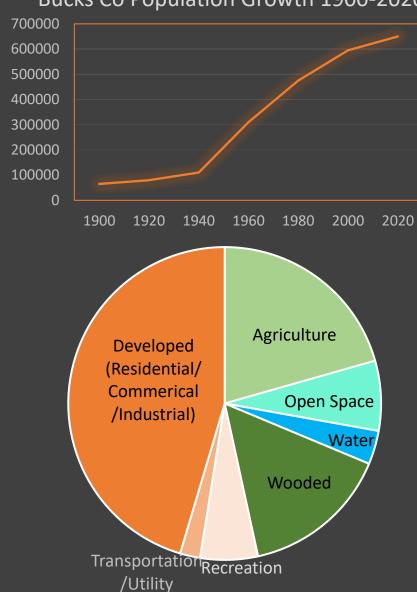
1975 Dam Construction

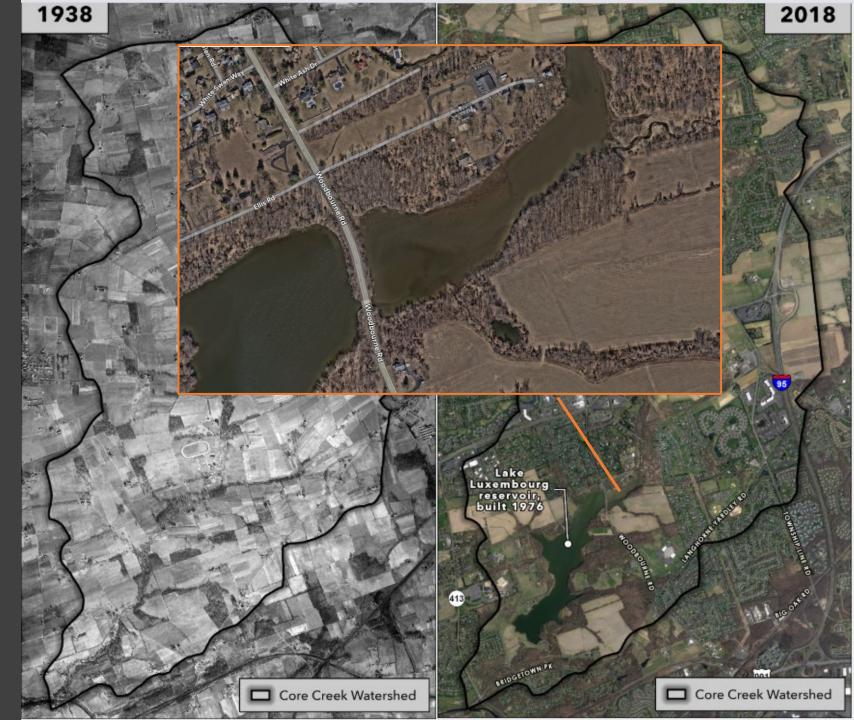
~99% area drains to Lake Lux



The Root Cause

Bucks Co Population Growth 1900-2020





Stabilize the Watershed







Riparian Buffers



Agricultural Conservation

- 1993 First Lake restoration plan
- 1998 2016: Upstream watershed work, BCCD and municipalities
 - Section 319 NPS Implementation Projects = 7
 - 3 WIPs/revisions with fourth underway (1994/2005/2017/2025)

Setting Goals

	Sedimentation Rate in		
Years	Conservation Pool (cy/year)*		
1977-1987	30,000		
1987-1992	15,400		
1992-2013	2,500		

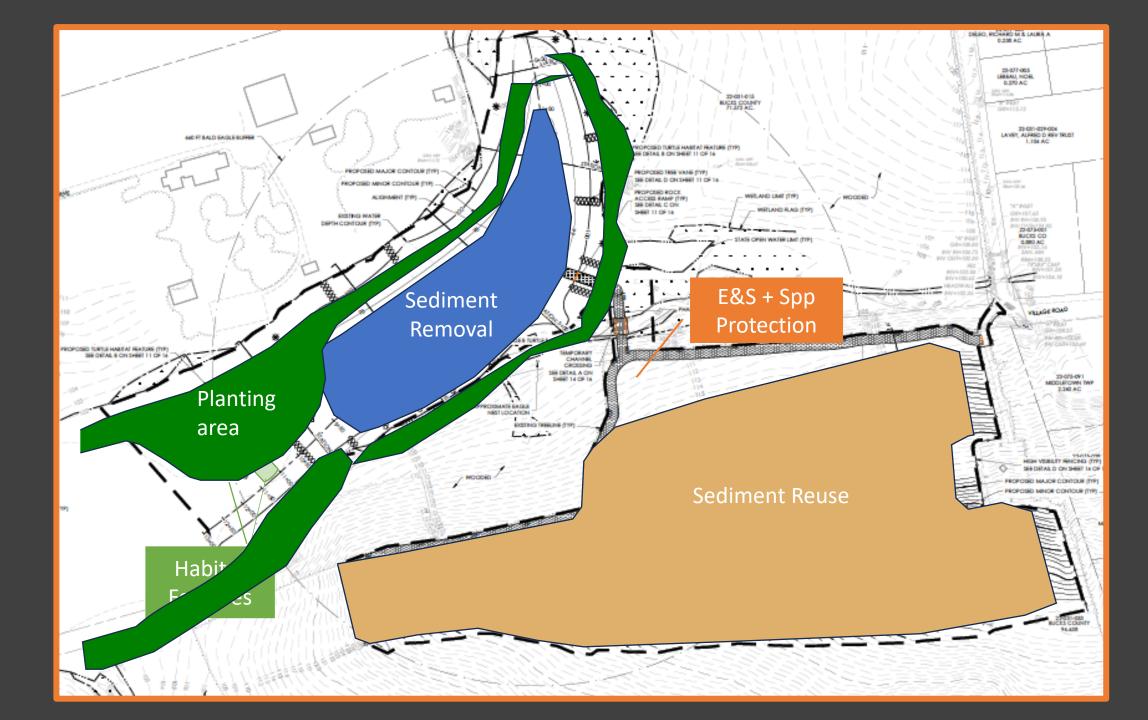
Decreased Sedimentation Rates

2

2017 WIP Projects	Remaining load reduction	TP (lbs) TMDL 502	TSS (lbs) TMDL 694,658	Post Project % TMDL	
Conservation Pool regional wetland BMP		602	398,547	TP -10.5% TSS +43%	
Shoreline Stabilization Project		0.4	792		
Wet ponds (2)		15.8	15,750		
Vegetated Buffers (7)		2.4	4764		
Vegetated Swales (2)		0.8	1,584		
Basin Retrofits (15)		81.1	83,298		
Rain Gardens (2)		18.2	15,136		
Compiled Project	s Pollutant Removal	119	12,1324	TP +24% TSS +83%	

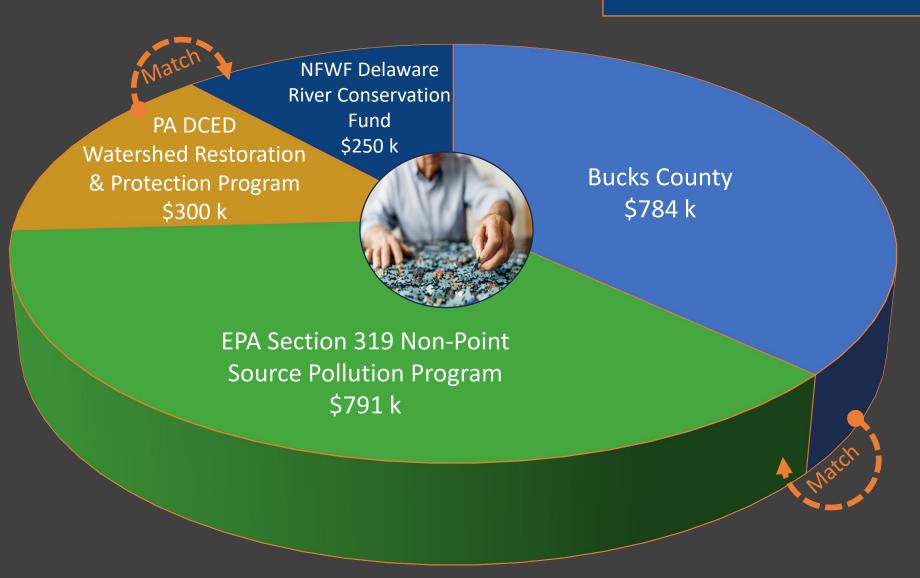
- Most effective phosphorus removal
- Project Design begins in 2018 (319 NPS)

The Plan



Funding

Projected Cost: \$1.8 million



Habitat Restoration

Construction

Contractual

The Timeline

2021

- Contractor Selection
- E&S Controls
- Turtle Exclusion

August - Dec

- Lower Lake
- Excavate / Dewater
- Stabilize

2022

August - Dec

2023

- Planting Protection
- Restoration Planting
- Ag field restoration

2024

- Monitor establishment
- Replanting

Subcontractor mgmt (water monitoring, invasives control) / financial administration / grant reporting / project coordination



Drought



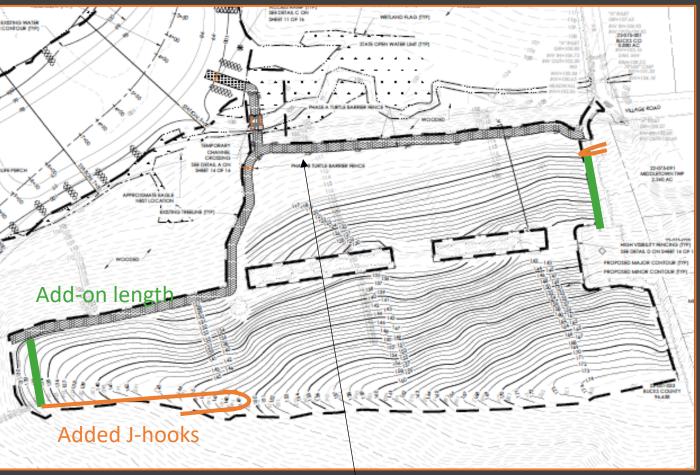
Flash Flood



Drought

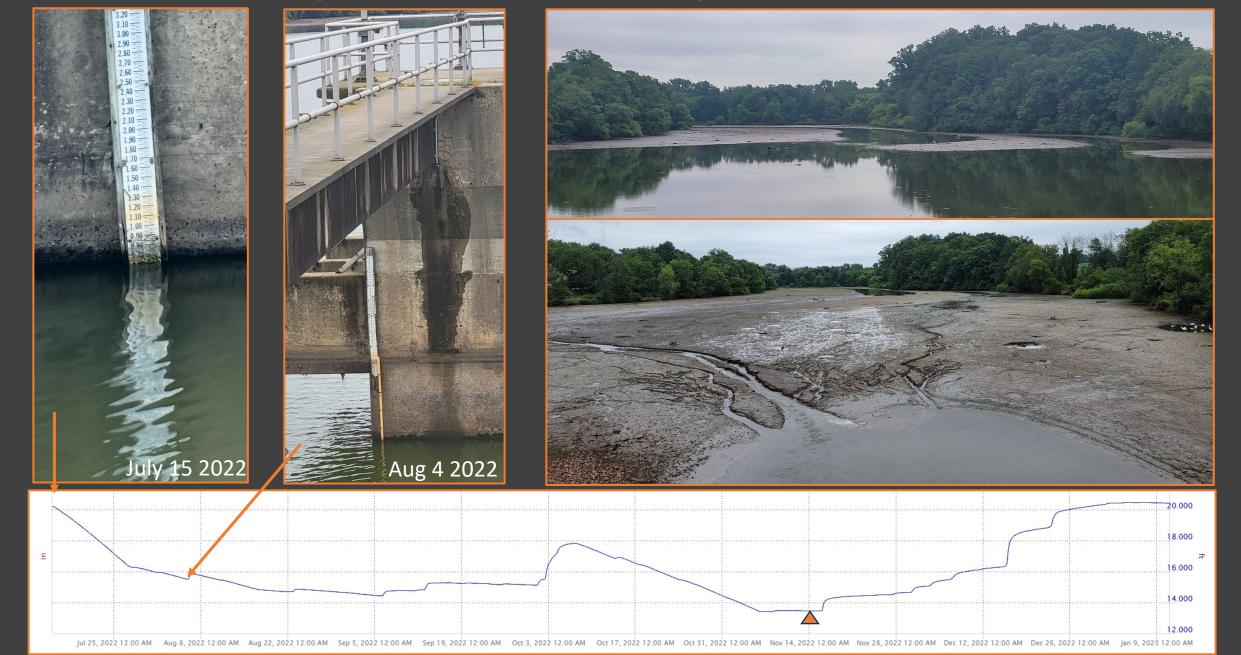
Conservation Measures



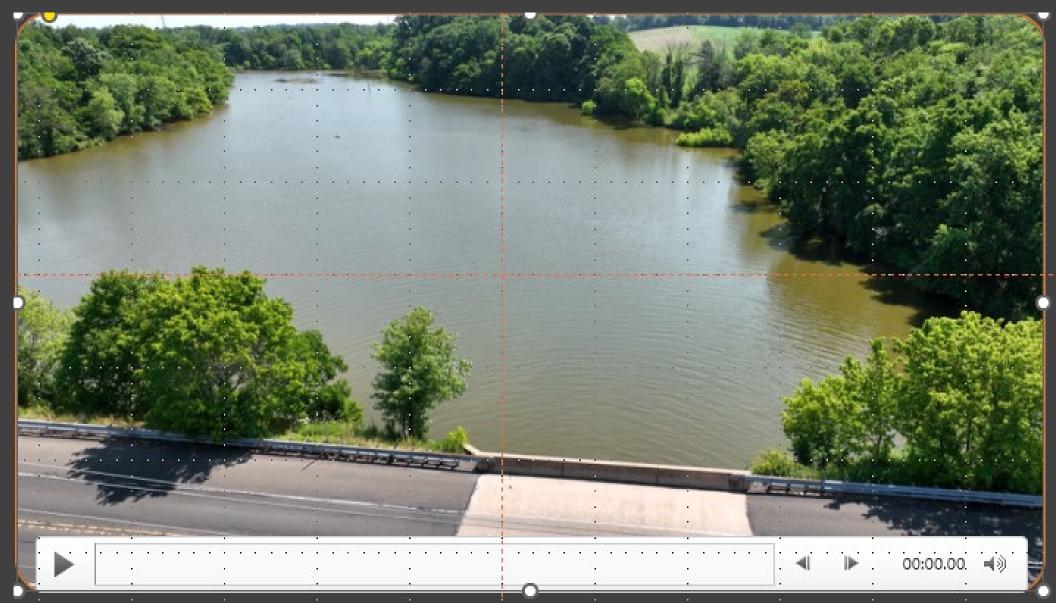


Red Belly Turtle Barrier - Super Silt Fence
Jan 2022

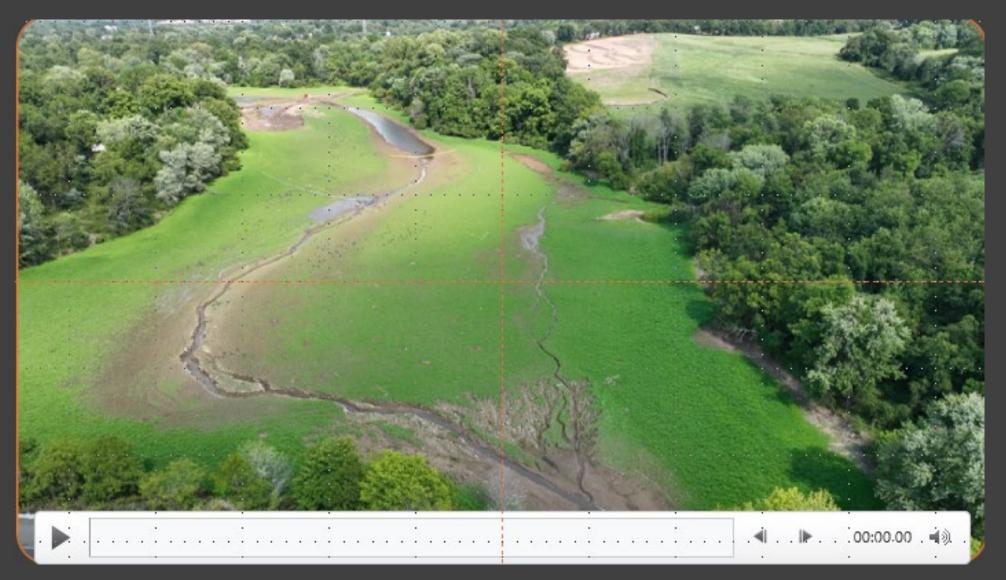
Lake Lowering – and monitoring



Lake Lowering



Lake Lowering

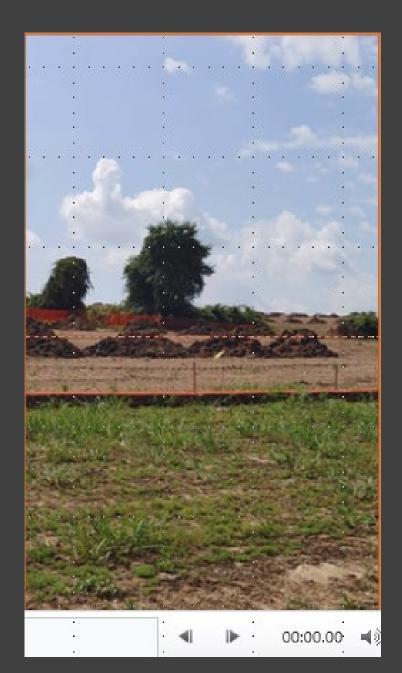


Excavation – Habitat Feature Installation



Excavation - Dewatering



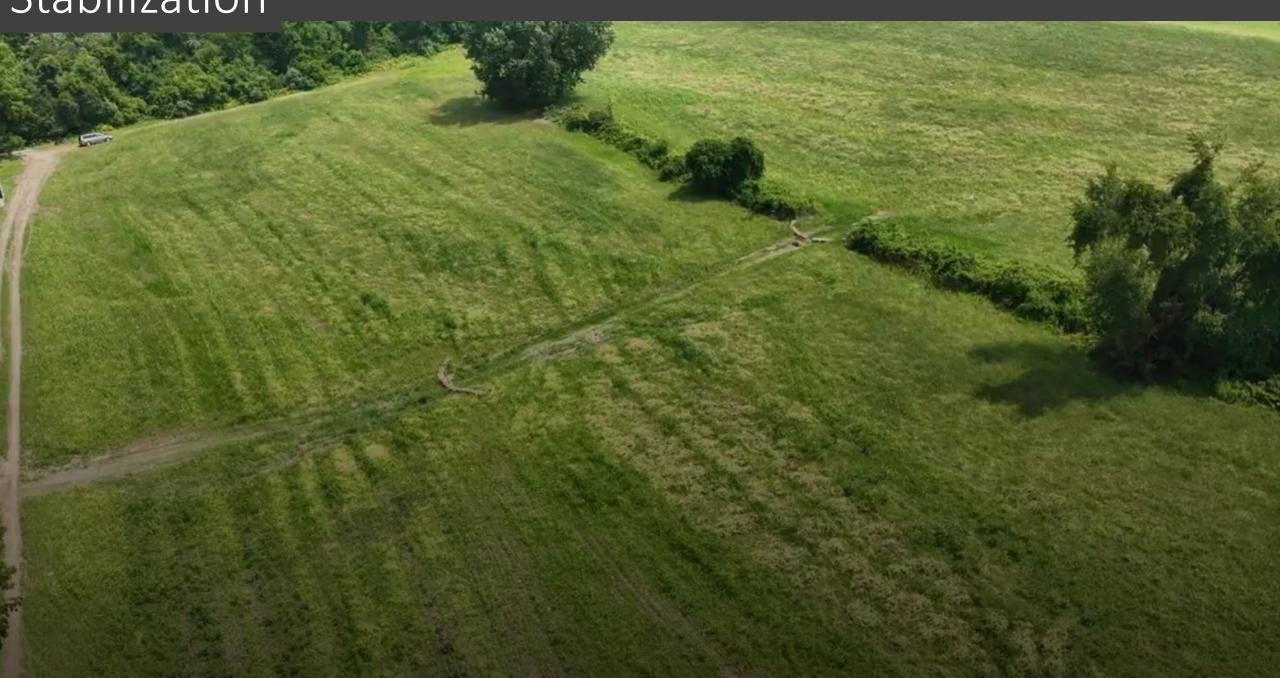


Dewatering - Stabilization

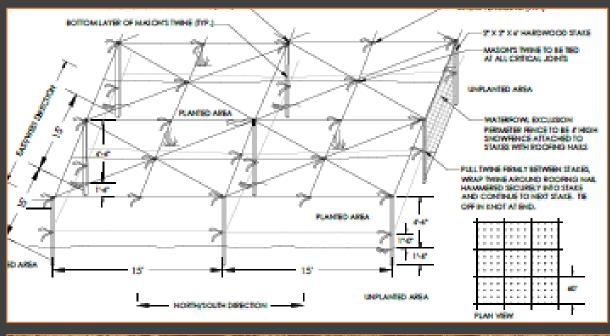




Stabilization



Protecting the Planting Area

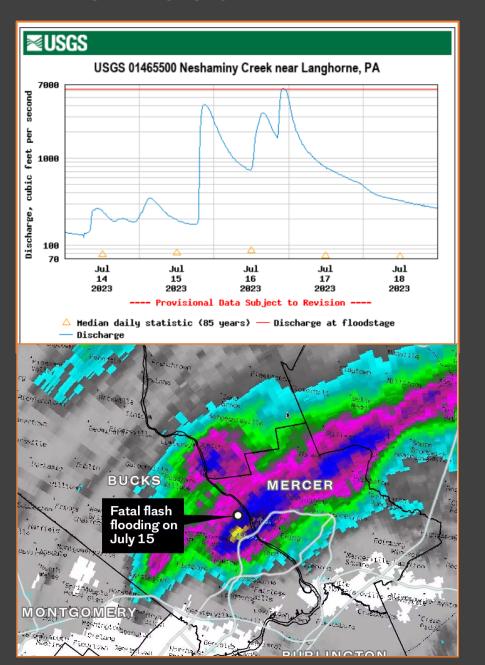








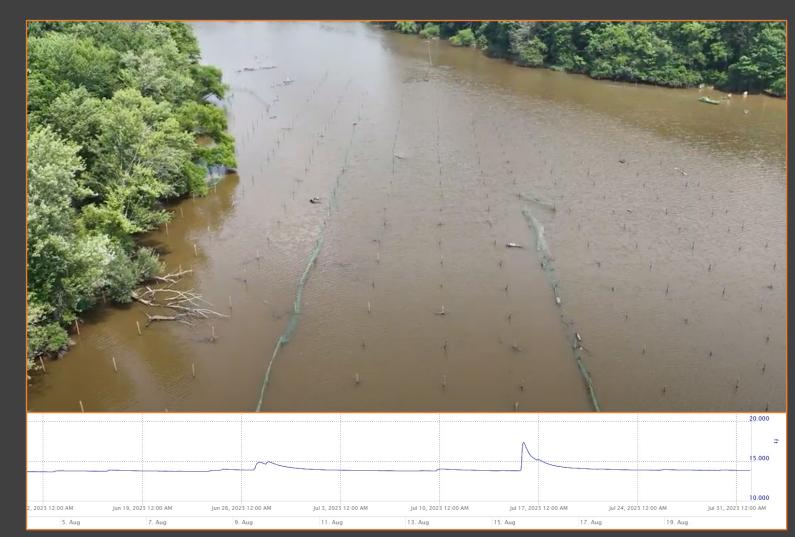
The Flood



Heavy Rains Swamp Northeast Again as Flash Flooding Claims at Least 5 Lives in Pennsylvania

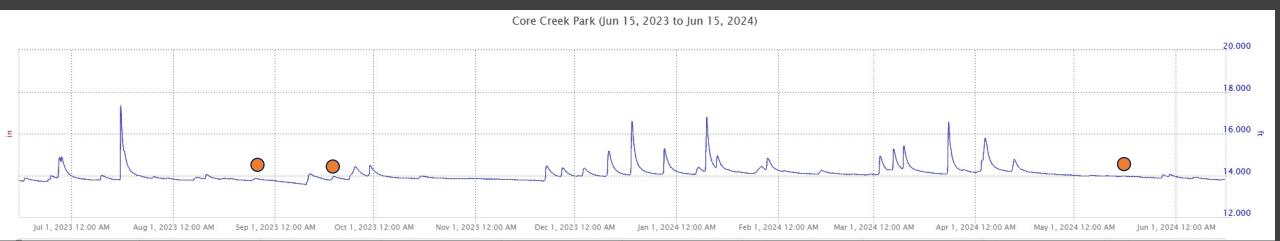
Heavy rains are pounding an already saturated Northeast for the second time in a week, spurring another round of flash flooding, canceled airline flights and power outages

By Associated Press | July 16, 2023, at 10:12 a.m.



Disappointing Establishment



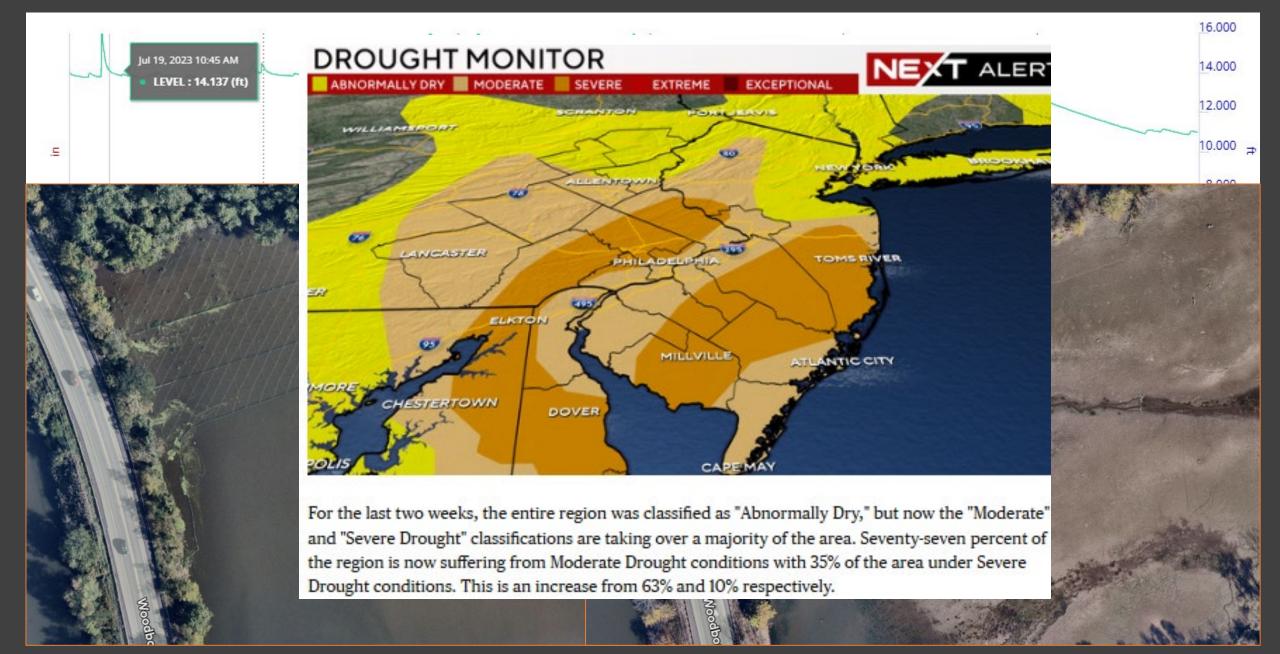


2nd Growing Season - Replanting





And then,



Lessons Learned

- 1. A plan is only as good as its coordinated implementation.
 - Timing constraints, Storm Response, Perceived vs real constraints
- 2. Some risks can be mitigated but not removed.
 - Weather Invasive species
- 3. Be wary of Assumptions.
 - Process Responsibilities

Looking Ahead



Watershed Implementation Plan (WIP) Update (S319)

Coordinated project identification for upstream municipalities Updated Hydrologic / Nutrient Budgets

Lawn to Habitat – Newtown Twp (PA DCNR)

Riparian Buffer – 7.5 ac Meadow - 6.5 ac

Lawn to Habitat – Core Creek Park (PA DCNR)

Riparian Buffer – 3.8 Meadow - 5.5 Upland Woodland – 2.1

<u>Agricultural retirement (S 319 + County)</u>

Row crops field restoration – 5 ac Incremental retirement of row crop fields - ~85 ac

Dam Rehabilitation (NRCS + County)

Spillway post project restoration to grassland/meadow - ~20 ac

Fish Habitat Improvement (PA Fish and Boat)

Cooperative Habitat Improvement

Telling the Story



An Al Generated Podcast



An ArcGIS StoryMap



The Lake Luxembourg Conservation Pool Restoration Project

Learn about the decade-long journey to restore Lake Luxembourg's Conservation Pool.

Bucks County Conservation District • Middletown Township, Bucks County, Pennsylvania









THANK YOU!

Karen Ogden
Bucks County Conservation District
215-345-7577 x107
Kogden@BucksCCD.org

